PREFORMED LINE PRODUCTS
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ENERGY
Product Catalog



COMMUNICATIONS ENERGY NON-UTILITY



Transmission, distribution and fiber optic solutions for the Power Utility Industry.

PREFORMED LINE PRODUCTS

2005 Energy Product Catalog

Transmission

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Transmission: Product Selection Charts

Transmission Line Products for Popular ACSR Conductors								
kcmil	**4/0 6/1**	**266.8 18/1**	**266.8 26/7**	**336.4 18/1**	**336.4 26/7**	**397.5 18/1**	**397.5 26/7**	**477 18/1**
Code Word	**Penguin**	**Waxwing**	**Partridge**	**Merlin**	**Linnet**	**Chickadee**	**Ibis**	**Pelican**
diameter (in.)	**0.563**	**0.609**	**0.642**	**0.684**	**0.720**	**0.743**	**0.783**	**0.814**
PRODUCT								
CUSHION-GRIP Suspension	N/A	CGS-1100	CGS-1100	CGS-1101	CGS-1102	CGS-1102	CGS-1103	CGS-1104
CUSHION-GRIP Support	CGS-2100	CGS-2101	CGS-2101	CGS-2101	CGS-2101	CGS-2101	CGS-2101	CGS-2101
ARMOR-GRIP Suspension	AGS-5104	AGS-5107	AGS-5108	AGS-5110	AGS-5112	AGS-5113	AGS-5115	AGS-5116
ARMOR-GRIP Support	AGS-5204	AGS-5207	AGS-5208	AGS-5210	AGS-5212	AGS-5213	AGS-5215	AGS-5216
ARMOR Rod	AR-0124	AR-0126	AR-0127	AR-0129	AR-0130	AR-0131	AR-0132	AR-0132
Conductor Splice	LS-0134	LS-0136	LS-0137	LS-0139	LS-0140	LS-0141	LS-0142	LS-0143
Full Tension Splice	FTS-5110	FTSMS4290	FTS-5111	FTS-5112	FTS-5113	N/A	FTS-5115	FTSMS6056
Helical Rod Spacer	N/A	N/A	SUMS-9408	N/A	SUMS-7199	N/A	N/A	SUMS-7424
Spacer Damper (Type "C")	N/A	N/A	N/A	CGSDC-X4518	CGSDC-X4519	CGSDC-X4519	CGSDC-X4520	CGSDC-X4521
Spacer Damper (Type "B")	N/A	N/A	N/A	CGSDB-X4518	CGSDB-X4519	CGSDB-X4519	CGSDB-X4520	CGSDB-X4521
VORTX Conductor Damper	VSD-2016	VSD-2016	VSD-2020	VSD-2020	VSD-2020	VSD-2520	VSD-2520	VSD-2525
Spiral Vibration Damper	5050105	5050106	5050106	5050106	5050106	5050106	N/A	N/A
Air Flow Spoiler	5058102	5058103	5058103	5058103	5058103	5058103	5058104	5085104
kcmil	**477 26/7**	**556.5 18/1**	**556.5 26/7**	**605 26/7**	**636 18/1**	**636 26/7**	**666.6 26/7**	**715.5 26/7**
Code Word	**Hawk**	**Osprey**	**Dove**	**Squab**	**Kingbird**	**Grosbeak**	**Gannet**	**Starling**
diameter (in.)	**0.858**	**0.879**	**0.927**	**0.966**	**0.940**	**0.990**	**1.014**	**1.051**
PRODUCT								
CUSHION-GRIP Suspension	CGS-1105	CGS-1105	CGS-1106	CGS-1107	CGS-1107	CGS-1108	CGS-1108	CGS-1109
CUSHION-GRIP Support	CGS-2101	CGS-2101	CGS-2102	CGS-2102	CGS-2102	CGS-2102	CGS-2102	CGS-2102
ARMOR-GRIP Suspension	AGS-5118	AGS-5119	AGS-5122	AGS-5124	AGS-5123	AGS-5125	AGS-5126	AGS-5128
ARMOR-GRIP Susp, EHV	N/A	N/A	AGS-5501	AGS-5503	AGS-5502	AGS-5504	AGS-5505	AGS-5507
ARMOR-GRIP Support	AGS-5218	AGS-5219	AGS-5222	AGS-5224	AGS-5223	AGS-5225	AGS-5226	AGS-5228
ARMOR Rod	AR-0134	AR-0134	AR-0135	AR-0136	AR-0136	AR-0137	AR-0137	AR-0139
ARMOR Rod, EHV	N/A	N/A	N/A	N/A	N/A	AR-0500	AR-0500	AR-0502
Conductor Splice	LS-0145	LS-0145	LS-0146	LS-0147	LS-0147	LS-0148	LS-0149	LS-0150
Full Tension Splice	FTS-5117	FTSMS6515	FTS-5118	N/A	FTSMS4264	FTS-5120	FTSMS6627	FTSMS2901
Helical Rod Spacer	SUMS-3352	SUMS-7425	SUMS-3540	SUMS-5423	SUMS-3540	SUMS-5423	SUMS-7426	SUMS-5504
Spacer Damper (Type "C")	CGSDC-X4522	CGSDC-X4523	CGSDC-X4524	CGSDC-X4525	CGSDC-X4524	CGSDC-X4526	CGSDC-X4526	CGSDC-X4527
Spacer Damper (Type "B")	CGSDB-X4522	CGSDB-X4523	CGSDB-X4524	CGSDB-X4525	CGSDB-X4524	CGSDB-X4526	CGSDB-X4526	CGSDB-X4527
VORTX Conductor Damper	VSD-3525	VSD-3525	VSD-3525	VSD-3525	VSD-3525	VSD-4032	VSD-4032	VSD-4032
Air Flow Spoiler	5058104	5058104	5058105	5058105	5058105	5058105	5058105	5058106

Transmission: Product Selection Charts

Transmission Line Products for Popular ACSR Conductors								
kcmil	**795 36/1**	**795 45/7**	**795 54/7**	**795 26/7**	**954 45/7**	**954 54/7**	**1033.5 45/7**	**1033.5 54/7**
Code Word	**Coot**	**Tern**	**Condor**	**Drake**	**Rail**	**Cardinal**	**Ortolan**	**Curlew**
diameter (in.)	**1.040**	**1.063**	**1.093**	**1.108**	**1.165**	**1.196**	**1.212**	**1.244**
PRODUCT								
CUSHION-GRIP Suspension	CGS-1109	CGS-1109	CGS-1110	CGS-1110	CGS-1112	CGS-1112	CGS-1113	CGS-1114
CUSHION-GRIP Support	CGS-2102	CGS-2102	CGS-2102	CGS-2102	CGS-2102	CGS-2102	N/A	N/A
ARMOR-GRIP Suspension	AGS-5127	AGS-5128	AGS-5130	AGS-5130	AGS-5133	AGS-5134	AGS-5135	AGS-5136
ARMOR-GRIP Susp, EHV	AGS-5506	AGS-5507	AGS-5509	AGS-5509	AGS-5512	AGS-5513	AGS-5514	AGS-5515
ARMOR-GRIP Support	AGS-5227	AGS-5228	AGS-5230	AGS-5230	AGS-5233	AGS-5234	AGS-5235	AGS-5236
ARMOR Rod	AR-0139	AR-0139	AR-0140	AR-0141	AR-0143	AR-0143	AR-0144	AR-0144
ARMOR Rod, EHV	AR-0502	AR-0502	AR-0503	AR-0504	AR-0506	AR-0506	AR-0507	AR-0507
Conductor Splice	LS-0149	LS-0150	LS-0151	LS-0151	LS-0152	LS-0153	LS-0153	LS-0154
Full Tension Splice	N/A	N/A	FTSMS8375	FTS-5122	FTSMS4739	FTSMS4743	N/A	FTSMS7308
Helical Rod Spacer	SUMS-5504	SUMS-5504	SUMS-1245	SUMS-1245	SUMS-3850	SUMS-3850	SUMS-6070	SUMS-6070
Spacer Damper (Type "C")	CGSDC-X4527	CGSDC-X4527	CGSDC-X4528	CGSDC-X4529	CGSDC-X4530	CGSDC-X4531	CGSDC-X4531	CGSDC-X4532
Spacer Damper (Type "B")	CGSDB-X4527	CGSDB-X4527	CGSDB-X4528	CGSDB-X4529	CGSDB-X4530	CGSDB-X4531	CGSDB-X4531	CGSDB-X4532
VORTX Conductor Damper	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032
Air Flow Spoiler	5058106	5058106	5058106	5058106	5058106	5058107	5058107	5085107
kcmil	**1113 45/7**	**1113 54/19**	**1192.5 45/7**	**1192.5 54/19**	**1272 45/7**	**1272 54/19**	**1351.5 45/7**	**1351.5 54/19**
Code Word	**Bluejay**	**Finch**	**Bunting**	**Grackle**	**Bittern**	**Pheasant**	**Dipper**	**Martin**
diameter (in.)	**1.259**	**1.293**	**1.302**	**1.333**	**1.345**	**1.382**	**1.386**	**1.424**
PRODUCT								
CUSHION-GRIP Suspension	CGS-1114	CGS-1114	CGS-1115	CGS-1115	CGS-1115	CGS-1116	CGS-1116	CGS-1117
CUSHION-GRIP Support	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARMOR-GRIP Suspension	AGS-5136	AGS-5138	AGS-5138	AGS-5139	AGS-5139	AGS-5140	AGS-5140	AGS-5142
ARMOR-GRIP Susp, EHV	AGS-5515	AGS-5517	AGS-5517	AGS-5518	AGS-5518	AGS-5519	AGS-5519	AGS-5521
ARMOR-GRIP Support	AGS-5236	AGS-5238	AGS-5238	AGS-5239	AGS-5239	AGS-5240	AGS-5240	AGS-5242
ARMOR Rod	AR-0144	AR-0145	AR-0145	AR-0146	AR-0146	AR-0146	AR-0146	AR-0147
ARMOR Rod, EHV	AR-0507	AR-0508	AR-0508	AR-0509	AR-0509	AR-0509	AR-0509	AR-0510
Conductor Splice	LS-0154	LS-0154	LS-0155	LS-0155	LS-0155	LS-0156	LS-0156	LSMS11031
Full Tension Splice	FTSMS2782	FTSMS7916	N/A	N/A	FTS-5123	FTSMS7063	N/A	FTSMS7945
Helical Rod Spacer	SUMS-5276	SUMS-5276	SUMS-5276	SUMS-5519	SUMS-5519	SUMS-7228	SUMS-7228	SUMS-7228
Spacer Damper (Type "C")	CGSDC-X4532	CGSDC-X4533	CGSDC-X4533	CGSDC-X4534	CGSDC-X4535	CGSDC-X4535	CGSDC-X4536	CGSDC-X4537
Spacer Damper (Type "B")	CGSDB-X4532	CGSDB-X4533	CGSDB-X4533	CGSDB-X4534	CGSDB-X4535	CGSDB-X4535	CGSDB-X4536	CGSDB-X4537
VORTX Conductor Damper	VSD-4032	VSD-4040	VSD-4040	VSD-4040	VSD-5040	VSD-5040	VSD-5040	VSD-5040
Air Flow Spoiler	5058107	5058107	5058107	5058107	5058107	5058107	5058107	5058107

Transmission: Product Selection Charts

Transmission Line Products for Popular ACSR Conductors								
kcmil	**1431 45/7**	**1431 54/19**	**1510.5 45/7**	**1510.5 54/19**	**1590 45/7**	**1590 54/19**	**1780 84/19**	**2156 84/19**
Code Word	**Bobolink**	**Plover**	**Nuthatch**	**Parrot**	**Lapwing**	**Falcon**	**Chucker**	**Bluebird**
diameter (in.)	**1.427**	**1.465**	**1.466**	**1.506**	**1.504**	**1.545**	**1.602**	**1.762**
PRODUCT								
CUSHION-GRIP Suspension	CGS-1117	CGS-1118	CGS-1118	CGS-1119	CGS-1119	CGS-1119	CGS-1120	CGS-1122
CUSHION-GRIP Support	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARMOR-GRIP Suspension	AGS-5142	AGS-5143	AGS-5143	AGS-5144	AGS-5144	AGS-5145	AGS-5147	AGS-5152
ARMOR-GRIP Susp, EHV	AGS-5521	AGS-5522	AGS-5522	AGS-5523	AGS-5523	AGS-5524	AGS-5526	AGS-5531
ARMOR-GRIP Support	AGS-5242	AGS-5243	AGS-5243	AGS-5244	AGS-5244	AGS-5245	AGS-5247	AGS-5252
ARMOR Rod	AR-0147	AR-0163	AR-0163	AR-0163	AR-0163	AR-0164	AR-0165	AR-0167
ARMOR Rod, EHV	AR-0510	AR-0511	AR-0511	AR-0511	AR-0511	AR-0512	AR-0513	AR-0516
Conductor Splice	LS-0157	LS-0157	LS-0157	LS-0158	LS-0158	LS-0159	LS-0160	LSMS10726
Full Tension Splice	N/A	N/A	N/A	N/A	FTSMS2537	FTSMS4492	FTSMS7920	N/A
Helical Rod Spacer	SUMS-5285	SUMS-5285	SUMS-5285	SUMS-4397	SUMS-4397	SUMS-4397	SUMS-5056	SUMS-4656
Spacer Damper (Type "C")	CGSDC-X4537	CGSDC-X4538	CGSDC-X4538	CGSDC-X4539	CGSDC-X4539	CGSDC-X4540	CGSDC-X4541	CGSDC-X4545
Spacer Damper (Type "B")	CGSDB-X4537	CGSDB-X4538	CGSDB-X4538	CGSDB-X4539	CGSDB-X4539	CGSDB-X4540	CGSDB-X4541	CGSDB-X4545
VORTX Conductor Damper	VSD-5040	VSD-5040	VSD-5040	VSD-5040	VSD-5040	VSD-5040	VSD-5050	VSD-5050
Air Flow Spoiler	5058107	5058107	5058107	5058108	5058108	5058108	5058108	5085108

kcmil	**2167 72/7**	**2312 76/19**						
Code Word	**Kiwi**	**Thrasher**						
diameter (in.)	**1.737**	**1.802**						
PRODUCT								
CUSHION-GRIP Suspension	CGS-1122	CGS-1123						
CUSHION-GRIP Support	N/A	N/A						
ARMOR-GRIP Suspension	AGS-5151	AGS-5153						
ARMOR-GRIP Susp, EHV	AGS-5530	AGS-5532						
ARMOR-GRIP Support	AGS-5251	AGS-5253						
ARMOR Rod	AR-0167	AR-0167						
ARMOR Rod, EHV	AR-0516	AR-0516						
Conductor Splice	N/A	N/A						
Full Tension Splice	N/A	N/A						
Helical Rod Spacer	SUMS-4656	SUMS-3807						
Spacer Damper (Type "C")	CGSDC-X4545	N/A						
Spacer Damper (Type "B")	CGSDC-X4545	N/A						
VORTX Conductor Damper	VSD-5050	VSD-5050						
Air Flow Spoiler	5058108	N/A						

Transmission: Product Selection Charts

Transmission Line Products for Popular ACSS/AW Conductors								
kcmil		**336.4 26/7**	**397.5 18/1**	**397.5 26/7**	**477 18/1**	**477 26/7**	**477 30/7**	**556.5 26/7**
Code Word		**Linnet**	**Chickadee**	**Ibis**	**Pelican**	**Hawk**	**Hen**	**Dove**
diameter (in)		**0.720**	**0.743**	**0.783**	**0.814**	**0.858**	**0.883**	**0.927**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-1102HT	CGS-1102HT	CGS-1103HT	CGS-1104HT	CGS-1105HT	CGS-1105HT	CGS-1106HT
ARMOR-GRIP Suspension	200C	AGS-5112	AGS-5113	AGS-5115	AGS-5116	AGS-5118	AGS-5119	AGS-5122
ARMOR-GRIP Susp, EHV	200C	N/A	N/A	N/A	N/A	N/A	N/A	AGS-5501
ARMOR-GRIP Support	200C	AGS-5212	AGS-5213	AGS-5215	AGS-5216	AGS-5218	AGS-5219	AGS-5222
THERMOLIGN Suspension	250C	N/A	N/A	N/A	TLS-0100	TLS-0101	TLS-0101	TLS-0103
THERMOLIGN Susp, EHV	250C	N/A	N/A	N/A	TLS0100EHV	TLS0101EHV	TLS0101EHV	TLS0103EHV
ARMOR Rod	250C	AR-0130	AR-0131	AR-0132	AR-0132	AR-0134	AR-0134	AR-0135
THERMOLIGN Dead-End	250C	TLDE-0100	TLDE-0101	TLDE-0102	TLDE-0103	TLDE-0104	TLDE-0105	TLDE-0107
THERMOLIGN Splice	250C	TLSP-0100	TLSP-0101	TLSP-0102	TLSP-0103	TLSP-0104	TLSP-0105	TLSP-0107
VORTX Conductor Damper	250C	VSD-2032	VSD-2532	VSD-2532	VSD-2532	VSD-3532	VSD-3532	VSD-3540
Protector Rods	250C	PR-0146	PR-0148	PR-0148	PR-0148	PR-0150	PR-0150	PR-0151
kcmil		**556.5 30/7**	**605 26/7**	**636 26/7**	**666.6 26/7**	**715.5 26/7**	**795 36/1**	**795 45/7**
Code Word		**Eagle**	**Squab**	**Grosbeak**	**Gannet**	**Starling**	**Coot**	**Tern**
diameter (in)		**0.953**	**0.966**	**0.990**	**1.014**	**1.051**	**1.040**	**1.063**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-1107HT	CGS-1107HT	CGS-1108HT	CGS-1108HT	CGS-1109HT	CGS-1109HT	CGS-1109HT
ARMOR-GRIP Suspension	200C	AGS-5123	AGS-5124	AGS-5125	AGS-5128	AGS-5128	AGS-5127	AGS-5128
ARMOR-GRIP Susp, EHV	200C	AGS-5502	AGS-5503	AGS-5504	AGS-5505	AGS-5507	AGS-5506	AGS-5507
ARMOR-GRIP Support	200C	AGS-5223	AGS-5224	AGS-5225	AGS-5228	AGS-5228	AGS-5227	AGS-5228
THERMOLIGN Suspension	250C	TLS-0104	TLS-0104	TLS-0105	TLS-0105	TLS-0106	TLS-0106	TLS-0107
THERMOLIGN Susp, EHV	250C	TLS0104EHV	TLS0104EHV	TLS0105EHV	TLS0105EHV	TLS0106EHV	TLS0106EHV	TLS0107EHV
ARMOR Rod	250C	AR-0136	AR-0136	AR-0137	AR-0139	AR-0139	AR-0139	AR-0139
ARMOR Rod, EHV	250C	N/A	N/A	AR-0500	AR-0500	AR-0502	AR-0502	AR-0502
THERMOLIGN Dead-End	250C	TLDE-0108	TLDE-0109	TLDE-0110	TLDE-0111	TLDE-0112	TLDE-0112	TLDE-0112
THERMOLIGN Splice	250C	TLSP-0108	TLSP-0109	TLSP-0110	TLSP-0111	TLSP-0112	TLSP-0112	TLSP-0112
VORTX Conductor Damper	250C	VSD-3540	VSD-3540	VSD-4040	VSD-4040	VSD-4040	VSD-4040	VSD-4040
Protector Rods	250C	PR-0151	PR-0152	PR-0152	PR-0152	PR-0154	PR-0154	PR-0154

Transmission: Product Selection Charts

Transmission Line Products for Popular ACSS/AW Conductors								
kcmil		795 54/7	795 26/7	954 45/7	954 54/7	1033.5 45/7	1033.5 54/7	1113 45/7
Code Word		Condor	Drake	Rail	Cardinal	Ortolan	Curlew	Bluejay
diameter (in)		1.093	1.108	1.165	1.196	1.212	1.244	1.259
PRODUCT	Max Temp							
CUSHION-GRIP Susp – HT	200C	CGS-1110HT	CGS-1110HT	CGS-1112HT	CGS-1112HT	CGS-1113HT	CGS-1114HT	CGS-1114HT
ARMOR-GRIP Suspension	200C	AGS-5130	AGS-5131	AGS-5133	AGS-5134	AGS-5135	AGS-5136	AGS-5136
ARMOR-GRIP Susp, EHV	200C	AGS-5509	AGS-5509	AGS-5512	AGS-5513	AGS-5514	AGS-5515	AGS-5515
ARMOR-GRIP Support	200C	AGS-5230	AGS-5231	AGS-5233	AGS-5234	AGS-5235	AGS-5236	AGS-5236
THERMOLIGN Suspension	250C	TLS-0108	TLS-0108	TLS-0110	TLS-0111	TLS-0112	TLS-0112	TLS-0112
THERMOLIGN Susp, EHV	250C	TLS0108EHV	TLS0108EHV	TLS0110EHV	TLS0111EHV	TLS0112EHV	TLS0112EHV	TLS0112EHV
ARMOR Rod	250C	AR-0140	AR-0141	AR-0143	AR-0143	AR-0144	AR-0144	AR-0144
ARMOR Rod, EHV	250C	AR-0503	AR-0504	AR-0506	AR-0506	AR-0507	AR-0507	AR-0507
THERMOLIGN Dead-End	250C	TLDE-0113	TLDE-0114	TLDE-0115	TLDE-0116	TLDE-0116	TLDE-0117	TLDE-0117
THERMOLIGN Splice	250C	TLSP-0113	TLSP-0114	TLSP-0115	TLSP-0116	TLSP-0116	TLSP-0117	TLSP-0117
VORTX Conductor Damper	250C	VSD-4040	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050
Protector Rods	250C	PR-0155	PR-0156	PR-0156	PR-0158	PR-0158	PR-0158	PR-0158
kcmil		1113 54/19	1192.5 45/7	1192.5 54/19	1272 45/7	1272 54/19	1351.5 45/7	1351.5 54/19
Code Word		Finch	Bunting	Grackle	Bittern	Pheasant	Dipper	Martin
diameter (in)		1.293	1.302	1.333	1.345	1.382	1.386	1.424
PRODUCT	Max Temp							
CUSHION-GRIP Susp – HT	200C	CGS-1114HT	CGS-1115HT	CGS-1115HT	CGS-1115HT	CGS-1116HT	CGS-1116HT	CGS-1117HT
ARMOR-GRIP Suspension	200C	AGS-5138	AGS-5138	AGS-5139	AGS-5139	AGS-5140	AGS-5140	AGS-5142
ARMOR-GRIP Susp, EHV	200C	AGS-5517	AGS-5517	AGS-5518	AGS-5518	AGS-5519	AGS-5519	AGS-5521
ARMOR-GRIP Support	200C	AGS-5238	AGS-5238	AGS-5239	AGS-5239	AGS-5240	AGS-5240	AGS-5242
THERMOLIGN Suspension	250C	TLS-0113	TLS-0113	TLS-0114	TLS-0115	TLS-0116	TLS-0116	TLS-0117
THERMOLIGN Susp, EHV	250C	TLS0113EHV	TLS0113EHV	TLS0114EHV	TLS0115EHV	TLS0116EHV	TLS0116EHV	TLS0117EHV
ARMOR Rod	250C	AR-0145	AR-0145	AR-0146	AR-0146	AR-0146	AR-0146	AR-0147
ARMOR Rod, EHV	250C	AR-0508	AR-0508	AR-0509	AR-0509	AR-0509	AR-0509	AR-0510
THERMOLIGN Dead-End	250C	TLDE-0118	TLDE-0118	TLDE-0119	TLDE-0119	TLDE-0120	TLDE-0120	TLDE-0121
THERMOLIGN Splice	250C	TLSP-0118	TLSP-0118	TLSP-0119	TLSP-0119	TLSP-0120	TLSP-0120	TLSP-0121
VORTX Conductor Damper	250C	VSD-4050	VSD-4050	VSD-4050	VSD-5050	VSD-5050	VSD-5050	VSD-5050
Protector Rods	250C	PR-0158	PR-0160	PR-0160	PR-0160	PR-0160	PR-0160	PR-0162

Transmission: Product Selection Charts

Transmission Line Products for Popular ACSS/AW Conductors								
kcmil		1431 45/7	1431 54/19	1510.5 45/7	1510.5 54/19	1590 45/7	1590 54/19	1780 84/19
Code Word		Bobolink	Plover	Nuthatch	Parrot	Lapwing	Falcon	Chucker
diameter (in)		1.427	1.465	1.466	1.506	1.504	1.545	1.602
PRODUCT	Max Temp							
CUSHION-GRIP Susp – HT	200C	CGS-1117HT	CGS-1118HT	CGS-1118HT	CGS-1119HT	CGS-1119HT	CGS-1119HT	CGS-1120HT
ARMOR-GRIP Suspension	200C	AGS-5142	AGS-5143	AGS-5143	AGS-5144	AGS-5144	AGS-5145	AGS-5147
ARMOR-GRIP Susp, EHV	200C	AGS-5521	AGS-5522	AGS-5522	AGS-5523	AGS-5523	AGS-5524	AGS-5526
ARMOR-GRIP Support	200C	AGS-5242	AGS-5243	AGS-5243	AGS-5244	AGS-5244	AGS-5245	AGS-5247
THERMOLIGN Suspension	250C	TLS-0117	TLS-0118	TLS-0118	TLS-0119	TLS-0119	TLS-0120	N/A
THERMOLIGN Susp, EHV	250C	TLS0117EHV	TLS0118EHV	TLS0118EHV	TLS0119EHV	TLS0119EHV	TLS0120EHV	N/A
ARMOR Rod	250C	AR-0147	AR-0163	AR-0163	AR-0163	AR-0163	AR-0164	AR-0165
ARMOR Rod, EHV	250C	AR-0510	AR-0511	AR-0511	AR-0511	AR-0511	AR-0512	AR-0513
THERMOLIGN Dead-End	250C	TLDE-0121	TLDE-0122	TLDE-0122	TLDE-0123	TLDE-0123	TLDE-0124	N/A
THERMOLIGN Splice	250C	TLSP-0121	TLSP-0122	TLSP-0122	TLSP-0123	TLSP-0123	TLSP-0124	N/A
VORTX Conductor Damper	250C	VSD-5050	VSD-5050	VSD-5050	VSD-5061	VSD-5061	VSD-5061	VSD-5061
Protector Rods	250C	PR-0162	PR-0162	PR-0162	PR-0162	PR-0162	PR-0163	PR-0163
kcmil		2156 84/19	2167 72/7	2312 76/19				
Code Word		Bluebird	Kiwi	Thrasher				
diameter (in)		1.762	1.737	1.802				
PRODUCT	Max Temp							
CUSHION-GRIP Susp – HT	200C	CGS-1122HT	CGS-1122HT	CGS-1123HT				
ARMOR-GRIP Suspension	200C	AGS-5152	AGS-5151	AGS-5153				
ARMOR-GRIP Susp, EHV	200C	AGS-5531	AGS-5530	AGS-5532				
ARMOR-GRIP Support	200C	AGS-5252	AGS-5251	AGS-5253				
THERMOLIGN Suspension	250C	N/A	N/A	N/A				
THERMOLIGN Susp, EHV	250C	N/A	N/A	N/A				
ARMOR Rod	250C	AR-0167	AR-0167	AR-0167				
ARMOR Rod, EHV	250C	AR-0516	AR-0516	AR-0516				
THERMOLIGN Dead-End	250C	N/A	N/A	N/A				
THERMOLIGN Splice	250C	N/A	N/A	N/A				
VORTX Conductor Damper	250C	VSD-5061	VSD-5061	N/A				
Protector Rods	250C	PR-0164	PR-0164	N/A				

Transmission: Product Selection Charts

Transmission Line Products for Popular ACSS/TW Conductors								
kcmil		**336.4 18/7**	**477 18/7**	**477 18/7**	**477 18/7**	**556.5 18/7**	**571.7 18/7**	**556.5 20/7**
Code Word		**Oriole**	**Flicker**	**Hawk**	**Hen**	**Parakeet**	**Mohawk**	**Dove**
diameter (in)		**0.693**	**0.776**	**0.789**	**0.825**	**0.835**	**0.846**	**0.852**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-1101HT	CGS-1103HT	CGS-1103HT	CGS-1104HT	CGS-1104HT	CGS-1105HT	CGS-1105HT
ARMOR-GRIP Suspension	200C	AGS-5111	AGS-5115	AGS-5115	AGS-5117	AGS-5117	AGS-5118	AGS-5118
ARMOR-GRIP Support	200C	AGS-5211	AGS-5215	AGS-5215	AGS-5217	AGS-5217	AGS-5218	AGS-5218
THERMOLIGN Suspension	250C	N/A	N/A	N/A	TLS-0100	TLS-0100	TLS-0100	TLS-0100
THERMOLIGN Susp, EHV	250C	N/A	N/A	N/A	TLS0100EHV	TLS0100EHV	TLS0100EHV	TLS0100EHV
ARMOR Rod	250C	AR-0129	AR-0131	AR-0132	AR-0133	AR-0133	AR-0134	AR-0134
VORTX Conductor Damper	250C	VSD-2032	VSD-2532	VSD-2532	VSD-2532	VSD-2532	VSD-2532	VSD-2532
Protector Rods	250C	PR-0146	PR-0148	PR-0148	PR-0150	PR-0150	PR-0150	PR-0150
kcmil		**565.3 18/7**	**636 19/7**	**636 20/7**	**664.8 20/7**	**636 18/7**	**795 17/7**	**768.2 20/7**
Code Word		**Calumet**	**Rook**	**Grosbeak**	**Oswego**	**Scoter**	**Tern**	**Maumee**
diameter (in)		**0.858**	**0.890**	**0.908**	**0.927**	**0.953**	**0.960**	**0.977**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-1105HT	CGS-1106HT	CGS-1106HT	CGS-1106HT	CGS-1107HT	CGS-1107HT	CGS-1107HT
ARMOR-GRIP Suspension	200C	AGS-5118	AGS-5119	AGS-5121	AGS-5122	AGS-5123	AGS-5123	AGS-5124
ARMOR-GRIP Susp, EHV	200C	N/A	N/A	AGS-5500	AGS-5501	AGS-5502	AGS-5502	AGS-5503
ARMOR-GRIP Support	200C	AGS-5218	AGS-5219	AGS-5221	AGS-5222	AGS-5223	AGS-5223	AGS-5224
THERMOLIGN Suspension	250C	TLS-0101	TLS-0101	TLS-0102	TLS-0103	TLS-0104	TLS-0104	TLS-0104
THERMOLIGN Susp, EHV	250C	TLS0101EHV	TLS0101EHV	TLS0102EHV	TLS0103EHV	TLS0104EHV	TLS0104EHV	TLS0104EHV
ARMOR Rod	250C	AR-0134	AR-0134	AR-0135	AR-0135	AR-0136	AR-0136	AR-0137
ARMOR Rod, EHV	250C	N/A	N/A	N/A	N/A	N/A	N/A	AR-0500
VORTX Conductor Damper	250C	VSD-3532	VSD-3532	VSD-3532	VSD-3532	VSD-3540	VSD-3540	VSD-3540
Protector Rods	250C	PR-0150	PR-0150	PR-0151	PR-0151	PR-0151	PR-0152	PR-0152

kcmil		**795 18/7**	**762.8 20/7**	**795 20/7**	**795 20/7**	**954 30/7**	**957.2 32/7**	**954 32/7**
Code Word		**Puffin**	**Wabash**	**Condor**	**Drake**	**Phoenix**	**Kettle**	**Rail**
diameter (in)		**0.980**	**0.990**	**0.993**	**1.010**	**1.044**	**1.060**	**1.061**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-1107HT	CGS-1108HT	CGS-1108HT	CGS-1108HT	CGS-1109HT	CGS-1109HT	CGS-1109HT
ARMOR-GRIP Suspension	200C	AGS-5124	AGS-5125	AGS-5125	AGS-5126	AGS-5128	AGS-5128	AGS-5128
ARMOR-GRIP Susp, EHV	200C	AGS-5503	AGS-5504	AGS-5504	AGS-5505	AGS-5507	AGS-5507	AGS-5507
ARMOR-GRIP Support	200C	AGS-5224	AGS-5225	AGS-5225	AGS-5226	AGS-5228	AGS-5228	AGS-5228
THERMOLIGN Suspension	250C	TLS-0105	TLS-0105	TLS-0105	TLS-0105	TLS-0106	TLS-0106	TLS-0106
THERMOLIGN Susp, EHV	250C	TLS0105EHV	TLS0105EHV	TLS0105EHV	TLS0105EHV	TLS0106EHV	TLS0106EHV	TLS0106EHV
ARMOR Rod	250C	AR-0137	AR-0137	AR-0137	AR-0137	AR-0139	AR-0139	AR-0139
ARMOR Rod, EHV	250C	AR-0500	AR-0500	AR-0500	AR-0500	AR-0502	AR-0502	AR-0502
VORTX Conductor Damper	250C	VSD-3540	VSD-4040	VSD-4040	VSD-4040	VSD-4040	VSD-4040	VSD-4040
Protector Rods	250C	PR-0152	PR-0152	PR-0152	PR-0152	PR-0154	PR-0154	PR-0154
kcmil		**946.7 35/7**	**900 30/7**	**954 20/7**	**1033.5 30/7**	**966.2 21/7**	**1033.5 32/7**	**959.6 22/7**
Code Word		**Fraser**	**Canary**	**Cardinal**	**Snowbird**	**Columbia**	**Ortolan**	**Suwannee**
diameter (in)		**1.077**	**1.080**	**1.084**	**1.089**	**1.092**	**1.102**	**1.108**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-1110HT	CGS-1110HT	CGS-1110HT	CGS-1110HT	CGS-1110HT	CGS-1110HT	CGS-1110HT
ARMOR-GRIP Suspension	200C	AGS-5129	AGS-5129	AGS-5129	AGS-5129	AGS-5130	AGS-5130	AGS-5130
ARMOR-GRIP Susp, EHV	200C	AGS-5508	AGS-5508	AGS-5508	AGS-5508	AGS-5509	AGS-5509	AGS-5509
ARMOR-GRIP Support	200C	AGS-5229	AGS-5229	AGS-5229	AGS-5229	AGS-5230	AGS-5230	AGS-5230
THERMOLIGN Suspension	250C	TLS-0107	TLS-0108	TLS-0108	TLS-0108	TLS-0108	TLS-0108	TLS-0108
THERMOLIGN Susp, EHV	250C	TLS0107EHV	TLS0108EHV	TLS0108EHV	TLS0108EHV	TLS0108EHV	TLS0108EHV	TLS0108EHV
ARMOR Rod	250C	AR-0140	AR-0140	AR-0140	AR-0140	AR-0140	AR-0141	AR-0141
ARMOR Rod, EHV	250C	AR-0503	AR-0503	AR-0503	AR-0503	AR-0503	AR-0504	AR-0504
VORTX Conductor Damper	250C	VSD-4040	VSD-4040	VSD-4040	VSD-4040	VSD-4040	VSD-4050	VSD-4050
Protector Rods	250C	PR-0155	PR-0155	PR-0155	PR-0155	PR-0155	PR-0156	PR-0156

Transmission: Product Selection Charts

Transmission Line Products for Popular ACSS/TW Conductors								
kcmil		**1033.5 22/7**	**1080 20/7**	**1113 33/7**	**1168.1 30/7**	**1158 33/7**	**1192.5 30/7**	**1192.5 33/7**
Code Word		**Curlew**	********	**Bluejay**	**Cheyenne**	**Genessee**	**Oxbird**	**Bunting**
diameter (in)		**1.129**	**1.131**	**1.143**	**1.155**	**1.165**	**1.167**	**1.181**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-1111HT	CGS-1111HT	CGS-1111HT	CGS-1111HT	CGS-1112HT	CGS-1112HT	CGS-1112HT
ARMOR-GRIP Suspension	200C	AGS-5131	AGS-5131	AGS-5132	AGS-5133	AGS-5133	AGS-5133	AGS-5134
ARMOR-GRIP Susp, EHV	200C	AGS-05510	AGS-05510	AGS-05511	AGS-05512	AGS-05512	AGS-05512	AGS-05513
ARMOR-GRIP Support	200C	AGS-5231	AGS-5231	AGS-5232	AGS-5233	AGS-5233	AGS-5233	AGS-5234
THERMOLIGN Suspension	250C	TLS-0109	TLS-0109	TLS-0109	TLS-0110	TLS-0110	TLS-0110	TLS-0110
THERMOLIGN Susp, EHV	250C	TLS0109EHV	TLS0109EHV	TLS0109EHV	TLS0110EHV	TLS0110EHV	TLS0110EHV	TLS0110EHV
ARMOR Rod	250C	AR-0141	AR-0141	AR-0142	AR-0142	AR-0143	AR-0143	AR-0143
ARMOR Rod, EHV	250C	AR-0504	AR-0504	AR-0505	AR-0505	AR-0506	AR-0506	AR-0506
VORTX Conductor Damper	250C	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050
Protector Rods	250C	PR-0156	PR-0156	PR-0156	PR-0156	PR-0156	PR-0156	PR-0156
kcmil		**1113 38/19**	**1272 30/7**	**1257.1 35/7**	**1272 35/7**	**1192.5 38/19**	**1233.6 38/19**	**1372.5 30/7**
Code Word		**Finch**	**Scissortail**	**Nelson**	**Bittern**	**Grackle**	**Yukon**	**Truckee**
diameter (in)		**1.185**	**1.203**	**1.213**	**1.220**	**1.225**	**1.245**	**1.248**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-1112HT	CGS-1113HT	CGS-1113HT	CGS-1113HT	CGS-1113HT	CGS-1114HT	CGS-1114HT
ARMOR-GRIP Suspension	200C	AGS-5134	AGS-5134	AGS-5135	AGS-5135	AGS-5135	AGS-5136	AGS-5136
ARMOR-GRIP Susp, EHV	200C	AGS-05513	AGS-05513	AGS-05514	AGS-05514	AGS-05514	AGS-05515	AGS-05515
ARMOR-GRIP Support	200C	AGS-5234	AGS-5234	AGS-5235	AGS-5235	AGS-5235	AGS-5236	AGS-5236
THERMOLIGN Suspension	250C	TLS-0110	TLS-0111	TLS-0112	TLS-0112	TLS-0112	TLS-0112	TLS-0112
THERMOLIGN Susp, EHV	250C	TLS0110EHV	TLS0111EHV	TLS0112EHV	TLS0112EHV	TLS0112EHV	TLS0112EHV	TLS0112EHV
ARMOR Rod	250C	AR-0143	AR-0143	AR-0144	AR-0144	AR-0144	AR-0144	AR-0144
ARMOR Rod, EHV	250C	AR-0506	AR-0506	AR-0507	AR-0507	AR-0507	AR-0507	AR-0507
VORTX Conductor Damper	250C	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050
Protector Rods	250C	PR-0158	PR-0158	PR-0158	PR-0158	PR-0158	PR-0158	PR-0158

kcmil		**1351.5 35/7**	**1359.7 36/7**	**1272 39/19**	**1334.6 39/19**	**1431 36/7**	**1467.8 33/7**	**1351.5 39/19**
Code Word		**Dipper**	**Mackenzie**	**Pheasant**	**Thames**	**Bobolink**	**St Croix**	**Martin**
diameter (in)		**1.256**	**1.259**	**1.264**	**1.290**	**1.291**	**1.292**	**1.300**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-0114HT	CGS-0114HT	CGS-0114HT	CGS-0114HT	CGS-0114HT	CGS-0114HT	CGS-0115HT
ARMOR-GRIP Suspension	200C	AGS-5136	AGS-5136	AGS-5137	AGS-5138	AGS-5138	AGS-5138	AGS-5138
ARMOR-GRIP Susp, EHV	200C	AGS-5515	AGS-5515	AGS-5516	AGS-5517	AGS-5517	AGS-5517	AGS-5517
ARMOR-GRIP Support	200C	AGS-5236	AGS-5236	AGS-5237	AGS-5238	AGS-5238	AGS-5238	AGS-5238
THERMOLIGN Suspension	250C	TLS-0112	TLS-0112	TLS-0113	TLS-0113	TLS-0113	TLS-0113	TLS-0113
THERMOLIGN Susp, EHV	250C	TLS0112EHV	TLS0112EHV	TLS0113EHV	TLS0113EHV	TLS0113EHV	TLS0113EHV	TLS0113EHV
ARMOR Rod	250C	AR-0144	AR-0144	AR-0144	AR-0145	AR-0145	AR-0145	AR-0145
ARMOR Rod, EHV	250C	AR-0507	AR-0507	AR-0507	AR-0508	AR-0508	AR-0508	AR-0508
VORTX Conductor Damper	250C	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050	VSD-4050
Protector Rods	250C	PR-0158	PR-0158	PR-0158	PR-0158	PR-0158	PR-0158	PR-0160
kcmil		**1455.3 36/7**	**1569 33/7**	**1431 37/19**	**1433.6 39/19**	**1577.4 36/7**	**1590 36/7**	**1533.3 39/19**
Code Word		**Miramichi**	**Platte**	**Plover**	**Merrimack**	**Potomac**	**Lapwing**	**Rio Grande**
diameter (in)		**1.302**	**1.334**	**1.337**	**1.340**	**1.345**	**1.358**	**1.382**
PRODUCT	**Max Temp**							
CUSHION-GRIP Susp – HT	200C	CGS-0115HT	CGS-0115HT	CGS-0115HT	CGS-0115HT	CGS-0115HT	CGS-0116HT	CGS-0116HT
ARMOR-GRIP Suspension	200C	AGS-5138	AGS-5139	AGS-5139	AGS-5139	AGS-5139	AGS-5140	AGS-5140
ARMOR-GRIP Susp, EHV	200C	AGS-5517	AGS-5518	AGS-5518	AGS-5518	AGS-5518	AGS-5519	AGS-5519
ARMOR-GRIP Support	200C	AGS-5238	AGS-5239	AGS-5239	AGS-5239	AGS-5239	AGS-5240	AGS-5240
THERMOLIGN Suspension	250C	TLS-0113	TLS-0114	TLS-0114	TLS-0115	TLS-0115	TLS-0115	TLS-0116
THERMOLIGN Susp, EHV	250C	TLS0113EHV	TLS0114EHV	TLS0114EHV	TLS0115EHV	TLS0115EHV	TLS0115EHV	TLS0116EHV
ARMOR Rod	250C	AR-0145	AR-0146	AR-0146	AR-0146	AR-0146	AR-0146	AR-0146
ARMOR Rod, EHV	250C	AR-0508	AR-0509	AR-0509	AR-0509	AR-0509	AR-0509	AR-0509
VORTX Conductor Damper	250C	VSD-4050	VSD-4050	VSD-5050	VSD-5050	VSD-5050	VSD-5050	VSD-5050
Protector Rods	250C	PR-0160	PR-0160	PR-0160	PR-0160	PR-0160	PR-0160	PR-0160

Transmission: Product Selection Charts

Transmission Line Products for Popular ACSS/TW Conductors								
kcmil		1657.4 36/7	1590 42/19	1622 39/19	1758.6 37/7	1730 37/19	1730 34/19	1949.6 42/7
Code Word		Schuylkil	Falcon	Pecos	Pee Dee	Chukar	James	Athabaska
diameter (in)		1.386	1.408	1.424	1.427	1.445	1.470	1.504
PRODUCT	Max Temp							
CUSHION-GRIP Susp – HT	200C	CGS-1116HT	CGS-1117HT	CGS-1117HT	CGS-1117HT	CGS-1117HT	CGS-1118HT	CGS-1119HT
ARMOR-GRIP Suspension	200C	AGS-5140	AGS-5141	AGS-5142	AGS-5142	AGS-5143	AGS-5143	AGS-5144
ARMOR-GRIP Susp, EHV	200C	AGS-5519	AGS-5520	AGS-5521	AGS-5521	AGS-5522	AGS-5522	AGS-5523
ARMOR-GRIP Support	200C	AGS-5240	AGS-5241	AGS-5242	AGS-5242	AGS-5243	AGS-5243	AGS-5244
THERMOLIGN Suspension	250C	TLS-0116	TLS-0116	TLS-0117	TLS-0117	TLS-0117	TLS-0118	TLS-0119
THERMOLIGN Susp, EHV	250C	TLS0116EHV	TLS0116EHV	TLS0117EHV	TLS0117EHV	TLS0117EHV	TLS0118EHV	TLS0119EHV
ARMOR Rod	250C	AR-0146	AR-0147	AR-0147	AR-0147	AR-0163	AR-0163	AR-0163
ARMOR Rod, EHV	250C	AR-0509	AR-0510	AR-0510	AR-0510	AR-0511	AR-0511	AR-0511
VORTX Conductor Damper	250C	VSD-5050	VSD-5050	VSD-5050	VSD-5050	VSD-5050	VSD-5050	VSD-5061
Protector Rods	250C	PR-0160	PR-0160	PR-0162	PR-0162	PR-0162	PR-0162	PR-0162
kcmil		1926.9 42/19	2153.8 64/19	2156 64/19	2627.3 64/19			
Code Word		Cumberland	Powder	Bluebird	Santee			
diameter (in)		1.545	1.602	1.608	1.762			
PRODUCT	Max Temp							
CUSHION-GRIP Susp – HT	200C	CGS-1119HT	CGS-1120HT	CGS-1120HT	CGS-1122HT			
ARMOR-GRIP Suspension	200C	AGS-5145	AGS-5147	AGS-5147	AGS-5152			
ARMOR-GRIP Susp, EHV	200C	AGS-5524	AGS-5526	AGS-5526	AGS-5531			
ARMOR-GRIP Support	200C	AGS-5245	AGS-5247	AGS-5247	AGS-5252			
THERMOLIGN Suspension	250C	TLS-0120	N/A	N/A	N/A			
THERMOLIGN Susp, EHV	250C	TLS0120EHV	N/A	N/A	N/A			
ARMOR Rod	250C	AR-0164	AR-0165	AR-0165	AR-0167			
ARMOR Rod, EHV	250C	AR-0512	AR-0513	AR-0513	AR-0516			
VORTX Conductor Damper	250C	VSD-5061	VSD-5061	VSD-5061	VSD-5061			
Protector Rods	250C	PR-0162	PR-0163	PR-0163	PR-0164			

Transmission: Product Selection Charts

Transmission Line Products for Popular All Aluminum (AAC) Conductors								
kcmil	**4/0 7str**	**266.8 7str**	**266.8 19str**	**336.4 19str**	**350 19str**	**397.5 19str**	**450 19str**	**477 19str**
Code Word	**Oxlip**	**Daisy**	**Laurel**	**Tulip**	**Daffodil**	**Canna**	**Goldentuft**	**Cosmos**
diameter (in.)	**0.522**	**0.586**	**0.593**	**0.666**	**0.679**	**0.724**	**0.770**	**0.793**
Product								
CUSHION-GRIP Suspension	N/A	N/A	N/A	CGS-1101	CGS-1101	CGS-1102	CGS-1103	CGS-1103
CUSHION-GRIP Support	CGS-2100	CGS-2101	CGS-2101	CGS-2101	CGS-2101	CGS-2101	CGS-2101	CGS-2101
ARMOR-GRIP Suspension	AGS-5101	AGS-5105	AGS-5105	AGS-5109	AGS-5110	AGS-5112	AGS-5115	AGS-5115
ARMOR-GRIP Support	AGS-5201	AGS-5205	AGS-5205	AGS-5209	AGS-5210	AGS-5212	AGS-5215	AGS-5215
ARMOR Rod	AR-0123	AR-0125	AR-0125	AR-0128	AR-0128	AR-0130	AR-0131	AR-0132
Conductor Splice	LS-0133	LS-0135	LS-0135	LS-0138	LS-0139	LS-0140	LS-0142	LS-0143
Helical Rod Spacer	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Spacer Damper (Type "C")	N/A	N/A	N/A	N/A	CGSDC-X4518	CGSDC-X4519	CGSDC-X4520	CGSDC-X4521
Spacer Damper (Type "B")	N/A	N/A	N/A	N/A	CGSDB-X4518	CGSDB-X4519	CGSDB-X4520	CGSDB-X4521
VORTX Conductor Damper	VSD-2016	VSD-2016	VSD-2016	VSD-2020	VSD-2020	VSD-2520	VSD-2520	VSD-2525
Spiral Vibration Damper	5050105	5050106	5050106	5050106	5050106	5050106	N/A	N/A
Air Flow Spoiler	5058102	5058103	5058103	5058103	5058103	5058103	5058104	5085104
kcmil	**477 37str**	**556.5 19str**	**556.5 37str**	**600 37str**	**636 37str**	**650 37str**	**700 37str**	**715.5 37str**
Code Word	**Syringa**	**Dahlia**	**Mistletoe**	**Meadowsw**	**Orchid**	**Heuchera**	**Verbena**	**Violet**
diameter (in.)	**0.795**	**0.856**	**0.858**	**0.891**	**0.918**	**0.928**	**0.963**	**0.974**
Product								
CUSHION-GRIP Suspension	CGS-1103	CGS-1105	CGS-1105	CGS-1106	CGS-1106	CGS-1106	CGS-1107	CGS-1107
CUSHION-GRIP Support	CGS-2101	CGS-2101	CGS-2101	CGS-2102	CGS-2102	CGS-2102	CGS-2102	CGS-2102
ARMOR-GRIP Suspension	AGS-5115	AGS-5118	AGS-5118	AGS-5119	AGS-5121	AGS-5122	AGS-5124	AGS-5124
ARMOR-GRIP Susp, EHV	N/A	N/A	N/A	N/A	AGS-5500	AGS-5501	AGS-5503	AGS-5503
ARMOR-GRIP Support	AGS-5215	AGS-5218	AGS-5218	AGS-5219	AGS-5221	AGS-5222	AGS-5224	AGS-5224
ARMOR Rod	AR-0132	AR-0134	AR-0134	AR-0134	AR-0135	AR-0135	AR-0136	AR-0136
Conductor Splice	LS-0143	LS-0145	LS-0145	LS-0146	LS-0146	LS-0146	LS-0147	LS-0148
Helical Rod Spacer	N/A	SUMS-3352	SUMS-3352	SUMS-7425	SUMS-3540	SUMS-3540	SUMS-5423	SUMS-5423
Spacer Damper (Type "C")	CGSDC-X4521	CGSDC-X4522	CGSDC-X4522	CGSDC-X4523	CGSDC-X4524	CGSDC-X4524	CGSDC-X4525	CGSDC-X4525
Spacer Damper (Type "B")	CGSDB-X4521	CGSDB-X4522	CGSDB-X4522	CGSDB-X4523	CGSDB-X4524	CGSDB-X4524	CGSDB-X4525	CGSDB-X4525
VORTX Conductor Damper	VSD-2525	VSD-2525	VSD-3525	VSD-3525	VSD-3525	VSD-3525	VSD-3525	VSD-3525
Air Flow Spoiler	5058104	5058104	5058104	5058104	5058104	5058105	5058105	5058105

Transmission: Product Selection Charts

Transmission Line Products for Popular All Aluminum (AAC) Conductors								
kcmil	750 37str	750 61str	795 37str	795 61str	954 37str	954 61str	1033.5 37str	1033.5 61str
Code Word	Petunia	Cattail	Arbutus	Lilac	Magnolia	Goldenrod	Bluebell	Larkspur
diameter (in.)	0.997	0.998	1.026	1.028	1.124	1.126	1.170	1.172
PRODUCT								
CUSHION-GRIP Suspension	CGS-1108	CGS-1108	CGS-1108	CGS-1109	CGS-1111	CGS-1111	CGS-1112	CGS-1112
CUSHION-GRIP Support	CGS-2102	CGS-2102	CGS-2102	CGS-2102	CGS-2102	CGS-2102	CGS-2102	CGS-2102
ARMOR-GRIP Suspension	AGS-5125	AGS-5125	AGS-5127	AGS-5127	AGS-5131	AGS-5131	AGS-5133	AGS-5133
ARMOR-GRIP Susp, EHV	AGS-5504	AGS-5504	AGS-5506	AGS-5506	AGS-5510	AGS-5510	AGS-5512	AGS-5512
ARMOR-GRIP Support	AGS-5225	AGS-5225	AGS-5227	AGS-5227	AGS-5231	AGS-5231	AGS-5233	AGS-5233
ARMOR Rod	AR-0137	AR-0137	AR-0138	AR-0138	AR-0141	AR-0141	AR-0143	AR-0143
ARMOR Rod, EHV	AR-0500	AR-0500	AR-0501	AR-0501	AR-0504	AR-0504	AR-0506	AR-0506
Conductor Splice	LS-0148	LS-0148	LS-0149	LS-0149	LS-0151	LS-0151	LS-0152	LS-0152
Helical Rod Spacer	SUMS-7426	SUMS-7426	SUMS-7426	SUMS-7426	SUMS-1245	SUMS-1245	SUMS-3850	SUMS-3850
Spacer Damper (Type “C”)	CGSDC-X4526	CGSDC-X4526	CGSDC-X4526	CGSDC-X4526	CGSDC-X4529	CGSDC-X4529	CGSDC-X4530	CGSDC-X4530
Spacer Damper (Type “B”)	CGSDB-X4526	CGSDB-X4526	CGSDB-X4526	CGSDB-X4526	CGSDB-X4529	CGSDB-X4529	CGSDB-X4530	CGSDB-X4530
VORTX Conductor Damper	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032
Air Flow Spoiler	5058105	5058105	5058106	5058106	5058106	5058106	5058107	5085107
kcmil	1113 61str	1192.5 61str	1272 61str	1351.5 61str	1431 61str	1510.5 61str	1590 61str	1750 61str
Code Word	Marigold	Hawthorn	Narcissus	Columbine	Carnation	Gladiolus	Coreopsis	Jessamine
diameter (in.)	1.216	1.258	1.300	1.340	1.379	1.417	1.454	1.525
PRODUCT								
CUSHION-GRIP Suspension	CGS-1113	CGS-1114	CGS-1115	CGS-1115	CGS-1116	CGS-1117	CGS-1118	CGS-1119
CUSHION-GRIP Support	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ARMOR-GRIP Suspension	AGS-5135	AGS-5136	AGS-5138	AGS-5139	AGS-5140	AGS-5142	AGS-5143	AGS-5145
ARMOR-GRIP Susp, EHV	AGS-05514	AGS-05515	AGS-05517	AGS-05518	AGS-05519	AGS-05521	AGS-05522	AGS-05524
ARMOR-GRIP Support	AGS-5235	AGS-5236	AGS-5238	AGS-5239	AGS-5240	AGS-5242	AGS-5243	AGS-5245
ARMOR Rod	AR-0144	AR-0144	AR-0145	AR-0146	AR-0146	AR-0147	AR-0163	AR-0164
ARMOR Rod, EHV	AR-0507	AR-0507	AR-0508	AR-0509	AR-0509	AR-0510	AR-0511	AR-0512
Conductor Splice	LS-0153	LS-0154	LS-0155	LS-0155	LS-0156	LS-0157	LS-0157	LS-0158
Helical Rod Spacer	SUMS-6070	SUMS-5276	SUMS-5276	SUMS-5519	SUMS-7228	SUMS-7228	SUMS-5285	SUMS-4397
Spacer Damper (Type “C”)	CGSDC-X4531	CGSDC-X4532	CGSDC-X4533	CGSDC-X4534	CGSDC-X4535	CGSDC-X4536	CGSDC-X4537	CGSDC-X4539
Spacer Damper (Type “B”)	CGSDB-X4531	CGSDB-X4532	CGSDB-X4533	CGSDB-X4534	CGSDB-X4535	CGSDB-X4536	CGSDB-X4537	CGSDC-X4539
VORTX Conductor Damper	VSD-4032	VSD-4032	VSD-4040	VSD-5040	VSD-5040	VSD-5040	VSD-5040	VSD-5040
Air Flow Spoiler	5058107	5058107	5058107	5058107	5058107	5058107	5058107	5058108

Transmission Line Products for Popular Aluminum Alloy Conductors								
kcmil	4/0 7str	266.8 19str	336.4 19str	397.5 19str	477 19str	556.5 19str	636 37str	795 37str
Code Word	Alliance	Butte	Canton	Cairo	Darien	Elgin	Flint	Greeley
diameter (in.)	0.563	0.642	0.721	0.783	0.858	0.927	0.991	1.108
PRODUCT								
CUSHION-GRIP Suspension	N/A	CGS-1100	CGS-1102	CGS-1103	CGS-1105	CGS-1106	CGS-1108	CGS-1110
CUSHION-GRIP Support	CGS-2100	CGS-2101	CGS-2101	CGS-2101	CGS-2101	CGS-2102	CGS-2102	CGS-2102
ARMOR-GRIP Suspension	AGS-5104	AGS-5108	AGS-5112	AGS-5115	AGS-5118	AGS-5122	AGS-5125	AGS-5130
ARMOR-GRIP Susp, EHV	N/A	N/A	N/A	N/A	N/A	AGS-5501	AGS-5504	AGS-5509
ARMOR-GRIP Support	AGS-5204	AGS-5208	AGS-5212	AGS-5215	AGS-5218	AGS-5222	AGS-5225	AGS-5230
ARMOR Rod	AR-0124	AR-0127	AR-0130	AR-0132	AR-0134	AR-0135	AR-0137	AR-0141
ARMOR Rod, EHV	N/A	N/A	N/A	N/A	N/A	N/A	AR-0500	AR-0504
Conductor Splice	LS-0134	LS-0137	LS-0140	LS-0142	LS-0145	LS-0146	LS-0148	LS-0151
Helical Rod Spacer	N/A	N/A	N/A	N/A	SUMS-3352	SUMS-3540	SUMS-5423	SUMS-1245
Spacer Damper (Type “C”)	N/A	N/A	CGSDC-X4519	CGSDC-X4520	CGSDC-X4522	CGSDC-X4524	CGSDC-X4526	CGSDC-X4529
Spacer Damper (Type “B”)	N/A	N/A	CGSDB-X4519	CGSDB-X4520	CGSDB-X4522	CGSDB-X4524	CGSDB-X4526	CGSDB-X4529
VORTX Conductor Damper	VSD-2016	VSD-2020	VSD-2020	VSD-2520	VSD-3525	VSD-3525	VSD-4032	VSD-4032
Spiral Vibration Damper	5050105	5050106	5050106	N/A	N/A	N/A	N/A	N/A
Air Flow Spoiler	5058102	5058103	5058103	5058104	5058104	5058105	5058105	5085106

PREFORMED LINE PRODUCTS

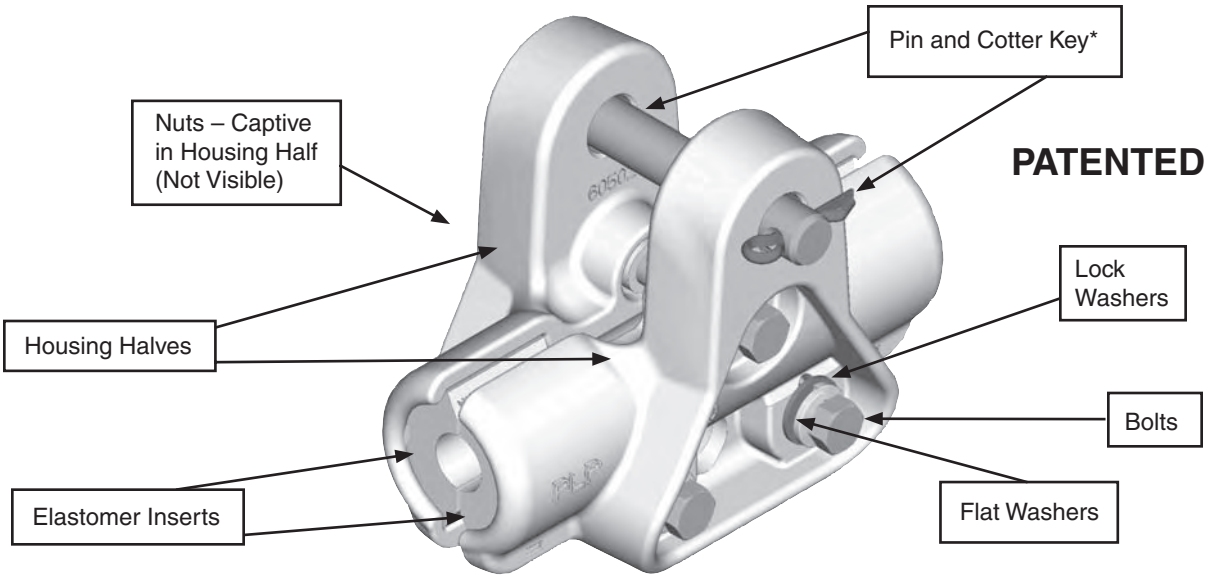
Section 1 – Transmission: Suspension & Support

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CUSHION-GRIP™ Suspension

NOMENCLATURE



GENERAL RECOMMENDATIONS

CUSHION-GRIP Suspensions are intended for use on all aluminum based conductors, and are designed to reduce the static and dynamic stresses at the support point so that the conductor is protected against the effects of oscillations. The conductor is cushioned by field proven, integral elastomer inserts, which guard against abrasion, wear, and fatigue.

The level of protection provided by the CUSHION-GRIP Suspension is comparable to a bolted clamp over armor rods. This equates to a reduction in bending strain as high as 50% as compared to bare conductor in a bolted clamp. This reduction in bending strain can be directly related to an increase in overall conductor life. The standard CUSHION-GRIP Suspension is designed for up to 125° C continous conductor operation (150° C two hour emergency) and the CGS-HT version can be used for applications with continous conductor operating temperatures up to 200° C (225° C two hour emergency).

Features and Benefits:

- The CUSHION-GRIP Suspension is shipped assembled with no loose parts. All fasteners are factory installed to eliminate lost hardware in the field.
- Labor Savings – To install the CUSHION-GRIP Suspension simply spread the body halves, place over the conductor, and tighten bolts.
- Integral Cushions – minimize conductor bending stresses at critical entry locations.
- Compatible with standard attachment hardware.
- Designed for EHV applications – corona free in bundled 345 kV applications.
- Easy Hot Stick application – Lower captive fasteners act as hinge to facilitate hot stick application.
- Can be supplied with a bolt/nut/cotter in place of the suspension pin and cotter.

VERTICAL ULTIMATE LOAD. The vertical ultimate load of the CUSHION-GRIP Suspension is 25,000# (111 kN).

SLIP LOAD. When initially installed, the CGS Clamp has a slip load that ranges between 10% to 15% of the conductor's rated breaking strength (RBS).

LINE ANGLE. The maximum recommended line angle for a CUSHION-GRIP Suspension is 30° as a single suspension and 60° in a double configuration utilizing a yoke plate.

Thermal Rating (Continuous)
Standard 125°C
HT Version 200°C

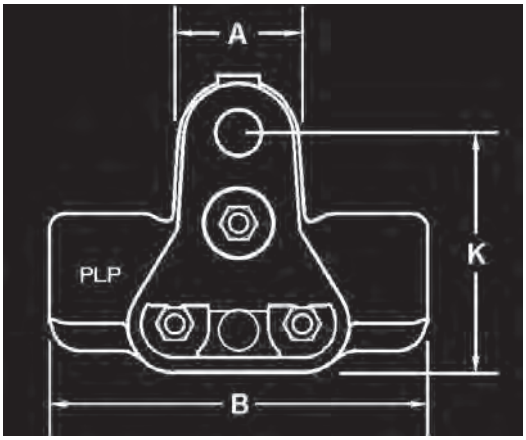
CUSHION-GRIP™ Suspension

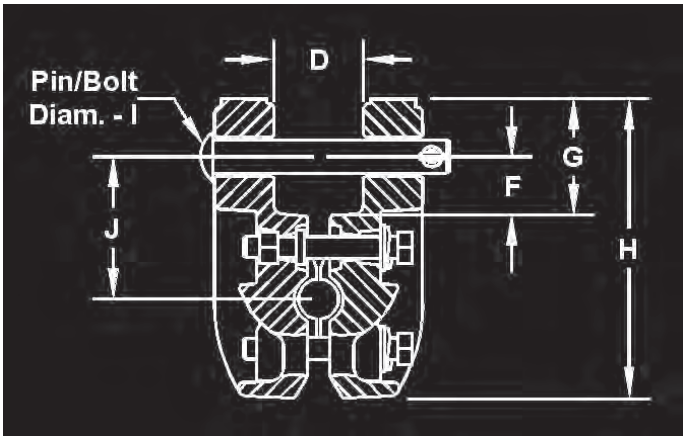
Catalog Number	Conductor Range - Inches (mm) Min	Max	Nominal Conductor Size	Height Inches (mm)	Width Inches (mm) Min	Max	Length Inches (mm)	Weight Pounds (kg)	Standard Carton Quantity	Vertical Ultimate Load
CGS-1100	0.609 (15.5)	0.660 (16.8)	266.8; 18/1, 26/7 266.8; 19w AAAC	5.30 (135 mm)	3.30 (84 mm)	3.85 (98 mm)	6.85 (169 mm)	4.00 (1.8 kg)	3 units	25,000 lbs. (111 kN)
CGS-1101	0.661 (16.8)	0.709 (18.0)	336.4; 19w, 37w AAC 336.4; 18/1							
CGS-1102	0.710 (18.0)	0.755 (19.2)	336.4; 26/7, 30/7 397.5; 19w AAC 397.5; 18/1							
CGS-1103	0.756 (19.2)	0.799 (20.3)	397.5; 26/7 477; 19w, 37w AAC 397.5; 19w AAAC							
CGS-1104	0.800 (20.3)	0.842 (21.4)	397.5; 30/7 477; 18/1							
CGS-1105	0.843 (21.4)	0.883 (22.4)	477; 24/7, 26/7, 30/7, 19 AAAC 556.5; 19w, 37w, 61w AAC 556.5; 36/1,18/1							
CGS-1106	0.880 (22.4)	0.931 (23.6)	556.5; 24/7, 26/7 636; 37w, 61w AAC	6.00 (152 mm)	3.30 (84 mm)	3.85 (98 mm)	7.55 (192 mm)	5.5 (2.5 kg)	3 units	
CGS-1107	0.932 (23.7)	0.980 (24.9)	636; 18/1, 24/7, 54/7 605; 24/5, 54/7							
CGS-1108	0.981 (24.9)	1.027 (26.1)	636; 26/7, 30/19 795; 37w AAC							
CGS-1109	1.028 (26.1)	1.072 (27.2)	795; 61w AAC 795; 36/1, 45/7							
CGS-1110	1.073 (27.3)	1.115 (28.3)	795; 24/7, 26/7, 54/7 795; 37w AAAC 900; 37w, 61w AAC							
CGS-1111	1.116 (28.3)	1.156 (29.4)	954; 37w, 61w AAC 795; 30/19 954; 36/1							
CGS-1112	1.157 (29.4)	1.196 (30.4)	954; 45/7, 54/7 1033.5; 37w, 61w AAC 1033.5; 36/1							
CGS-1113	1.178 (29.9)	1.237 (31.4)	954; 37w AAAC 1033.5; 45/7	6.25 (159 mm)	3.30 (84 mm)	3.85 (98 mm)	8.60 (218 mm)	6.7 (3.0 kg)	3 units	
CGS-1114	1.238 (31.4)	1.294 (32.9)	1033.5; 54/7 1192.5; 61w AAC 1113; 45/7, 54/19							
CGS-1115	1.295 (32.9)	1.349 (34.3)	1272; 61w AAC 1192.5; 45/7, 54/19 1272; 45/7							
CGS-1116	1.350 (34.3)	1.401 (35.6)	1272; 54/7 1351.5; 45/7 1431; 61w AAC							
CGS-1117	1.402 (35.6)	1.451 (36.9)	1351.5; 54/19 1431; 45/7 1590; 61w AAC							
CGS-1118	1.452 (36.9)	1.499 (38.1)	1590; 91w AAC 1431; 54/19							
CGS-1119	1.500 (38.1)	1.545 (39.21)	1590; 45/7, 54/19							
CGS-1120	1.546 (39.2)	1.569 (39.8)		7.60 (183 mm)	3.90 (99.8 mm)	4.40 (111.8 mm)	9.20 (234 mm)	9.5 (4.3 kg)	3 units	30,000 Lbs (136 kn)
CGS-1121	1.570 (39.8)	1.639 (41.6)	1780; 84/19							
CGS-1122	1.640 (41.7)	1.707 (43.3)								
CGS-1123	1.708 (43.4)	1.771 (45.0)	2156; 84/19 & 72/7							
CGS-1124	1.772 (45.0)	1.833 (46.5)	2312; 76/19							
CGS-1125	1.934 (46.6)	1.892 (48.0)								
CGS-1126	1.893 (48.1)	1.948 (49.5)								
CGS-1127	1.949 (49.5)	2.001 (50.8)								
CGS-1128	2.002 (50.8)	2.052 (52.1)								

NOTE: For high temperature (HT) version add - HT to the catalog number (EXAMPLE - CGS -1110-HT)

CUSHION-GRIP™ Suspension

DIMENSIONAL TABLES





DIMENSIONS – INCHES (mm)		DIMENSIONS – INCHES (mm)									
		A	B	D		F	G	H	I	J	K
Min	Max.			Min	Max						
0.609 (15.5)	0.883 (22.4)	2.25 (57)	6.85 (174)	1.15 (29.2)	1.70 (43.2)	1.00 (25.4)	2.00 (51)	5.30 (135)	5/8 (15.9)	2.60 (66)	4.30 (109)
0.884 (22.5)	1.196 (30.4)	2.25 (57)	7.55 (192)	1.15 (29.2)	1.70 (43.2)	1.00 (25.4)	2.00 (51)	6.00 (152)	5/8 (15.9)	2.70 (69)	4.95 (126)
1.178 (29.9)	1.499 (38.1)	2.25 (57)	8.60 (218)	1.15 (29.2)	1.70 (43.2)	1.00 (25.4)	2.00 (51)	6.25 (159)	5/8 (15.9)	2.90 (74)	5.20 (132)
1.500 (38.1)	2.052 (52.1)	2.50 (63.5)	9.20 (234)	1.25 (32.8)	1.80 (45.7)	1.25 (32.8)	2.50 (63.5)	7.60 (193)	5/8 (15.9)	3.50 (89)	6.35 (161.3)

CGS HARDWARE & FITTINGS

Shown below are the Clevis Eye (1), Y-Clevis Eye (2), Socket Eye (3), Socket Clevis (4), Yoke Plate (5) and Vertical Bundle Links (6) that can be used in conjunction with the CUSHION-GRIP™ Suspension. See diagram above for CGS dimensions for assistance in choosing the appropriate mating hardware part numbers.

1



CE-5105

2



YC-5209

3



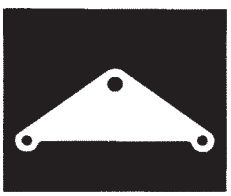
SE-5154

4



SC-5194

5



YP-5907

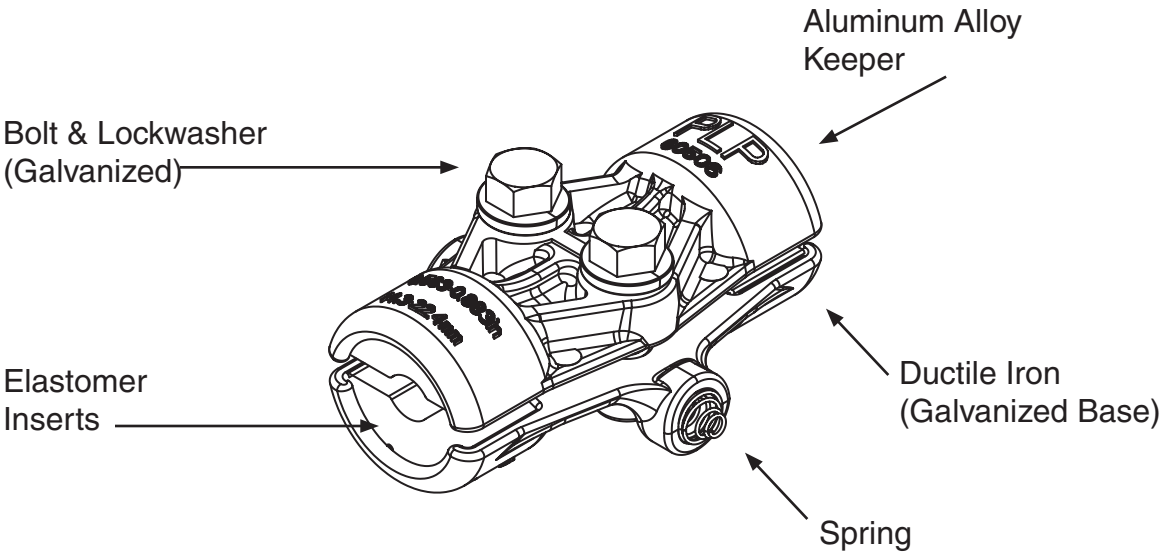
6



VBL-MS-11244 (12")
VBL-MS-11302 (18")

CUSHION-GRIP™ Support

NOMENCLATURE



GENERAL RECOMMENDATIONS

The CUSHION-GRIP Support is intended for use on all aluminum based conductors, and is designed to reduce the static and dynamic stresses at the support point, so that the conductor is protected against the effects of oscillations. The conductor is cushioned by field proven, integral elastomer inserts, which guard against abrasion, wear, and fatigue.

The level of protection provided by the CUSHION-GRIP Support is comparable to a bolted clamp over armor rods. This equates to a reduction in bending strain as high as 50% as compared to bare conductor in a bolted clamp. This reduction in bending strain can be directly related to an increase in overall conductor life. The CUSHION-GRIP Support is designed for up to 125^0 C continous conductor operation (150^0 C two hour emergency).

Thermal Rating (Continuous) 125°C

Features and Benefits:

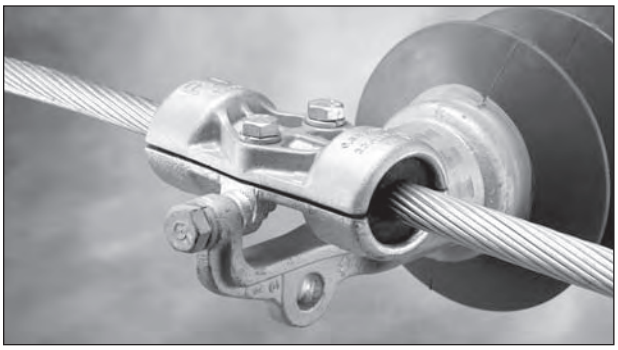
- The CUSHION-GRIP Support is shipped assembled. All fasteners are captivated in the keeper.
- Labor Savings – To install the CUSHION-GRIP Support simply install the base, place the keeper over the conductor, and tighten bolts.
- Integral Cushions – minimize conductor bending stresses at critical entry locations.

VERTICAL ULTIMATE LOAD. The CUSHION-GRIP Support will withstand a pulloff load from the trunnion pins of the insulator cap of 5,000 lbs., applied in any direction. This includes the vertical up direction (uplift).

SLIP LOAD. When initially installed, the CGS has a slip load that ranges between 10% to 15% of the conductor's rated breaking strength (RBS).

LINE ANGLE. The maximum recommended line angle for a CUSHION-GRIP Support is 30°.

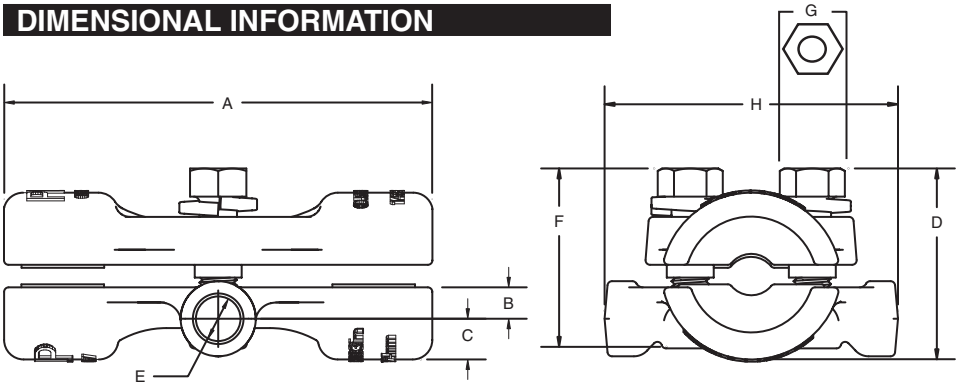
CUSHION-GRIP™ Support



ORDERING INFORMATION

Catalog Number	Conductor Range (mm)		Nominal Conductor Sizes	Weight/Unit Pounds (Kg)	Standard Carton Quantity
	Min.	Max.			
CGS-2100	.375" (9.5)	.563" (14.3)	1/0 to 4/0	1.45 (0.66)	3
CGS-2101	.564" (14.3)	.883" (22.4)	226 Kcmil to 477 Kcmil	2.40 (1.1)	3
CGS-2102	.884" (22.4)	1.196" (30.4)	556 Kcmil to 954 Kcmil	3.50 (1.6)	3

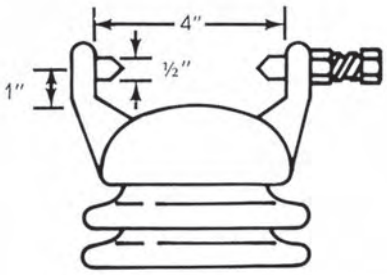
DIMENSIONAL INFORMATION



Catalog Number	Dimensions (m)							
	A	B	C	D	E	F	G	H
CGS-2100	5	0.35	0.50	1.85	0.595	1.5	9/16	3-7/8
CGS-2101	5.7	0.45	0.55	2.4	0.595	2	3/4	3-7/8
CGS-2102	6.4	0.75	0.55	3	0.595	2	3/4	3-7/8

CLAMP TOP TRUNNION

To insure proper fit and service life, it is recommended that only line post insulators with clamp top trunnion caps that conform to ANSI standards be used. See the illustration on the right for nominal cap dimensions that illustrate ANSI standards that have been established outlining the permissible dimensions and tolerances for trunnion caps. Consult the insulator manufacturer when in doubt about insulator standards.

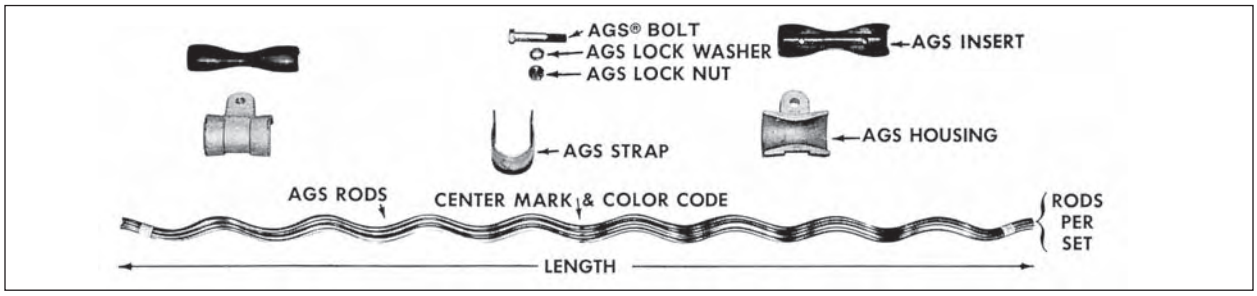


The above dimensions are approximates for design information. Consult ANSI specification C29.7-1977 for exact dimensions.

ARMOR-GRIP® Suspension

NOMENCLATURE

Thermal Rating (Continuous) 200°C



AGS® Bolt, Washer, Lock Nut: Galvanized Steel.

AGS Strap: Galvanized Steel for conductor dia. range .272"-.500".
High-Strength Aluminum Alloy for conductor dia. range .482"-2.233".

AGS Insert: An elastomer specifically formulated for resistance to ozone attack, weathering, extreme high and low temperature variations, and compression set. An aluminum alloy reinforcement is molded into the elastomer.



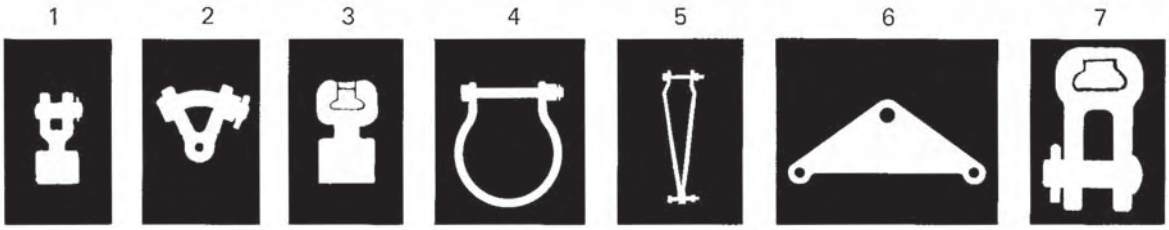
AGS Housing: Galvanized Steel Stamping – for cable dia. range .272"-.500".
High-Strength Aluminum Alloy Casting for conductor dia. range .482"-2.233".

AGS Rods: Aluminum Clad Steel for ACSR diameter .304"-.481".
Aluminum Alloy for ACSR diameter .482"-2.233".
Aluminum Clad Steel for Alumoweld Strand diameter .272"-.500".
Galvanized Steel for Galvanized Steel Strand, diameter .272"-.500".
Standard Armor Rods have dimensions which are different from AGS Rods and cannot be substituted.

Ball End Rod: Rod has a Ball End for non-EHV application. PARROT-BILL® ends are supplied for EHV application.

AGS HARDWARE and FITTINGS

Shown below is the Clevis Eye (1), Y Clevis Eye (2), Socket Eye (3), Hold-Down Weight Shackle (4), Vertical Bundling Link Assembly (5), Yoke Plate (6), and Socket Clevis (7).



GENERAL RECOMMENDATIONS

ARMOR-GRIP Suspension is intended for use on aluminum based conductors, Alumoweld and galvanized steel strands. It is designed to reduce the static and dynamic stresses at the support point, so that the conductor or strand is protected against the effects of oscillations. It also protects the conductor in the support against impulse and power flash-over.

ARMOR-GRIP Suspension is recommended as being superior to armor – clamp combinations, for protecting conductors from bending stress, compression stress and abrasion.

(Continued)

Copperweld and Alumoweld are registered trademarks of the Copperweld Co.

ARMOR-GRIP® Suspension

GENERAL RECOMMENDATIONS CONTD.

VERTICAL ULTIMATE STRENGTH. Refer to dimensional tables in this section.

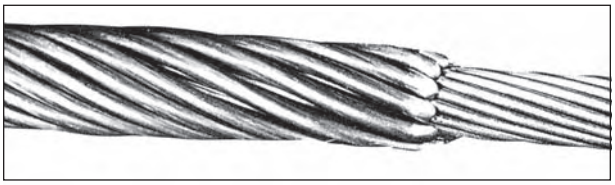
SLIP LOAD. When initially installed, the AGS® Unit has a slip load of approximately 20% of the conductor RBS and approximately 10% of the EHS strands RBS during unbalanced load conditions, but significantly higher loads can be expected after the unit has been in service for a period of time.

LINE ANGLE. The maximum recommended line angle for a single support AGS Unit is 30˚. For angles between 30˚ and 60˚, the ARMOR-GRIP Suspension: Double is recommended. Refer to pages 1-18 thru 1-24 for catalog numbers.

DESIGN MODIFICATIONS

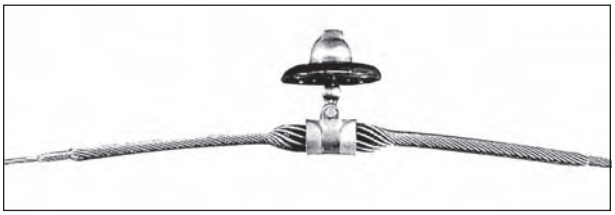
ARMOR-GRIP Suspension: PARROT-BILL® Ends

To meet the corona onset and RIV requirements for most extra-high-voltage applications (345 KV and above), PARROT BILL Ends are to be used instead of the standard ball-end rods. Consult the Factory for an engineering recommendation.



ARMOR-GRIP Suspension: for Line Repair

For repair of fatigue-damaged conductors, a specially designed ARMOR-GRIP Suspension can be applied over PREFORMED™ Armor Rods to extend the life of the conductor. Wrench-formed rods must be removed when conductor fatigue occurs under them; a splice is then applied to the fatigued area and the AGS Unit is applied over the splice. When considering the use of this product, consult the Factory for an engineering recommendation.

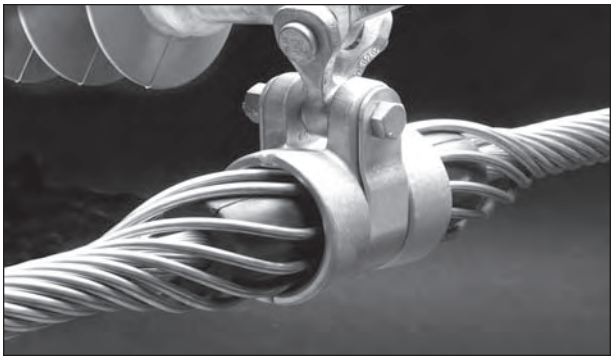


SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. However, all components, **except the rod,** may be reused if in good condition. CAUTION: DO NOT MODIFY OR REUSE THE RODS UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size ARMOR-GRIP Suspension before application.
5. ARMOR-GRIP Suspensions are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

ARMOR-GRIP® Suspension

For use on:
ACSR, All-Aluminum, Aluminum Alloy, AWAC®, Compacted All-Aluminum, Compacted ACSR, ACSS (AW & TW) for Continous OperatingTemperatures up to 200˚ C



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	AGS	RODS		AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
	MIN.	MAX.		LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON	
AGS-5156	.304	.315	#4, 3/4AWAC	26	**.102**	10	24	24	55	Brown
AGS-5157	.316	.327	#2, 6/1	26	**.102**	11	24	24	56	Red
AGS-5158	.328	.342	#4, 2/5AWAC	26	**.102**	11	24	24	57	Orange
AGS-5159	.343	.355	#3, 3/4AWAC	26	**.102**	11	24	24	58	Black
AGS-5160	.356	.374	#1, 5/2AWAC	26	**.102**	12	24	24	59	Green
AGS-5161	.375	.389	#3, 2/5AWAC	26	**.102**	12	24	24	59	Purple
AGS-5162	.390	.404	1/0, 6/1	36	**.128**	11	24	24	79	Yellow
AGS-5163	.405	.418	1/0, 5/2AWAC	36	**.128**	11	24	24	79	Brown
AGS-5164	.419	.434	#1, 3/4AWAC	36	**.128**	11	24	24	79	Green
AGS-5165	.435	.450	2/0, 6/1	36	**.128**	11	24	24	79	Blue
AGS-5166	.451	.470	2/0, 5/2AWAC	36	**.128**	12	24	24	83	White
AGS-5167	.471	.481	110.8, 12/7	36	**.128**	12	24	24	83	Green
AGS-5155	.482	.499	#1, 2/5AWAC	40	**.167**	10	18	18	44	Red
AGS-5100	.500	.512	3/0, 6/1	40	**.167**	10	18	18	44	Blue
AGS-5101	.513	.530	4/0, 7W All-Alum.	41	**.167**	11	18	18	47	Green
AGS-5102	.531	.542	159, 12/7AWAC	41	**.167**	11	18	18	47	Yellow
AGS-5103	.543	.555	2/0, 3/4AWAC	44	**.182**	10	18	18	53	Black
AGS-5104	.556	.573	4/0, 6/1	44	**.182**	11	18	18	55	White
AGS-5105	.574	.594	266.8, 7-19W All-Aulm.	45	**.182**	11	18	18	56	Brown
AGS-5106	.595	.606	266.8, 18/1AWAC	46	**.182**	11	18	18	53	Orange
AGS-5107	.607	.619	266.8, 18/1	46	**.182**	11	18	18	56	Purple
AGS-5108	.620	.645	266.8, 26/7	50	**.182**	12	18	18	61	Red
AGS-5109	.646	.673	336.4, 17-37W All-Alum.	54	**.204**	11	15	15	60	Blue

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) Reference general dimensional information for physical dimensions other than length.
(3) Standard ARMOR-GRIP Suspension does not include AGS® FITTINGS, i.e., AGS Socket Eye, AGS Clevis Eye or AGS Y-Clevis Eye. See tables following AGS Catalog information for catalog numbers and dimensions of AGS FITTINGS.
(4) AWAC is a registered trademark of the Copperweld Co.

ARMOR-GRIP® Suspension

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	AGS		RODS		AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
	MIN.	MAX.		LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON		
AGS-5110	.674	.690	300, 26/7	54	**.204**	11	15	15	61	Green
AGS-5111	.691	.710	300, 30/7	54	**.204**	12	15	15	64	Yellow
AGS-5112	.711	.731	336.4, 26/7	55	**.204**	12	15	15	65	Black
AGS-5113	.732	.750	336.4, 30/7	56	**.204**	12	15	15	66	White
AGS-5114	.751	.768	397.5, 26/7AWAC	60	**.250**	10	12	12	68	Brown
AGS-5115	.769	.795	397.5, 26/7	60	**.250**	11	12	12	68	Orange
AGS-5116	.796	.824	477, 18/1	61	**.250**	11	12	12	73	Purple
AGS-5117	.825	.845	477, 26/7AWAC	64	**.250**	11	12	12	76	Red
AGS-5118	.846	.870	477, 26/7	64	**.250**	11	12	12	76	Blue
AGS-5119	.871	.893	600, 37W All-Alum.	65	**.250**	12	12	12	81	Green
AGS-5120	.894	.907	500, 30/7	65	**.250**	12	12	12	82	Green
AGS-5121	.908	.920	556.5, 24/7	66	**.250**	12	12	9	81	Yellow
AGS-5122	.921	.937	556.5, 26/7	66	**.250**	12	9	9	81	Black
AGS-5123	.938	.962	605, 24/7	67	**.250**	12	9	9	81	White
AGS-5124	.963	.986	636, 24/7	68	**.250**	13	9	9	87	Brown
AGS-5125	.987	1.005	636, 26/7	69	**.250**	13	9	9	87	Orange
AGS-5126	1.006	1.022	636, 30/19	80	**.310**	11	6	6	73	Purple
AGS-5127	1.023	1.040	795, 37-61W All-Alum.	82	**.310**	11	6	6	75	Red
AGS-5128	1.041	1.074	715.5, 26/7	82	**.310**	11	6	6	75	Blue
AGS-5129	1.075	1.090	874.5, 37W	82	**.310**	12	6	6	78	Green
AGS-5130	1.091	1.118	795, 26/7	82	**.310**	12	6	6	78	Yellow
AGS-5131	1.119	1.136	954, 37W All-Alum.	82	**.310**	12	6	6	78	Black

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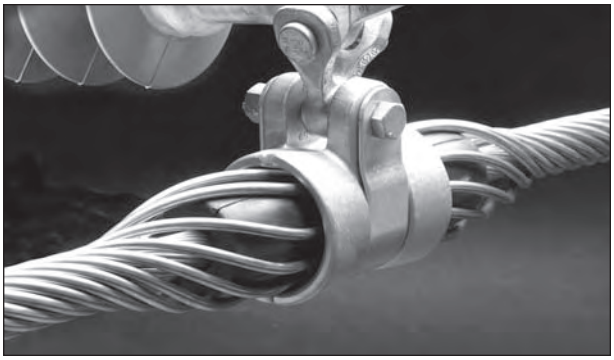
Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) Reference general dimensional information for physical dimensions other than length.
(3) Standard ARMOR-GRIP Suspension does not include AGS® FITTINGS, i.e., AGS Socket Eye, AGS Clevis Eye or AGS Y-Clevis Eye. See tables following AGS Catalog information for catalog numbers and dimensions of AGS FITTINGS.
(4) AWAC is a registered trademark of the Copperweld Co.

ARMOR-GRIP® Suspension

For use on:
ACSR, All-Aluminum, Aluminum Alloy, AWAC® Compacted All-Aluminum Compacted ACSR, ACSS (AW & TW) for Continuous Operating Temperatures up to 200˚ C



Catalog Number	Diameter Range (Inches) Min.	Max.	Nominal Conductor Size	AGS® Rods Length (Inches)	Rod Diameter (Inches)	Rods Per Set	Sets Per Carton	AGS Hardware Sets Per Carton	AGS Rods & Hardware Wt./lbs. Per Carton	Color Code
AGS-5132	1.137	1.152	795, 30/19	82	.310	12	6	6	78	White
AGS-5133	1.153	1.175	954, 45/7	82	.310	12	6	6	79	Brown
AGS-5134	1.176	1.208	954, 54/7	82	.310	12	6	6	79	Orange
AGS-5135	1.209	1.226	1113, 61W	88	.365	11	3	3	55	Purple
AGS-5136	1.227	1.259	1192.5, 61W All-Alum.	88	.365	11	3	3	55	Red
AGS-5137	1.260	1.286	1113, 48/7	88	.365	12	3	3	58	Blue
AGS-5138	1.287	1.314	1272, 61W	88	.365	12	3	3	58	Green
AGS-5139	1.315	1.355	1272, 45/7	88	.365	12	3	3	58	Yellow
AGS-5140	1.356	1.394	1272, 54/19	88	.365	12	3	3	60	Black
AGS-5141	1.395	1.416	1351.5, 54/19 AWAC	88	.365	13	3	3	61	White
AGS-5142	1.417	1.442	1510.5, 61W	88	.365	13	3	3	62	Brown
AGS-5143	1.443	1.477	1431, 54/19	88	.365	13	3	3	64	Orange
AGS-5144	1.478	1.516	1590, 45/7	88	.365	13	3	3	64	Purple
AGS-5145	1.517	1.557	1590, 54/19	88	.365	13	3	3	64	Red
AGS-5146	1.558	1.579	1780, 72/7	100	.365	14	3	3	78	Blue
AGS-5147	1.580	1.612	1780, 84/19	100	.365	14	3	3	78	Green
AGS-5148	1.613	1.650	2000, 91W	100	.365	14	3	3	79	Yellow
AGS-5149	1.651	1.688	2000, 72/7	100	.365	15	3	3	83	Black
AGS-5150	1.689	1.711	2000, 84/19	100	.365	15	3	3	83	White
AGS-5151	1.712	1.752	2129, 84/19	100	.365	15	3	3	83	Brown
AGS-5152	1.753	1.790	2156, 84/19	100	.365	15	3	3	83	Orange
AGS-5153	1.791	1.828	2300, 84/19	100	.365	15	3	3	83	Purple
AGS-5168	1.829	1.882	2515MCM76/19	100	.365	16	3	3	85	Red
AGS-5177	2.193	2.233		100	.365	18	3	3	88	Red

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) Reference general dimensional information for physical dimensions other than length.
(3) Standard ARMOR-GRIP Suspension does not include AGS® FITTINGS, i.e., AGS Socket Eye, AGS Clevis Eye or AGS Y-Clevis Eye. See tables following AGS Catalog information for catalog numbers, prices and dimensions of AGS FITTINGS.
(4) AWAC is a registered trademark of the Copperweld Co.

ARMOR-GRIP® Suspension (EHV)

With PARROT-BILL® End Rods for Extra High Voltage (EHV), 345 KV and above

For use on:
ACSR, All-Aluminum, Aluminum Alloy, AWAC® Compacted All-Aluminum Compacted ACSR, ACSS (AW & TW) for Continuous Operating Temperatures up to 200˚ C



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	AGS RODS				AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
	MIN.	MAX.		LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON		
AGS-5500	.908	.920	556.5, 24/7	66	**.250**	12	12	9	81	Yellow
AGS-5501	.921	.937	556.5, 26/7	66	**.250**	12	9	9	81	Black
AGS-5502	.938	.962	605, 24/7	67	**.250**	12	9	9	81	White
AGS-5503	.963	.986	636, 24/7	68	**.250**	13	9	9	87	Brown
AGS-5504	.987	1.005	636, 26/7	69	**.250**	13	9	9	87	Orange
AGS-5505	1.006	1.022	636, 30/19	80	**.310**	11	6	6	73	Purple
AGS-5506	1.023	1.040	795, 37-61W All-Alum.	82	**.310**	11	6	6	75	Red
AGS-5507	1.041	1.074	715.5, 26/7	82	**.310**	11	6	6	75	Blue
AGS-5508	1.075	1.090	874.5, 37W	82	**.310**	12	6	6	78	Green
AGS-5509	1.091	1.118	795, 26/7	82	**.310**	12	6	6	78	Yellow
AGS-5510	1.119	1.136	954, 37W All-Alum.	82	**.310**	12	6	6	78	Black
AGS-5511	1.137	1.152	795, 30/19	82	**.310**	12	6	6	78	White
AGS-5512	1.153	1.175	954, 45/7	82	**.310**	12	6	6	79	Brown
AGS-5513	1.176	1.208	954, 54/7	82	**.310**	12	6	6	79	Orange
AGS-5514	1.209	1.226	1113, 61W	88	**.365**	11	3	3	55	Purple
AGS-5515	1.227	1.259	1192.5, 61W All-Alum.	88	**.365**	11	3	3	55	Red
AGS-5516	1.260	1.286	1113, 48/7	88	**.365**	12	3	3	58	Blue

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) Reference general dimensional information for physical dimensions other than length.
(3) Standard ARMOR-GRIP Suspension does not include AGS® FITTINGS, i.e., AGS Socket Eye, AGS Clevis Eye or AGS Y-Clevis Eye. See tables following AGS Catalog information for catalog numbers and dimensions of AGS FITTINGS.
(4) AWAC is a registered trademark of the Copperweld Co.

ARMOR-GRIP® Suspension (EHV)

With PARROT-BILL® End Rods for Extra High Voltage (EHV), 345 KV and above



For use on:
ACSR, All-Aluminum, Aluminum Alloy, AWAC®
Compacted All-Aluminum
Compacted ACSR, ACSS (AW&TW)
for Continuous Operating Temperatures up to 200°C

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	AGS RODS				AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
	MIN.	MAX.		LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON		
AGS-5517	1.287	1.314	1272, 61W	88	**.365**	12	3	3	58	Green
AGS-5518	1.315	1.355	1272, 45/7	88	**.365**	12	3	3	58	Yellow
AGS-5519	1.356	1.394	1272, 54/19	88	**.365**	12	3	3	60	Black
AGS-5520	1.395	1.416	1351.5, 54/19 AWAC	88	**.365**	13	3	3	61	White
AGS-5521	1.417	1.442	1510.5, 61W	88	**.365**	13	3	3	62	Brown
AGS-5522	1.443	1.477	1431, 54/19	88	**.365**	13	3	3	64	Orange
AGS-5523	1.478	1.516	1590, 45/7	88	**.365**	13	3	3	64	Purple
AGS-5524	1.517	1.557	1590, 54/19	88	**.365**	13	3	3	64	Red
AGS-5525	1.558	1.579	1780, 72/7	100	**.365**	14	3	3	78	Blue
AGS-5526	1.580	1.612	1780, 84/19	100	**.365**	14	3	3	78	Green
AGS-5527	1.613	1.650	2000, 91W	100	**.365**	14	3	3	79	Yellow
AGS-5528	1.651	1.688	2000, 72/7	100	**.365**	15	3	3	83	Black
AGS-5529	1.689	1.711	2000, 84/19	100	**.365**	15	3	3	83	White
AGS-5530	1.712	1.752	2129, 84/19	100	**.365**	15	3	3	83	Brown
AGS-5531	1.753	1.790	2156, 84/19	100	**.365**	15	3	3	83	Orange
AGS-5532	1.791	1.828	2300, 84/19	100	**.365**	15	3	3	83	Purple

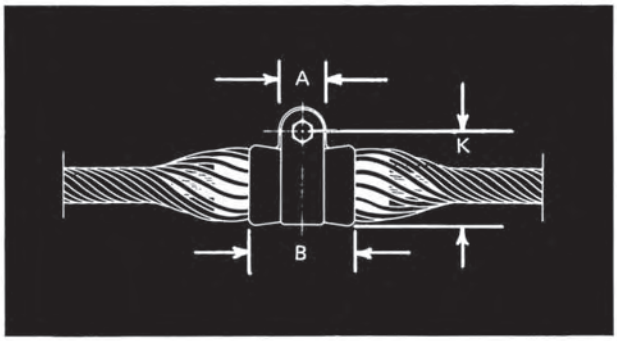
Right-hand lay standard

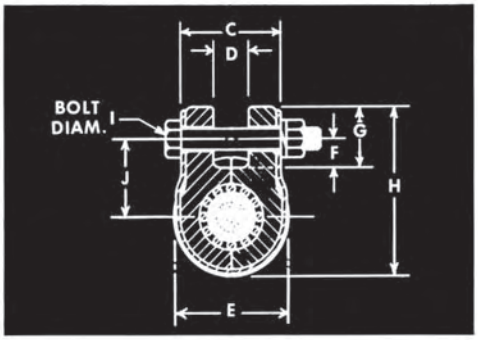
EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) Reference general dimensional information for physical dimensions other than length.
(3) Standard ARMOR-GRIP Suspension does not include AGS® FITTINGS, i.e., AGS Socket Eye, AGS Clevis Eye or AGS Y-Clevis Eye. See tables following AGS Catalog information for catalog numbers and dimensions of AGS FITTINGS.
(4) AWAC is a registered trademark of the Copperweld Co.

ARMOR-GRIP® Suspension

DIMENSIONAL TABLES





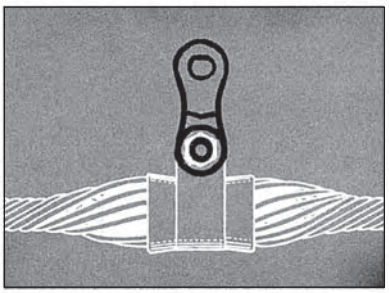
CONDUCTOR RANGE (INCHES)		DIMENSION (INCHES)											VERTICAL ULTIMATE STRENGTH (POUNDS)
MIN	MAX.	A	B	C	D	E	F	G	H	I	J	K	
.304	.389	1-3/4	2-1/4	1-1/4	11/16	2-1/16	1-5/32	2-1/32	4-3/32	5/8	2-1/32	3-7/32	15,000
.390	.481	1-3/4	2-1/2	1-5/16	11/16	2-1/4	1-3/32	1-31/32	4-3/32	5/8	2-3/32	3-7/32	15,000
.482	.542	1-5/8	3	2-3/32	21/32	2-13/32	1	1-13/16	4	5/8	1-31/32	3-3/16	10,000
.543	.645	1-3/4	3-1/2	2-5/32	23/32	2-5/8	1-1/32	1-29/32	4-3/16	5/8	1-15/16	3-1/4	10,000
.646	.750	1-3/4	3-3/4	2-1/4	3/4	2-13/16	1	1-7/8	4-7/16	5/8	2-5/32	3-9/16	15,000
.751	.907	2	4-17/32	2-11/16	7/8	3-5/16	1	2	5	5/8	2-11/32	4	20,000
.908	1.005	2	5	2-15/16	7/8	3-11/16	1	2	5-3/8	5/8	2-17/32	4-3/8	20,000
1.006	1.208	2-1/4	5-1/2	3-1/2	1-3/16	4-5/32	1	2-1/8	5-29/32	5/8	2-45/64	4-25/32	25,000
1.209	1.355	2-1/4	6	3-5/8	1-1/4	4-13/16	1-1/4	2-3/8	6-11/16	3/4	3-5/32	5-9/16	25,000
1.356	1.557	2-1/4	6-1/2	4-1/8	1-3/8	5-1/16	1-1/8	2-1/4	6-5/8	3/4	2-31/32	5-1/2	25,000
1.558	1.882	2-1/2	7	4-11/16	2-1/4	5-19/32	1-1/8	2-3/8	7-1/4	3/4	3-3/16	6	25,000
1.883	2.233	2-1/2	7-1/2	5-7/32	2-13/32	6-1/16	1-3/16	2-7/16	7-25/32	3/4	3-1/2	6-17/32	30,000 (2)

EXPLANATORY NOTE:

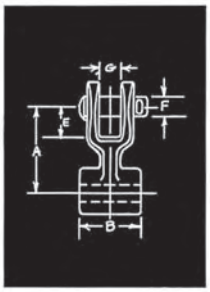
(1) AGS® Rod length and diameter for individual sizes can be taken from the catalog number tables.
(2) CE-5106 and YC-5211 are rated at 25,000 lbs. vertical ultimate strength.

ARMOR-GRIP® Suspension: Fittings

AGS CLEVIS EYE*

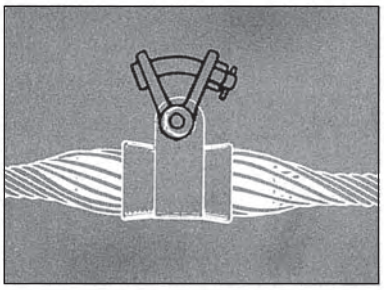


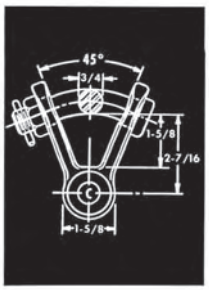




CATALOG NUMBER	CONDUCTOR DIA. RANGE (INCHES)		GENERAL DIMENSIONS							VERTICAL ULTIMATE STRENGTH (POUNDS)	WT. PER 100 UNITS (POUNDS)
	MIN.	MAX.	A IN.	B IN.	C IN.	D IN.	E IN.	F IN.	G IN.		
CE-5259	.272	.750	3-1/8	1/2	11/16	1-1/2	1-1/2	5/8	13/16	15,000	**104**
CE-5261	.751	1.005	3-1/8	3/4	11/16	1-1/2	1-1/2	5/8	13/16	20,000	**104**
CE-5105	1.006	1.557	3-1/8	1-1/16	13/16	1-1/2	1-1/2	5/8	13/16	25,000	**178**
CE-5106	1.558	2.233	3-1/8	2-1/8	13/16	1-1/2	1-1/2	5/8	13/16	25,000	**178**

AGS Y CLEVIS EYE*







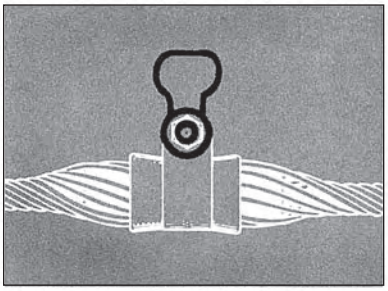
CATALOG NUMBER	CONDUCTOR DIA. RANGE (INCHES)		GENERAL DIMENSIONS		VERTICAL ULTIMATE STRENGTH (POUNDS)
	MIN.	MAX.	B IN.	C IN.	
YC-5206	.272	.750	5/8	11/16	15,000
YC-5207	.751	1.005	3/4	11/16	20,000
YC-5209	1.006	1.557	1-1/16	13/16	25,000
YC-5211	1.558	2.233	2-1/8	13/16	25,000

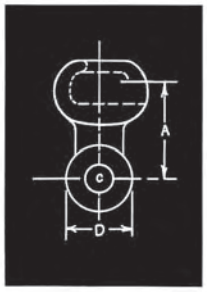
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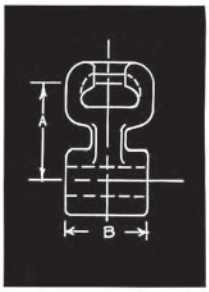
*When ordered, AGS® FITTINGS will be packed separately from the standard ARMOR-GRIP® Suspension.

ARMOR-GRIP® Suspension: Fittings

AGS SOCKET EYE*







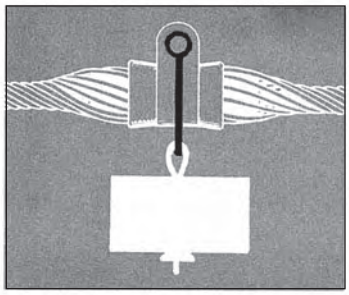
CATALOG NUMBER	CONDUCTOR DIA. RANGE MIN	CONDUCTOR DIA. RANGE MAX	GENERAL DIMENSIONS A IN	GENERAL DIMENSIONS B IN	GENERAL DIMENSIONS C IN	GENERAL DIMENSIONS D IN	VERTICAL ULTIMATE STRENGTH (POUNDS)	WT. PER 100 UNITS POUNDS
SE-5150	.272	.750	2-5/16	1/2	11/16	1-1/2	15,000	165
SE-5152	.751	1.005	2-5/16	3/4	11/16	1-1/2	20,000	165
SE-5154	1.006	1.557	2-5/16	1-1/16	13/16	1-1/2	25,000	178
SE-5155	1.558	2.233	2-5/16	2-1/8	13/16	1-1/2	30,000	178

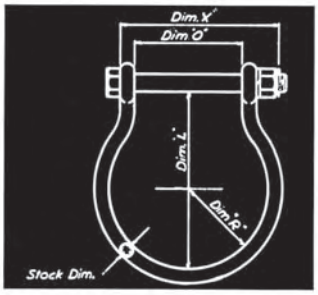
EXPLANATORY NOTE:

*When ordered, AGS® FITTINGS will be packed separately from the standard ARMOR-GRIP® Suspension.

ARMOR-GRIP® Suspension: Hardware

Hold Down Weight Shackles*



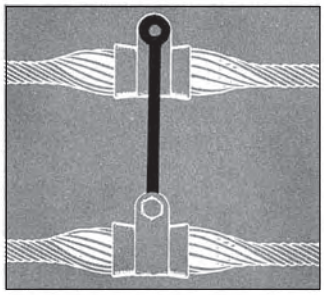


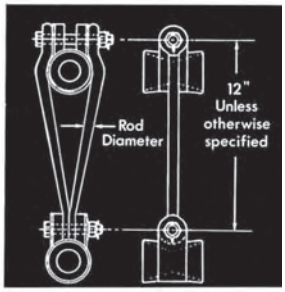
ARMOR-GRIP SUSPENSION CONDUCTOR DIAMETER RANGE (INCHES)	HUGHES BROTHERS STOCK NO. †	BOLT DIAMETER (IN.)	STOCK DIM. (IN.)	DIM. "X" (IN.)	DIM. "O" (IN.)	DIM. "L" (IN.)	DIM. "R" (IN.)	MAXIMUM HOLD DOWN WEIGHT (LBS.)
**.304- .500	1888.1	5/8	1/2	3-5/8	1-5/8	4	1-1/2	300
.482- .750	1888.2	5/8	1/2	4-3/8	2-3/8	4-7/8	1-7/8	300
.751- .907	1888.3	5/8	1/2	4-3/4	2-3/4	5-3/8	2-3/8	300
.908-1.005	1888.4	5/8	1/2	5-1/8	3-1/8	5-1/2	2-1/2	300
1.006-1.208	1888.5	5/8	1/2	5-3/4	3-3/4	6-1/8	2-3/4	300
1.209-1.355	1888.6	3/4	5/8	6	3-3/4	6-1/4	3	800
1.356-1.557	1888.7	3/4	5/8	6-1/2	4-1/4	6-1/2	3	800
1.558-1.828	1888.8	3/4	5/8	7-1/8	4-7/8	7-1/4	3-1/4	800

† Each assembly consists of a shackle body and hex-head bolt, lockwasher, nut, and Cotter Key.
* SPECIAL PRODUCT sold by Hughes Brothers, Inc., Seward, Nebraska–See following page.
** For use only with AGS Units installed on strand.

ARMOR-GRIP® Suspension: Hardware

Vertical Bundling Link Assembly





ULTIMATE RATED
STRENGTH 12,500 LBS./LINK

ARMOR-GRIP Suspension Conductor Diameter Range (in)	Hughes Brothers Stock No. †	Rod Diameter (in.)	Bolt Diameter (in.)	Center To Center Of Eyes‡ (in.)
.482- .542	1701.1	1/2	5/8	12
.543- .645	1701.2	1/2	5/8	12
.646- .750	1701.3	1/2	5/8	12
.751- .907	1701.4	5/8	5/8	12
.908-1.005	1701.5	5/8	5/8	12
1.006-1.208	1701.6	5/8	5/8	12
1.209-1.355	1701.7	5/8	3/4	12
1.356-1.557	1701.8	3/4	3/4	12
1.558-1.882	1701.9	3/4	3/4	12
1.883-2.233	1701.10	3/4	3/4	12

† Each assembly consists of two links and one hex bolt for top suspension with lockwasher, nut, and Cotter Key.

Center to center of eyes indicates vertical distance between conductors and will be 12" unless otherwise specified.

SPECIAL PRODUCT available directly from PLP® and from Hughes Brothers, Inc. Consult PLP for specific applications.

Add a "-18" to the catalog number for 18" spacing.

Hughes Brothers, Inc. Product section continued

ORDERING INSTRUCTIONS

For: Hold-Down Weight Shackles and Vertical Bundling Link Assemblies

Order directly from:

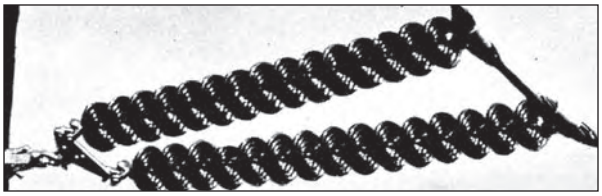
Hughes Brothers, Inc.
210 North 13th Street
P.O. Box 191
Seward, Nebraska 68424
Telephone: (402) 643-2991

Price and delivery information available from Hughes Brothers, Inc., upon request.

ARMOR-GRIP® Suspension: Double

For Line Angles Between 30˚ and 60˚

For use on:
ACSR, All-Aluminum, Aluminum Alloy, AWAC® Compacted All-Aluminum Compacted ACSR, ACSS (AW & TW) for Continuous Operating Temperatures up to 200˚ C



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	AGS	RODS			AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
	MIN.	MAX.		LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON		
AGS-5888	.304	.315	#4, 3/4 AWAC	38	.102	10	24	48	102	BROWN
AGS-5889	.316	.327	#2, 6/1	38	.102	11	24	48	104	RED
AGS-5890	.328	.342	#4, 2/5 AWAC	38	.102	11	24	48	106	ORANGE
AGS-5891	.343	.355	#3, 3/4 AWAC	38	.102	11	24	48	106	BLACK
AGS-8592	.356	.374	#1, 5/2 AWAC	38	.102	12	24	48	108	GREEN
AGS-5893	.375	.389	#3, 2/5 AWAC	38	.102	12	24	48	108	PURPLE
AGS-5894	.390	.404	1/0, 6/1	48	.128	11	24	48	135	YELLOW
AGS-5895	.405	.418	1/0, 5/2 AWAC	48	.128	11	24	48	135	BROWN
AGS-5896	.419	.434	#1, 3/4 AWAC	48	.128	11	24	48	135	GREEN
AGS-5897	.435	.450	2/0, 6/1	48	.128	11	24	48	135	BLUE
AGS-5898	.451	.470	2/0, 5/2 AWAC	48	.128	12	24	48	141	WHITE
AGS-5899	.471	.481	110.8, 12/7	48	.128	12	24	48	141	GREEN
AGS-5800	.482	.499	#1, 2/5 AWAC	53	.167	10	18	36	76	RED
AGS-5801	.500	.512	3/0, 6/1	53	.167	10	18	36	76	BLUE
AGS-5802	.513	.530	4/0, 7W All-Alum.	53	.167	11	18	36	78	GREEN
AGS-5803	.531	.542	159, 12/7 AWAC	53	.167	11	18	36	78	YELLOW
AGS-5804	.543	.555	2/0, 3/4 AWAC	58	.182	10	18	36	89	BLACK
AGS-5805	.556	.573	4/0, 6/1	58	.182	11	18	36	92	WHITE
AGS-5806	.574	.594	266.8, 7-19W All-Alum.	58	.182	11	18	36	92	BROWN
AGS-5807	.595	.606	266.8, 18/1 AWAC	58	.182	11	18	36	92	ORANGE
AGS-5808	.607	.619	266.8, 18/1	58	.182	11	18	36	92	PURPLE
AGS-5809	.620	.645	266.8, 26/7	66	.182	12	18	36	92	RED
AGS-5810	.646	.673	336.4, 19W All-Alum.	72	.204	11	15	30	98	BLUE
AGS-5811	.674	.690	300, 26/7	72	.204	11	15	30	100	GREEN
AGS-5812	.691	.710	336.4, 26/7 AWAC	72	.204	12	15	30	105	YELLOW
AGS-5813	.711	.731	336.4, 26/7	72	.204	12	15	30	105	BLACK
AGS-5814	.732	.750	336.4, 30/7	72	.204	12	15	30	105	WHITE
AGS-5815	.751	.768	397.5, 26/7 AWAC	78	.250	10	12	24	110	BROWN
AGS-5816	.769	.795	397.5, 26/7	78	.250	11	12	24	110	ORANGE
AGS-5817	.796	.824	397.5, 30/7	78	.250	11	12	24	114	PURPLE
AGS-5818	.825	.845	477, 26/7 AWAC	82	.250	11	12	24	119	RED
AGS-5819	.846	.870	477, 26/7	82	.250	11	12	24	119	BLUE
AGS-5820	.871	.893	477, 30/7	82	.250	12	12	24	126	GREEN
AGS-5821	.894	.907	500, 30/7	82	.250	12	12	24	126	GREEN

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.

(2) Reference general dimensional information for physical dimensions other than length.

(3) ARMOR-GRIP Suspension: Double does not include AGS® FITTINGS, i.e., AGS Socket Eye, AGS Clevis Eye or AGS Y-Clevis Eye. See tables preceding AGS Catalog Information for catalog numbers, prices and dimensions of AGS FITTINGS. Two fittings are required for each ARMOR-GRIP Suspension: Double.

(4) AWAC is a registered trademark of the Copperweld Co.

ARMOR-GRIP® Suspension: Double

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	AGS RODS				AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
	MIN.	MAX.		LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON		
AGS-5822	.908	.920	556.5, 24/7	90	**.250**	12	9	18	133	YELLOW
AGS-5823	.921	.937	556.5, 26/7	90	**.250**	12	9	18	110	BLACK
AGS-5824	.938	.962	556.5, 30/7	90	**.250**	12	9	18	110	WHITE
AGS-5825	.963	.986	605, 26/7	90	**.250**	13	9	18	115	BROWN
AGS-5826	.987	1.005	605, 30/19	90	**.250**	13	9	18	115	ORANGE
AGS-5827	1.006	1.022	636, 30/19	108	**.310**	11	6	12	117	PURPLE
AGS-5828	1.023	1.040	715.5, 24/7	108	**.310**	11	6	12	117	RED
AGS-5829	1.041	1.074	715.5, 26/7	108	**.310**	11	6	12	117	BLUE
AGS-5830	1.075	1.090	715.5, 30/19	108	**.310**	12	6	12	122	GREEN
AGS-5831	1.091	1.118	795, 26/7	108	**.310**	12	6	12	122	YELLOW
AGS-5832	1.119	1.136	900, 45/7	108	**.310**	12	6	12	123	BLACK
AGS-5833	1.137	1.152	795, 30/19	108	**.310**	12	6	12	123	WHITE
AGS-5834	1.153	1.175	900, 54/7	108	**.310**	12	6	12	123	BROWN
AGS-5835	1.176	1.208	954, 54/7	108	**.310**	12	6	12	123	ORANGE
AGS-5836	1.209	1.226	1033.5, 45/7	117	**.365**	11	3	6	86	PURPLE
AGS-5837	1.227	1.259	1033.5, 54/7	117	**.365**	11	3	6	86	RED
AGS-5838	1.260	1.286	1113, 48/7	117	**.365**	12	3	6	90	BLUE
AGS-5839	1.287	1.314	1113, 54/19	117	**.365**	12	3	6	90	GREEN
AGS-5840	1.315	1.355	1192.5, 54/19	117	**.365**	12	3	6	90	YELLOW
AGS-5841	1.356	1.394	1272, 54/19	120	**.365**	12	3	6	96	BLACK
AGS-5842	1.395	1.416	1351.5, 48/7	120	**.365**	13	3	6	100	WHITE
AGS-5843	1.417	1.442	1351.5, 54/19	120	**.365**	13	3	6	100	BROWN
AGS-5844	1.443	1.477	1431, 48/7	120	**.365**	13	3	6	100	ORANGE
AGS-5845	1.478	1.516	1510.5, 54/19	120	**.365**	13	3	6	100	PURPLE
AGS-5846	1.517	1.557	1590, 54/19	120	**.365**	13	3	6	100	RED
AGS-5847	1.558	1.579	1780, 72/7	137	**.365**	14	3	6	125	BLUE
AGS-5848	1.580	1.612	1780, 84/19	137	**.365**	14	3	6	125	GREEN
AGS-5849	1.613	1.650	2000, 91W	137	**.365**	14	3	6	126	YELLOW
AGS-5850	1.651	1.688	2000, 72/7	137	**.365**	15	3	6	131	BLACK
AGS-5851	1.689	1.711	2000, 84/19	137	**.365**	15	3	6	131	WHITE
AGS-5852	1.712	1.752	2129, 84/19	137	**.365**	15	3	6	131	BROWN
AGS-5853	1.753	1.790	2156, 84/19	137	**.365**	15	3	6	131	ORANGE
AGS-5854	1.791	1.828	2300, 84/19	137	**.365**	15	3	6	131	PURPLE

Right-hand lay standard

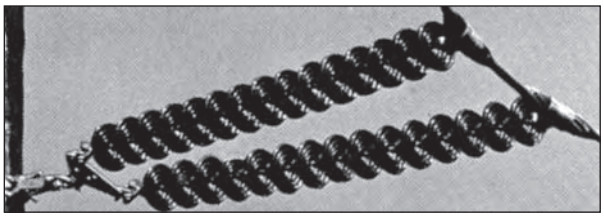
EXPLANATORY NOTES:

(1) Reference previous page for notes.
(2) AWAC is a registered trademark of the Copperweld Co.

ARMOR-GRIP® Suspension: Double (EHV)

With PARROT-BILL® End Rods for Extra High Voltage (EHV), 345 KV and above

For use on:
ACSR, All-Aluminum, Aluminum Alloy, AWAC® Compacted All-Aluminum Compacted ACSR, ACSS (AW & TW) for Continuous Operating Temperatures up to 200˚ C



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	AGS RODS				AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
	MIN.	MAX.		LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON		
AGS-5855	.908	.920	556.5, 24/7	90	**.250**	12	9	18	133	YELLOW
AGS-5856	.921	.937	556.5, 26/7	90	**.250**	12	9	18	110	BLACK
AGS-5857	.938	.962	556.5, 30/7	90	**.250**	12	9	18	110	WHITE
AGS-5858	.963	.986	605, 26/7	90	**.250**	13	9	18	115	BROWN
AGS-5859	.987	1.005	605, 30/19	90	**.250**	13	9	18	115	ORANGE
AGS-5860	1.006	1.022	636, 30/19	108	**.310**	11	6	12	117	PURPLE
AGS-5861	1.023	1.040	715.5, 24/7	108	**.310**	11	6	12	117	RED
AGS-5862	1.041	1.074	715.5, 26/7	108	**.310**	11	6	12	117	BLUE
AGS-5863	1.075	1.090	715.5, 30/19	108	**.310**	12	6	12	122	GREEN
AGS-5864	1.091	1.118	795, 26/7	108	**.310**	12	6	12	122	YELLOW
AGS-5865	1.119	1.136	900, 45/7	108	**.310**	12	6	12	123	BLACK
AGS-5866	1.137	1.152	795, 30/19	108	**.310**	12	6	12	123	WHITE
AGS-5867	1.153	1.175	900, 54/7	108	**.310**	12	6	12	123	BROWN
AGS-5868	1.176	1.208	954, 54/7	108	**.310**	12	6	12	123	ORANGE
AGS-5869	1.209	1.226	1033.5, 45/7	117	**.365**	11	3	6	86	PURPLE
AGS-5870	1.227	1.259	1033.5, 54/7	117	**.365**	11	3	6	86	RED
AGS-5871	1.260	1.286	1113, 48/7	117	**.365**	12	3	6	90	BLUE
AGS-5872	1.287	1.314	1113, 54/19	117	**.365**	12	3	6	90	GREEN
AGS-5873	1.315	1.355	1192.5, 54/19	117	**.365**	12	3	6	90	YELLOW
AGS-5874	1.356	1.394	1272, 54/19	120	**.365**	12	3	6	96	BLACK
AGS-5875	1.395	1.416	1351.5, 48/7	120	**.365**	13	3	6	100	WHITE
AGS-5876	1.417	1.442	1351.5, 54/19	120	**.365**	13	3	6	100	BROWN
AGS-5877	1.443	1.477	1431, 48/7	120	**.365**	13	3	6	100	ORANGE
AGS-5878	1.478	1.516	1510.5, 54/19	120	**.365**	13	3	6	100	PURPLE
AGS-5879	1.517	1.557	1590, 54/19	120	**.365**	13	3	6	100	RED
AGS-5880	1.558	1.579	1780, 72/7	137	**.365**	14	3	6	125	BLUE
AGS-5881	1.580	1.612	1780, 84/19	137	**.365**	14	3	6	125	GREEN
AGS-5882	1.613	1.650	2000, 91W	137	**.365**	14	3	6	126	YELLOW
AGS-5883	1.651	1.688	2000, 72/7	137	**.365**	15	3	6	131	BLACK
AGS-5884	1.689	1.711	2000, 84/19	137	**.365**	15	3	6	131	WHITE
AGS-5885	1.712	1.752	2129, 84/19	137	**.365**	15	3	6	131	BROWN
AGS-5886	1.753	1.790	2156, 84/19	137	**.365**	15	3	6	131	ORANGE
AGS-5887	1.791	1.828	2300, 84/19	137	**.365**	15	3	6	131	PURPLE

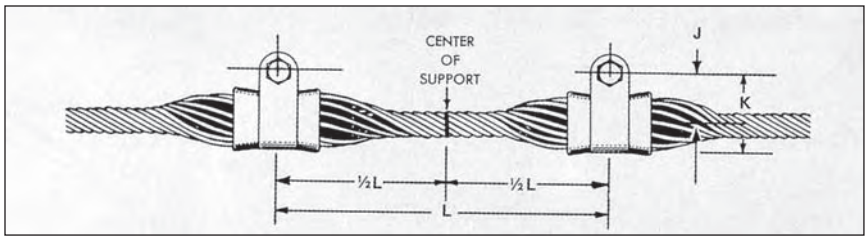
Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) Reference general dimensional information for physical dimensions other than length.
(3) Standard ARMOR-GRIP Suspension does not include AGS® FITTINGS, i.e., AGS Socket Eye, AGS Clevis Eye or AGS Y-Clevis Eye. See tables preceding this AGS Catalog information for catalog numbers and dimensions of AGS FITTINGS.
(4) AWAC is a registered trademark of the Copperweld Co.

ARMOR-GRIP® Suspension: Double

DIMENSIONAL TABLES



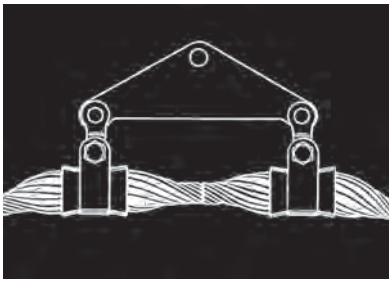
CONDUCTOR RANGE (IN.)		DIMENSIONS, INCHES			VERTCAL ULTIMATE STRENGTH (POUNDS)
MIN.	MAX.	J	K	L	
.304	.389	2-1/32	3-7/32	12	30,000
.390	.481	2-3/32	3-7/32	12	30,000
.482	.542	1-31/32	3-3/16	12	20,000
.543	.619	1-15/16	3-1/4	12	20,000
.620	.645	1-15/16	3-1/4	18	20,000
.646	.750	2-5/32	3-9/16	18	30,000
.751	.907	2-11/32	4	18	40,000
.908	1.005	2-17/32	4-3/8	22	40,000
1.006	1.208	2-45/64	4-25/32	26	50,000
1.209	1.355	3-5/32	5-9/16	29	50,000
1.356	1.557	2-31/32	5-1/2	32	50,000
1.558	1.882	3-3/16	6	37	50,000
1.883	2.233	3-1/2	6-17/32	42	60,000

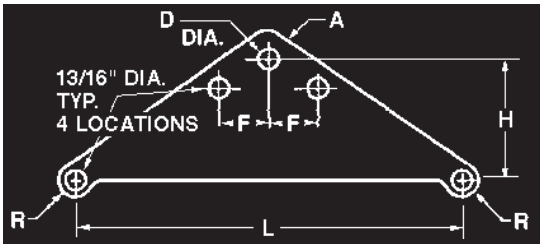
EXPLANATORY NOTES:

(1) AGS® Rod Length and diameter for individual sizes can be taken from catalog number table.
(2) Additional dimensional information of the AGS Housing is tabulated on Dimensional Tables preceding the Armor-Grip Suspension: Double section.

ARMOR-GRIP® Suspension: Fittings and Hardware

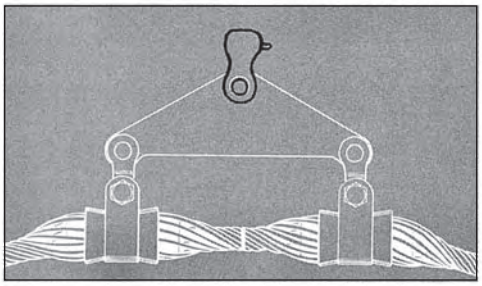
AGS YOKE PLATE

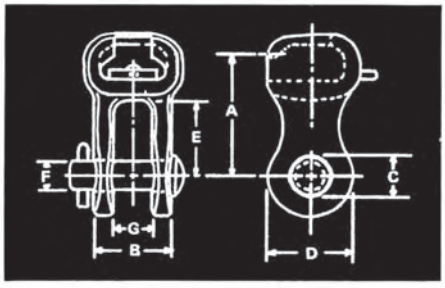




CATALOG NUMBER	DIMENSIONS IN INCHES						PLATE THICKNESS (INCHES)	ULTIMATE STRENGTH (POUNDS)
	L	H	D	R	A	F		
YP-5907	12	4	13/16	13/16	1	NONE	1/2	30,000
YP-5908	18	6-1/4	1	15/16	1-1/4	3-1/2	5/8	40,000
YP-5909	22	7-1/4	1	15/16	1-1/4	4-3/16	5/8	40,000
YP-5910	26	8-1/2	1	15/16	1-1/4	4-15/16	3/4	50,000
YP-5911	29	9-1/2	1	15/16	1-1/4	5-1/2	3/4	50,000
YP-5912	32	10-1/2	1	15/16	1-1/4	6-1/8	3/4	50,000
YP-5913	37	11-3/4	1	15/16	1-1/4	7-1/16	3/4	50,000

AGS SOCKET CLEVIS

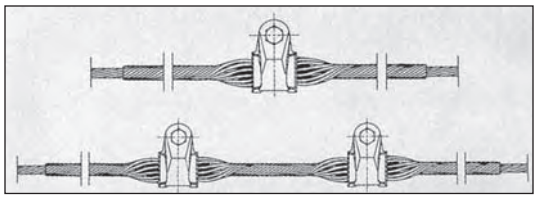




CATALOG NUMBER	GENERAL DIMENSIONS							ULTIMATE STRENGTH (POUNDS)	FOR USE WITH SPECIFIC STRENGTH INSULATORS (POUNDS)
	A IN.	B IN.	C IN.	D IN.	E IN.	F IN.	G IN.		
SC-5194	2-5/8	1-9/16	11/16	1-3/4	1-5/8	5/8	13/16	30,000	15,000 thru 30,000
SC-5329	3-1/4	-	-	2-3/16	2-1/16	7/8	1-1/8	50,000	36,000 thru 50,000

ARMOR-GRIP® Suspension

For use on:
Galvanized Steel Strand



CATALOG NUMBER	STRAND SIZE	DIAMETER RANGE (INCHES)		AGS RODS				AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
		MIN.	MAX.	LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON		
AGS-7097 AGS-7797	9/32", 7W	.272	.283	26(S) 38(D)	.119	8	24 24	24 24(3)	63 113	Blue
AGS-7098 AGS-7798	-	.284	.294	26(S) 38(D)	.119	9	24 24	24 24(3)	63 113	Red
AGS-7099 AGS-7799	-	.295	.303	26(S) 38(D)	.119	9	24 24	24 24(3)	63 113	Brown
AGS-7100 AGS-7800	5/16", 7W EHS	.304	.315	26(S) 38(D)	.119	9	24 24	24 24(3)	63 113	Black
AGS-7101 AGS-7801	5/16", 7W UTILITY	.316	.327	26(S) 38(D)	.119	9	24 24	24 24(3)	63 113	Green
AGS-7102 AGS-7802	-	.328	.342	26(S) 38(D)	.119	10	24 24	24 24(3)	66 118	Purple
AGS-7103 AGS-7803		.343	.355	26(S) 38(D)	.119	10	24 24	24 24(3)	66 118	Brown
AGS-7104 AGS-7804	3/8", 7W EHS	.356	.374	26(S) 38(D)	.119	10	24 24	24 24(3)	66 119	Orange
AGS-7105 AGS-7805	-	.375	.389	26(S) 38(D)	.119	10	24 24	24 24(3)	66 119	Blue
AGS-7106 AGS-7806	-	.390	.404	36(S) 48(D)	.138	10	24 24	24 24(3)	88 148	Red
AGS-7107 AGS-7807	-	.405	.418	36(S) 48(D)	.138	10	24 24	24 24(3)	88 148	Brown
AGS-7108 AGS-7808	-	.419	.434	36(S) 48(D)	.138	11	24 24	24 24(3)	92 154	Black
AGS-7109 AGS-7809	7/16", 7W EHS	.435	.450	36(S) 48(D)	.138	11	24 24	24 24(3)	92 154	Green
AGS-7110 AGS-7810	-	.451	.470	36(S) 48(D)	.138	11	24 24	24 24(3)	94 156	Purple
AGS-7111 AGS-7811	-	.471	.481	36(S) 48(D)	.138	11	24 24	24 24(3)	94 156	Brown
AGS-7112 AGS-7812	1/2", 7W-19W	.482	.500	45(S) 57(D)	.138	12	24 24	24 24(3)	103 160	Blue

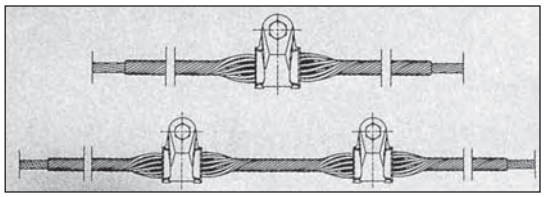
Left Hand Lay Standard

EXPLANATORY NOTES:

(1) Caution – **Nominal** strand diameter may be different than **actual** strand diameter. Use actual strand diameter to select Cat. Nos. Strand Size indicates one of various strands within each range.
(2) "S" – Single support to be used on line angles between 0˚ and 30˚. "D" – Double support to be used on line angles between 30˚ and 60˚.
(3) For double support, two cartons of hardware are required for each carton of rods.

ARMOR-GRIP® Suspension

For use on:
Aluminum Clad Steel



CATALOG NUMBER	STRAND SIZE	DIAMETER RANGE (INCHES)		AGS RODS				AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
		MIN.	MAX.	LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON		
AGS-8097 AGS-8797	3 #8, 8M 9/32", 7W	.272	.283	26(S) 38(D)	.114	9	24 24	24 24(3)	57 106	Blue
AGS-8098 AGS-8798	-	.284	.294	26(S) 38(D)	.114	9	24 24	24 24(3)	57 106	Red
AGS-8099 AGS-8799	-	.295	.303	26(S) 38(D)	.114	9	24 24	24 24(3)	57 106	Black
AGS-8100 AGS-8800	3 #7, 7 #10 10M	.304	.315	26(S) 38(D)	.114	9	24 24	24 24(3)	57 106	Brown
AGS-8101 AGS-8801	5/16", 3W, 7W	.316	.327	26(S) 38(D)	.114	10	24 24	24 24(3)	59 108	Purple
AGS-8102 AGS-8802	-	.328	.342	26(S) 38(D)	.114	10	24 24	24 24(3)	60 110	Green
AGS-8103 AGS-8803	3 #6, 7 #9 12.5M	.343	.355	26(S) 38(D)	.114	10	24 24	24 24(3)	60 110	Black
AGS-8104 AGS-8804	14M 3/8"	.356	.374	26(S) 38(D)	.114	10	24 24	24 24(3)	60 111	Brown
AGS-8105 AGS-8805	7 #8, 16M	.375	.389	26(S) 38(D)	.114	11	24 24	24 24(3)	62 113	Red
AGS-8106 AGS-8806	3 #5	.390	.404	26(S) 38(D)	.144	10	24 24	24 24(3)	84 142	Blue
AGS-8107 AGS-8807	18M	.405	.418	26(S) 38(D)	.144	10	24 24	24 24(3)	84 142	Orange
AGS-8108 AGS-8808	7 #7	.419	.434	26(S) 38(D)	.144	10	24 24	24 24(3)	84 142	Brown
AGS-8109 AGS-8809	20M	.435	.450	26(S) 38(D)	.144	10	24 24	24 24(3)	84 142	Purple
AGS-8110 AGS-8810	-	.451	.470	26(S) 38(D)	.144	11	24 24	24 24(3)	89 150	Green
AGS-8111 AGS-8811	-	.471	.481	26(S) 38(D)	.144	11	24 24	24 24(3)	89 150	Black
AGS-8112 AGS-8812	7 #6	.482	.500	26(S) 38(D)	.144	11	24 24	24 24(3)	95 149	Blue

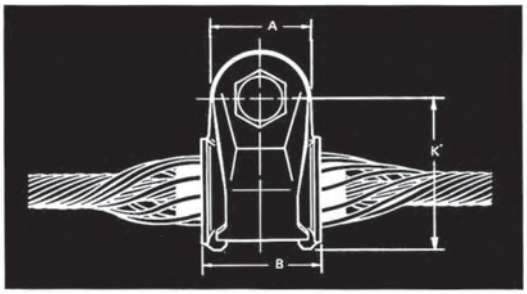
Left-hand lay standard

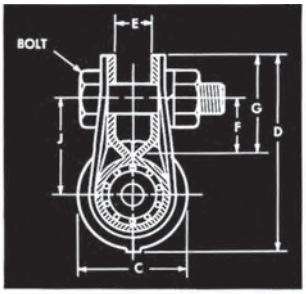
EXPLANATORY NOTES:

(1) Strand size indicates one of various strands within each range.
(2) "S" – Single support to be used on line angles between 0˚ and 30˚. "D" – Double support to be used on line angles between 30˚ and 60˚.
(3) For double support, two cartons of hardware are required for each carton of rods.

ARMOR-GRIP® Suspension

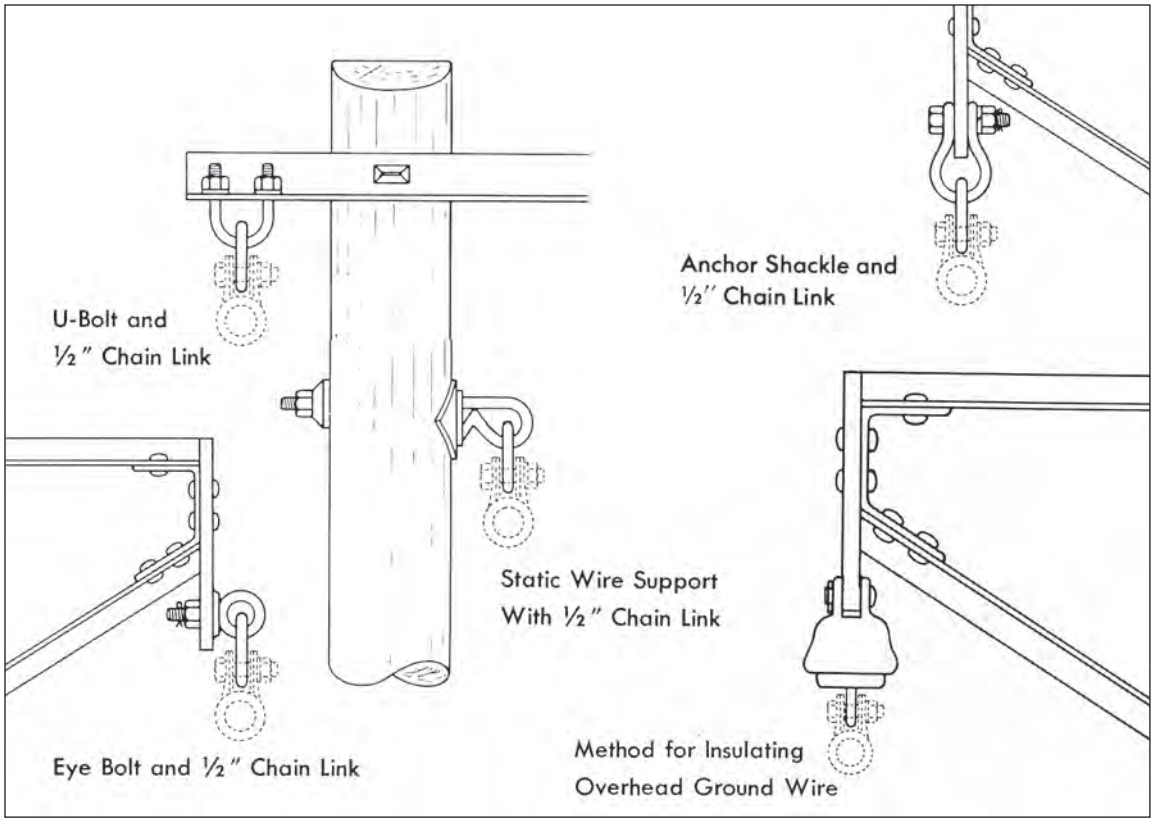
DIMENSIONAL TABLES





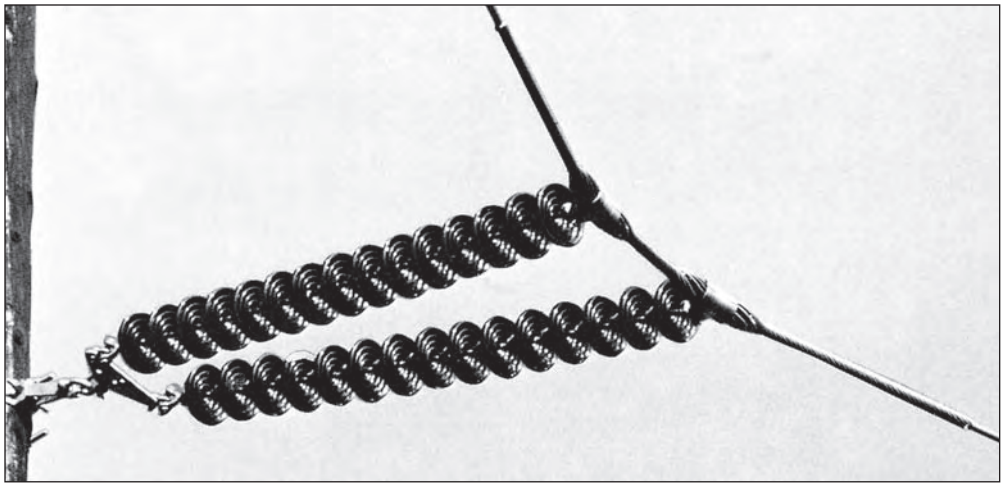
STRAND RANGE		DIMENSIONS IN INCHES										VERTICAL ULTIMATE STRENGTH (POUNDS)
MIN. (IN.)	MAX. (IN.)	A	B	C	D	E	F	G	J	K	BOLT	
.272	.389	1-3/4	2-1/4	2-1/16	4-3/32	11/16	1-5/32	2-1/32	2-1/32	3-7/32	5/8 x 2-1/2	15,000
.390	.500	1-3/4	2-1/2	2-1/4	4-3/32	11/16	1-3/32	1-31/32	2-3/32	3-7/32	5/8 x 2-1/2	15,000

SUGGESTED SUSPENSION HARDWARE



ARMOR-GRIP® Suspension

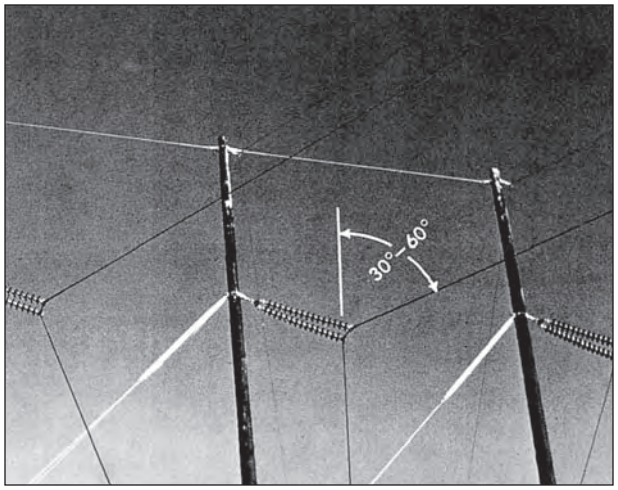
DESIGN MODIFICATIONS



For line angles between 30˚ and 60˚, use the double support arrangement with the insulator strings connected directly to the ARMOR-GRIP Suspension.

Shown is a close-up picture of the 30˚ - 60˚ double support arrangement.

Shown below is the ARMOR-GRIP Suspension: Double as used for line angles between 30˚ and 60˚.

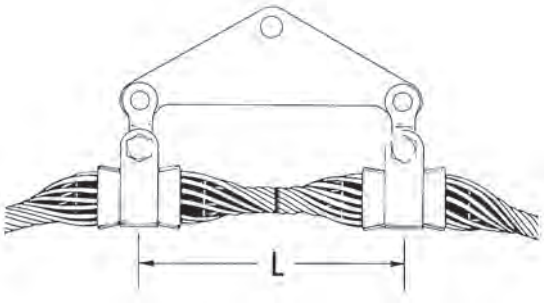


Shown below is the ARMOR-GRIP Suspension: Single as used for line angles between 0˚ and 30˚.



ALTERNATE METHOD–Double Support–Single String–with Yoke Plate

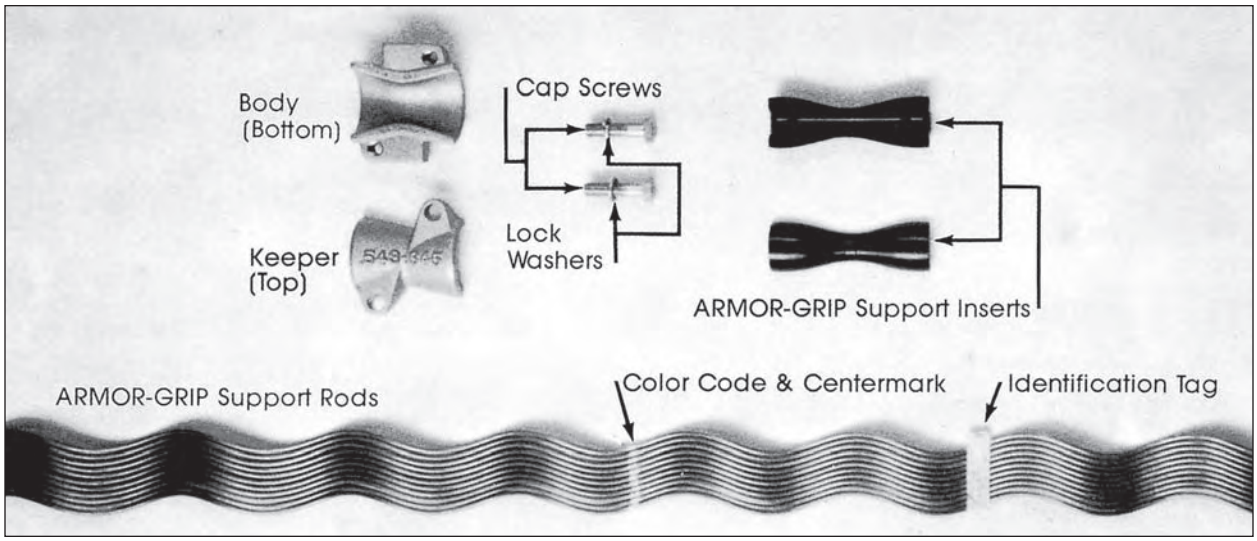
A single string of insulators and yoke plate may be used as an alternate method for suspending the ARMOR-GRIP Suspension: Double. The yoke plate must have the proper "L" dimension. Please refer to previous Fitting and Hardware tables to obtain dimensional information and catalog numbers of available yoke plates.



ARMOR-GRIP® Support

NOMENCLATURE

Thermal Rating (Continuous) 200°C



ARMOR-GRIP Support Keeper: Aluminum alloy casting. Comprises the top half of the ARMOR-GRIP Support housing unit. The conductor range is cast on the outside of the Keeper.

ARMOR-GRIP Support Body: Ductile iron casting. Comprises the bottom half of the ARMOR-GRIP Support housing unit. The conductor range is cast into the inside of the body.

ARMOR-GRIP Cap Screws and Lock Washers: Galvanized steel.

ARMOR-GRIP Support Inserts: An elastomer specifically formulated for resistance to ozone attack, weathering, extreme high and low temperature variations, and compression set. An aluminum alloy reinforcement is molded into the elastomer.
The conductor range is molded into the inside of each insert.



ARMOR-GRIP Support Rods: Aluminum covered steel for aluminum based conductor diameter range .390" to .481". Aluminum alloy for aluminum based conductor diameter range .482" to 1.828". Standard rod ends are supplied for sub-EHV applications and Parrot Bill® rod ends are supplied for EHV applications.

Color Code: Identifies conductor diameter range.

Center Mark: Identifies starting location and center of rods during installation.

Identification Tag: Identifies rod material, conductor type and diameter range.

Special Note about Conductor Range: Each ARMOR-GRIP Support housing unit has a wide conductor range and is an overlapping design that incorporates several different pairs of inserts and sets of rods. Each pair of inserts has a narrow conductor range and will accommodate a few different sets of rods. Each set of rods has a very narrow conductor range and is designed for use only on the size conductor listed on the ID tag.

GENERAL RECOMMENDATIONS

ARMOR-GRIP Support, intended for use on aluminum based conductors with a diameter range of .390" to 1.828", is designed to be used with clamp-top horizontal and vertical line post insulators.

The ARMOR-GRIP Support is designed to reduce static and dynamic stress at the support point, so that the conductor is better able to withstand the effects of vibration than with armor-clamp attachments. It also helps protect the conductor in the support area against flashover.

While ARMOR-GRIP Support provides improved protection against vibration fatigue of the conductor, on some lines vibration may be so severe that the use of vibration dampers may be necessary. Utilities that have experienced vibration or expect to should consider adding dampers. Consult PLP for general guidelines and recommendations concerning vibration and dampers.

Unbalanced Loading. The ARMOR-GRIP Support will withstand an unbalanced load of approximately 10 to 20% of the conductor RBS before initial slip occurs. Slightly higher unbalanced loads will be obtained after the unit has been in service for a period of time.

ARMOR-GRIP® Support

Mechanical Strength. The ARMOR-GRIP Support will withstand a pulloff load from the trunnion pins of the insulator cap of 5,000 lbs. applied in any direction. This includes the vertical up direction so that the unit will withstand an uplift load. Since the bore of the unit is symmetrical throughout the entire 360˚ range, a radial conductor load may be applied safely in any direction.

Line Angles. A maximum line angle of 30˚ may be turned using a single ARMOR-GRIP Support, and a maximum of 60˚ using a Double-Support unit.

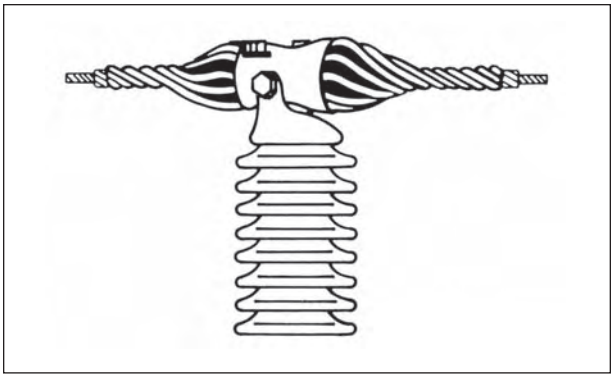
ARMOR-GRIP Support: Double. A special ARMOR-GRIP Support is available for applications utilizing a double support. The minimum distance between the double support points is listed on the next page. Contact PLP® for an engineering recommendation and additional information when considering use of the Double-Support unit.

Loading Consideration. In the work of line design, it should be considered that the cantilever strength of the insulator may be the governing factor, rather than the strength rating of the ARMOR-GRIP Support for unbalanced loading, mechanical strength, and turning angles.

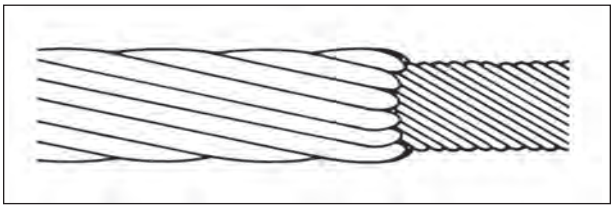
Unusual Line Conditions. The ARMOR-GRIP Support may be rotated vertically on the trunnion pins a maximum of 15˚ before the bottom of the unit interferes with the insulator cap. This should be considered for those terrain conditions, such as a steep side hill, which might result in the unit being installed at an angle from the horizontal.

DESIGN MODIFICATIONS

1. **ARMOR-GRIP Support for line repair.** For repair of fatigue damaged conductors, a specially designed ARMOR-GRIP Support can be applied over PREFORMED™ type armor rods to extend the life of the conductor. Wrench formed rods must be removed when conductor fatigue occurs under them. A splice is then applied to the fatigued area and the ARMOR-GRIP Support is applied over the splice. This type of application requires special consideration and PLP should be consulted for a technical evaluation.



2. **EHV Applications.** To meet the corona onset and RIV requirements for most extra high voltage applications, Parrot Bill® ends are to be used instead of standard rods. Consult PLP for EHV engineering recommendations.



INSTALLATION GUIDELINES

1. **Conductor compatibility.** ARMOR-GRIP Support should be used only on the size and type of conductor for which they are designed. ARMOR-GRIP Support is designed for right-hand lay conductor. Consult PLP when using types and/or sizes of conductor not mentioned on the catalog pages.
2. During installation of the ARMOR-GRIP Support keeper to the body, the cap screw should be tightened **only** until the lockwasher is flat. A relatively low torque value of approximately **10 to 15 foot** pounds is sufficient to flatten the washer. The inherent gripping of the rods provides the majority of the unbalanced holding strength of the unit. **Further tightening may damage the keeper of the body.**
3. Consult the ARMOR-GRIP Support Application Procedure for additional information regarding the correct installation of ARMOR-GRIP Support.
4. ARMOR-GRIP Support rods are **not** interchangeable with either standard armor rods or ARMOR-GRIP Suspension rods.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. However, all components, except for the rods, may be reused if in good condition. CAUTION: DO NOT MODIFY OR REUSE THE RODS UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

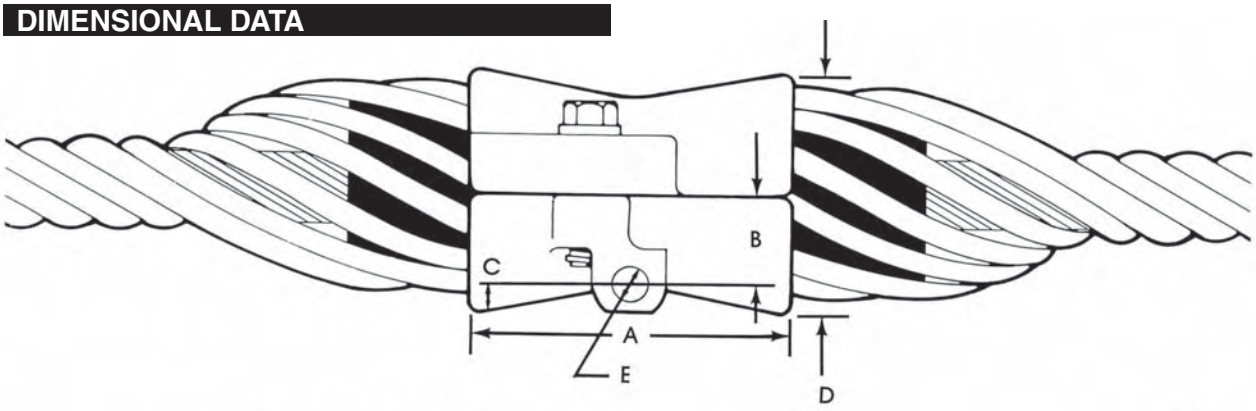
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size ARMOR-GRIP Support before application.

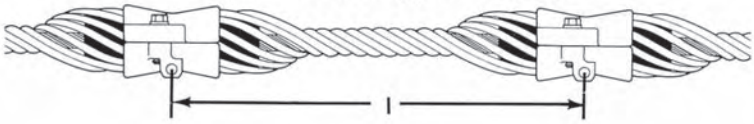
5. ARMOR-GRIP Supports are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

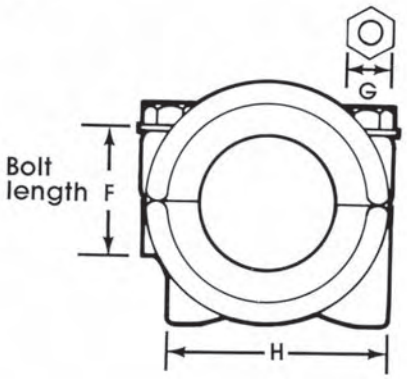
ARMOR-GRIP® Support

DIMENSIONAL DATA



ARMOR-GRIP Support: Double



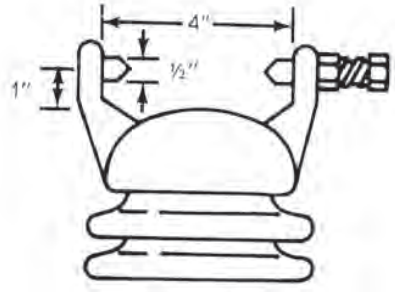


Minimum distances between support points are listed. Field conditions may require greater distances, which will require longer rods. All Double ARMOR-GRIP Support applications are supplied and engineered on a special order basis to insure proper rod length and performance.

CONDUCTOR RANGES (INCHES)	DIMENSIONS IN INCHES								
	A	B	C	D	E	F	G	H	I
.390-.481	2-17/32	5/8	49/64	1-61/64	19/32	2	3/4	3-7/8	12
.482-.542	3	5/8	1	2-3/8	19/32	2	3/4	3-7/8	12
.543-.619	3-1/8	13/32	7/8	2-17/32	19/32	2	3/4	3-7/8	12
.620-.645	3-1/8	13/32	7/8	2-17/32	19/32	2	3/4	3-7/8	18
.646-.750	3-3/4	5/8	53/64	2-3/4	19/32	2	3/4	3-7/8	18
.751-.907	4-1/2	3/4	27/32	3-13/64	19/32	2-1/4	3/4	3-7/8	18
.908-1.005	5	1-1/8	21/32	3-19/32	19/32	2-1/4	3/4	3-7/8	22
1.006-1.208	5-1/2	1-5/16	13/16	4-3/16	19/32	2-1/4	3/4	3-7/8	26
1.209-1.355	6	1-1/2	13/16	4-5/8	19/32	2-1/4	3/4	3-7/8	29
1.356-1.557	6-1/2	1-5/8	29/32	5-7/64	19/32	2-1/4	3/4	3-7/8	32
1.558-1.828	7	1-15/16	49/64	5-13/32	19/32	2-1/4	3/4	3-7/8	37

CLAMP TOP TRUNNION

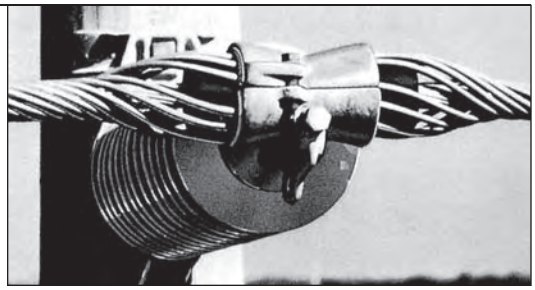
To insure proper fit and service life, it is recommended that only line post insulators with clamp top trunnion caps that conform to ANSI standards be used. See the illustration on the right for nominal cap dimensions that illustrate ANSI standards that have been established outlining the permissible dimensions and tolerances for trunnion caps. Consult the insulator manufacturer when in doubt about insulator standards.



The above dimensions are approximates for design information. Consult ANSI specification C29.7-1977 for exact dimensions.

ARMOR-GRIP® Support

For use on:
ACSR, All-Aluminum, Aluminum Alloy, AWAC® Compacted All-Aluminum Compacted ACSR, ACSS (AW & TW) for Continuous Operating Temperatures up to 200˚ C



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	AGS RODS LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	AGS HARDWARE SETS PER CARTON	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
AGS-5265	.390	.404	1/0, 6/1	36	.128	11	24	24	70	Yellow
AGS-5266	.405	.418	1/0, 5/1 AWAC	36	.128	11	24	24	70	Brown
AGS-5267	.419	.434	#1, 3/4 AWAC	36	.128	11	24	24	70	Green
AGS-5268	.435	.450	2/0, 6/1	36	.128	11	24	24	70	Blue
AGS-5269	.451	.470	2/0, 5/2 AWAC	36	.128	12	24	24	72	White
AGS-5270	.471	.481	110.8, 12/7	36	.128	12	24	24	72	Green
AGS-5255	.482	.499	#1, 2/5 AWAC	30	.167	10	18	18	40	Red
AGS-5200	.500	.512	3/0, 6/1	30	.167	10	18	18	40	Blue
AGS-5201	.513	.530	4/0, 7W All-Alum.	30	.167	11	18	18	41	Green
AGS-5202	.531	.542	1/0, 2/5, AWAC	30	.167	11	18	18	41	Yellow
AGS-5203	.543	.555	2/0, 3/4, AWAC	34	.182	10	18	18	53	Black
AGS-5204	.556	.573	4/0, 6/1	34	.182	11	18	18	54	White
AGS-5205	.574	.594	266.8, 7-19W All-Alum.	34	.182	11	18	18	54	Brown
AGS-5206	.595	.606	266.8, 18/1 AWAC	34	.182	11	18	18	55	Orange
AGS-5207	.607	.619	266.8, 18/1	34	.182	11	18	18	55	Purple
AGS-5208	.620	.645	266.8, 26/7	38	.182	12	18	18	58	Red
AGS-5209	.646	.673	336.4, 19-37W All-Alum.	41	.204	11	15	15	61	Blue
AGS-5210	.674	.690	300, 26/7	41	.204	11	15	15	61	Green
AGS-5211	.691	.710	300, 30/7	41	.204	12	15	15	63	Yellow
AGS-5212	.711	.731	366.4, 26/7	41	.204	12	15	15	63	Black
AGS-5213	.732	.750	336.4, 30/7	41	.204	12	15	15	63	White
AGS-5214	.751	.768	397.5, 26/7 AWAC	45	.250	10	12	12	65	Brown
AGS-5215	.769	.795	397.5, 26/7	45	.250	11	12	12	68	Orange
AGS-5216	.796	.824	477, 18/1	45	.250	11	12	12	68	Purple
AGS-5217	.825	.845	477, 26/7 AWAC	48	.250	11	12	12	70	Red
AGS-5218	.846	.870	477, 26/7	48	.250	11	12	12	70	Blue
AGS-5219	.871	.893	600, 37W All-Alum.	48	.250	12	12	12	73	Green
AGS-5220	.894	.907	500, 30/7	48	.250	12	12	12	73	Green
AGS-5221	.908	.920	556.5, 24/7	53	.250	12	9	9	66	Yellow
AGS-5222	.921	.937	556.5, 26/7	53	.250	12	9	9	66	Black
AGS-5223	.938	.962	605, 24/7	53	.250	12	9	9	66	White
AGS-5224	.963	.986	636, 24/7	53	.250	13	9	9	68	Brown
AGS-5225	.987	1.005	636, 26/7	53	.250	13	9	9	68	Orange
AGS-5226	1.006	1.022	636, 30/19	62	.310	11	6	6	64	Purple
AGS-5227	1.023	1.040	795, 37-61W All-Alum.	62	.310	11	6	6	64	Red
AGS-5228	1.041	1.074	715.5, 26/7	62	.310	11	6	6	64	Blue

Right-hand lay standard

(Continued on next page)

ARMOR-GRIP® Support

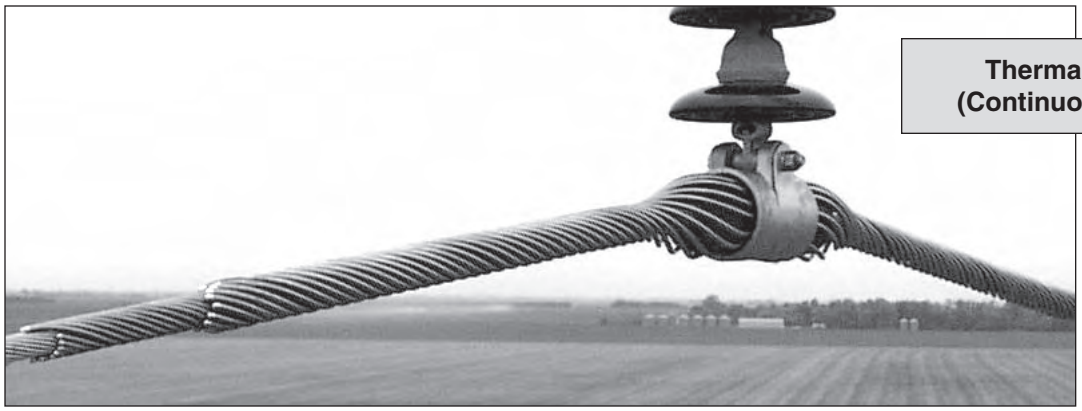
CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	AGS RODS				AGS HARDWARE	AGS RODS & HARDWARE WT./LBS. PER CARTON	COLOR CODE
	MIN.	MAX.		LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	SETS PER CARTON	SETS PER CARTON		
AGS-5229	1.075	1.090	874.5, 37W All-Alum.	62	.310	12	6	6	67	Green
AGS-5230	1.091	1.118	795, 26/7	62	.310	12	6	6	67	Yellow
AGS-5231	1.119	1.136	954, 37W All-Alum.	62	.310	12	6	6	67	Black
AGS-5232	1.137	1.152	795, 30/19	62	.310	12	6	6	67	White
AGS-5233	1.153	1.175	954, 45/7	62	.310	12	6	6	67	Brown
AGS-5234	1.176	1.208	954, 54/7	62	.310	12	6	6	67	Orange
AGS-5235	1.209	1.226	1113, 61W All-Aum.	71	.365	11	3	3	47	Purple
AGS-5236	1.227	1.259	1192.5, 61W All-Alum.	71	.365	11	3	3	47	Red
AGS-5237	1.260	1.286	1113, 48/7	71	.365	12	3	3	49	Blue
AGS-5238	1.287	1.314	1272, 61W All-Alum.	71	.365	12	3	3	49	Green
AGS-5239	1.315	1.355	1272, 45/7	71	.365	12	3	3	49	Yellow
AGS-5240	1.356	1.394	1272, 54/19	78	.365	12	3	3	51	Black
AGS-5241	1.395	1.416	1351.5, 54/19 AWAC	78	.365	13	3	3	54	White
AGS-5242	1.417	1.442	1510.5, 61W All-Alum	78	.365	13	3	3	54	Brown
AGS-5243	1.443	1.477	1431, 54/19	78	.365	13	3	3	54	Orange
AGS-5244	1.478	1.516	1590, 45/7	78	.365	13	3	3	54	Purple
AGS-5245	1.517	1.557	1590, 54/19	78	.365	13	3	3	54	Red
AGS-5246	1.558	1.579	1780, 72/7	90	.365	14	3	3	61	Blue
AGS-5247	1.580	1.612	1780, 84/19	90	.365	14	3	3	61	Green
AGS-5248	1.613	1.650	2000, 91W All-Alum.	90	.365	14	3	3	61	Yellow
AGS-5249	1.651	1.688	2000, 72/7	90	.365	15	3	3	64	Black
AGS-5250	1.689	1.711	2000, 84/19	90	.365	15	3	3	64	White
AGS-5251	1.712	1.752	2129, 84/19	90	.365	15	3	3	64	Brown
AGS-5252	1.753	1.790	2156, 84/19	90	.365	15	3	3	64	Orange
AGS-5253	1.791	1.828	2300, 84/19	90	.365	15	3	3	64	Purple

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) Reference general dimensional information for physical dimensions other than length.
(3) AGS weights listed are approximate and include packaging.
(4) An ARMOR-GRIP Support unit is comprised of a set of rods with a matched hardware assembly. The rods and assemblies are packaged in separate but corresponding cartons.
(5) AWAC is a registered trademark of the Copperweld Co.

THERMOLIGN® Suspension



Thermal Rating (Continuous) 250°C

GENERAL RECOMMENDATIONS

The THERMOLIGN Suspension is specifically designed for applications on aluminum based high temperature conductors that will be operated at continuous temperatures **ABOVE** 200^0 C, and features:

- Multi-layer design for maximum mechanical performance and maximum heat dissipation.
- Minimal heat transfered to mating hardware and insulators.
- Cushioned insert surrounding conductor for superior protection of sensitive conductor components against wind and ice induced dynamic loads.
- Available with PARROT-BILL® Rod ends for EHV (345 KV and above) applications.

GENERAL SPECIFICATIONS

Vertical Strength: 25,000# (111kN) unless otherwise noted.

Slip Load: Approximately 20% of the conductor RBS initially (expected to increase after time in service).

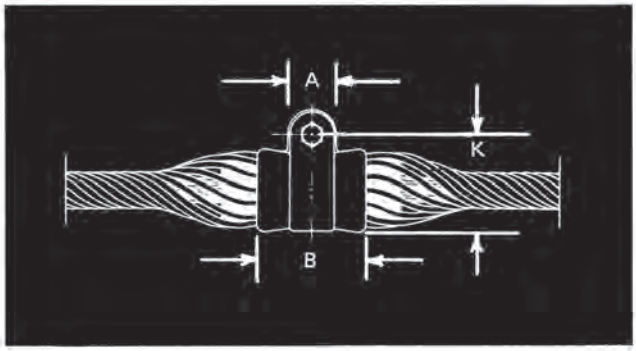
Line Angle: Maximum of 30^0 for single suspension up to 60^0 for double suspension with yoke plate.

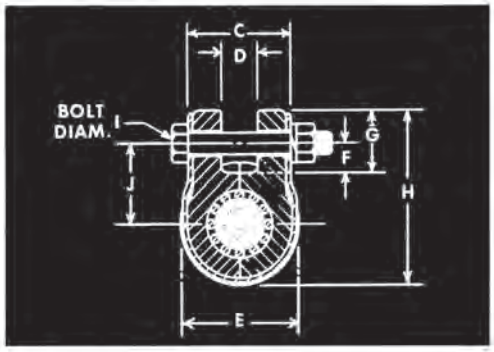
NOTE:
Add EHV to Catalog Number for PARROT-BILL Rod Ends.
Example: TLS-0100-EHV
Add CE to Catalog Number to include a Clevis Eye
Add YC to Catalog Number to include a Y Clevis Eye
Add SE to Catalog Numbers to include a Socket Eye

Catalog Number		Diameter Range				Nominal	Length (overall)				Color Code	
Single	Double	Min (in)	Max (in)	Min (mm)	Min (mm)	Cond (kcmil)	Sgl (in)	Dbl (in)	Sgl (m)	Dbl (m)	Inner	Outer
TLS-0096	TLS-0296	0.709	0.726	18.0	18.4	336.4	100	129	2.54	3.28	Green	Purple
TLS-0097	TLS-0297	0.727	0.759	18.5	19.3	336.4	100	129	2.54	3.28	Pink	Red
TLS-0098	TLS-0298	0.760	0.786	19.3	20.0	397.5	100	129	2.54	3.28	White	Blue
TLS-0099	TLS-0299	0.787	0.814	20.0	20.7	3925, 477	100	129	2.54	3.28	Purple	Green
TLS-0100	TLS-0300	0.815	0.855	20.7	21.7	477	100	129	2.54	3.28	Red	Yellow
TLS-0101	TLS-0301	0.856	0.894	21.7	22.7	477, 556	100	132	2.54	3.35	Blue	Black
TLS-0102	TLS-0302	0.895	0.916	22.7	23.3	556	100	132	2.54	3.35	Black	White
TLS-0103	TLS-0303	0.917	0.942	23.3	23.9	556	100	132	2.54	3.35	Orange	Brown
TLS-0104	TLS-0304	0.943	0.977	23.9	24.8	605, 636	100	132	2.54	3.35	Green	Orange
TLS-0105	TLS-0305	0.978	1.016	24.8	25.8	636	100	132	2.54	3.35	Pink	Purple
TLS-0106	TLS-0306	1.017	1.057	25.8	26.8	636, 715	100	132	2.54	3.35	Purple	Red
TLS-0107	TLS-0307	1.058	1.079	26.8	27.4	715	112	149	2.84	3.78	White	Blue
TLS-0108	TLS-0308	1.080	1.112	27.4	28.2	795	112	149	2.84	3.78	White	Green
TLS-0109	TLS-0309	1.113	1.150	28.2	29.2	795, 954	112	149	2.84	3.78	Yellow	Yellow
TLS-0110	TLS-0310	1.151	1.188	29.2	30.2	954	112	149	2.84	3.78	Yellow	Black
TLS-0111	TLS-0311	1.189	1.208	30.2	30.7	954	112	149	2.84	3.78	Yellow	White
TLS-0112	TLS-0312	1.209	1.262	30.7	32.1	1033.5	125	154	3.18	3.91	Brown	Red
TLS-0113	TLS-0313	1.263	1.308	32.1	33.2	1113, 1192.5	125	154	3.18	3.91	Brown	Blue
TLS-0114	TLS-0314	1.309	1.338	33.2	34.0	1192.5	125	154	3.18	3.91	Red	Green
TLS-0115	TLS-0315	1.339	1.368	34.0	34.7	1272	125	154	3.18	3.91	Red	Yellow
TLS-0116	TLS-0316	1.369	1.409	34.7	35.7	1272, 1351.5	125	154	3.18	3.91	Blue	Black
TLS-0117	TLS-0317	1.410	1.449	35.7	36.8	1351.5, 1431	125	154	3.18	3.91	Black	White
TLS-0118	TLS-0318	1.450	1.490	36.8	37.9	1431, 1510.5	125	154	3.18	3.91	Orange	Brown
TLS-0119	TLS-0319	1.491	1.530	37.9	38.9	1510.5, 1590	125	154	3.18	3.91	Green	Orange
TLS-0120	TLS-0320	1.531	1.572	38.9	39.9	1590	125	154	3.18	3.91	Pink	Purple

THERMOLIGN® Suspension

DIMENSIONAL TABLES





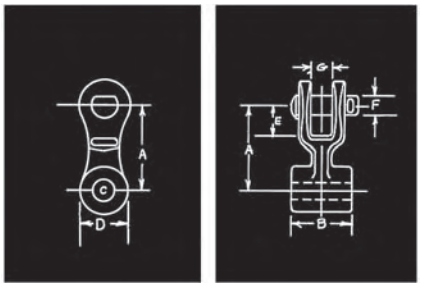
Catalog Number Range		Contor Range (Inches)		Dimension (Inches)											Vertical Ultimate Strength (Pounds)
		Min	Max	A	B	C	D	E	F	G	H	I	J	K	
TLS-0096	TLS-0100	0.709	0.855	2-1/4	6	3-5/8	1-1/4	4-13/16	1-1/4	2-3/8	6-11/16	3/4	3-5/32	5-9/16	25,000
TLS-0101	TLS-0106	0.856	1.057	2-1/4	6-1/2	4-1/8	1-3/8	5-1/16	1-1/8	2-1/4	6-5/8	3/4	2-31/32	5-1/2	25,000
TLS-0107	TLS-0112	1.058	1.262	2-1/2	7	4-11/16	2-1/4	5-19/32	1-1/8	2-3/8	7-1/4	3/4	3-3/16	6	25,000
TLS-0113	TLS-0120	1.263	1.613	2-1/2	7-1/2	5-7/32	2-13/32	6-1/16	1-3/16	2-7/16	7-25/32	3/4	3-1/2	6-17/32	30,000 (1)

EXPLANATORY NOTE:

(1) CE-5106 and YC-5211 are rated at 25,000 lbs. vertical ultimate strength.

THERMOLIGN® Suspension

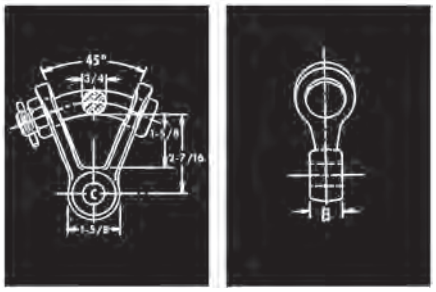
CLEVIS EYE



Catalog Number	Diameter Range (mm)	Dimensions (mm)						
		A	B	C	D	E	F	G
CE-5105	.709 - 1.057" (20.7 - 26.8)	3-1/8" (79)	1-1/16" (27)	13/16" (21)	1-1/2" (38)	1-1/2" (38)	5/8" (16)	13/16" (21)
CE-5106	1.058" -1.572" (26.8 - 39.9)	3-1/8" (79)	2-1/8" (54)	13/16" (21)	1-1/2" (38)	1-1/2" (38)	5/8" (16)	13/16" (21)

Vertical Ultimate Strength - 25,000 lbs.

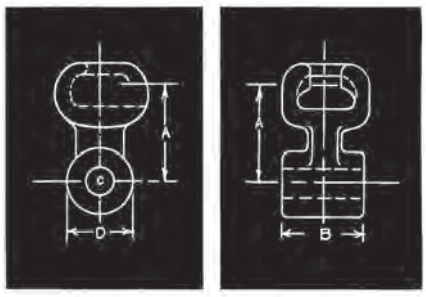
Y CLEVIS EYE



Catalog Number	Diameter Range (mm)	Dimensions (mm)	
		B	C
YC-5209	.709 - 1.057 (20.7 - 26.8)	1-1/16 (27)	13/16 (21)
YC-5211	1.058 - 1.572 (26.8 - 39.9)	2-1/8 (54)	13/16 (21)

Vertical Ultimate Strength - 25,000 lbs.

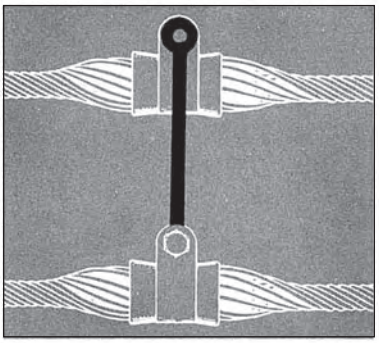
SOCKET EYE

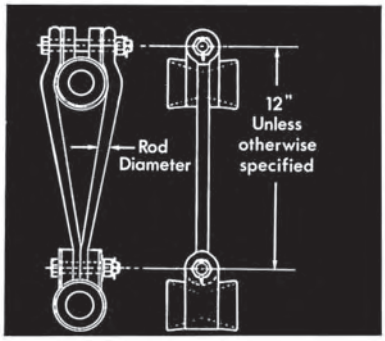


Catalog Number	Diameter Range (mm)	Dimensions (mm)				Vertical Ultimate Strength
		A	B	C	D	
SE-5154	.709" - 1.057" (20.7 - 26.8)	2-5/16" (59)	1-1/6" (27)	13/16" (21)	1-1/2" (38)	25,000 lbs
SE-5155	1.058" - 1.572" (26.8 - 39.9)	2-5/16" (59)	2-1/8" (54)	13/16" (21)	1-1/2" (38)	30,000 lbs

THERMOLIGN® Suspension

VERTICAL BUNDLING LINK ASSEMBLY



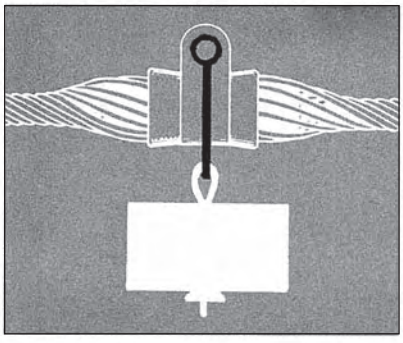


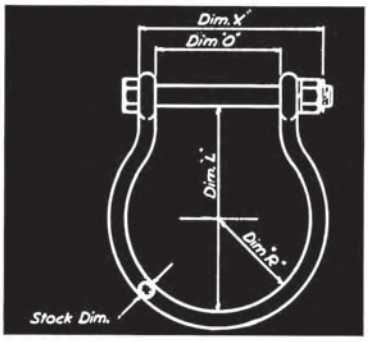
ULTIMATE RATED
STRENGTH 12,500 LBS./LINK

THERMOLIGN SUSPENSION CONDUCTOR DIAMETER RANGE (INCHES)	HUGHES BROTHERS STOCK NO †	ROD DIAMETER (INCHES)	BOLT DIAMETER (INCHES)	CENTER TO CENTER OF EYES (INCHES)
0.709 - 0.855	1701.7	5/8	3/4	12
0.856 - 1.057	1701.8	3/4	3/4	12
1.058 - 1.262	1701.9	3/4	3/4	12
1.263 - 1.613	1709.10	3/4	3/4	12

† Each assembly consists of two links and one hex bolt for top suspension with lockwasher, nut, and Cotter Key.
Center to center of eyes indicates vertical distance between conductors and will be 12" unless otherwise specified.
Add a "-18" to the catalog number for 18" spacing.

HOLD DOWN WEIGHT SHACKLES*



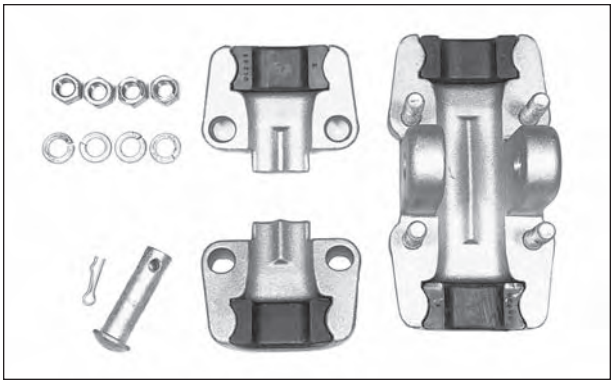


THERMOLIGN SUSPENSION CONDUCTOR DIAMETER RANGE (INCHES)	HUGHES BROTHERS STOCK NO †	BOLT DIAMETER (INCHES)	STOCK DIM. (INCHES)	DIM. "X" (INCHES)	DIM. "O" (INCHES)	DIM. "L" (INCHES)	DIM. "R" (INCHES)	MAXIMUM HOLD DOWN WEIGHT (LBS)
0.709 - 0.855	1888.6	3/4	5/8	6	3-3/4	6-1/4	3	800
0.856 - 1.057	1888.7	3/4	5/8	6-1/2	4-1/4	6-1/2	3	800
1.058 - 1.262	1888.8	3/4	5/8	7-1/8	4-7/8	7-1/4	3-1/4	800

† Each assembly consists of a shackle body and hex-head bolt, lockwasher, nut, and Cotter Key.
* SPECIAL PRODUCT sold by Hughes Brothers, Inc., Seward, Nebraska (See page 1-39).
** For use only with AGS Units installed on strand.

CUSHION-GRIP™ T2 Suspension for T-2 Conductor

NOMENCLATURE



Thermal Rating (Continuous) 125°C

CUSHION-GRIP T2 Suspention Keepers: High-strength Aluminum Alloy Casting

CUSHION-GRIP T2 Suspension Body: High-strength Aluminum Alloy Casting

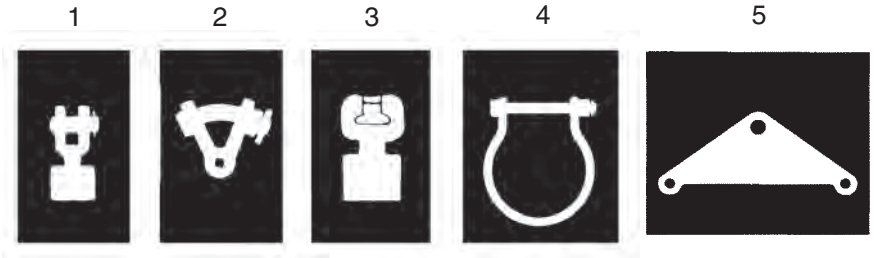
U-bolts: Galvanized Steel

Nuts and Lock Washers: Galvanized Steel

Pin and Cotter Key: Galvanized Steel

HARDWARE and FITTINGS

Shown below are the Clevis Eye (1), Y Clevis Eye (2), Socket Eye (3), Hold-Down Weight Shackle (4), Yoke Plate (5) that are available for the CUSHION-GRIP T2 Suspension.



GENERAL RECOMMENDATIONS

CUSHION-GRIP T2 Suspension is intended for use on T-2 conductor. It is designed to protect the conductor from bending stress, compression stress, and abrasion. Utilizing a concept from the ARMOR-GRIP® product line, an elastomer insert was developed for the CUSHION-GRIP T2 Suspension to guard against abrasion, wear, and fatigue. The elastomer inserts have been found to reduce static bending strain at the clamp by as much as 50 percent. In addition, the CUSHION-GRIP T2 Suspension features parallel grooves in both the keeper and base units to protect the T-2 condcutor from deformation and abrasion.

CUSHION-GRIP T2 Suspension is an extremely effective device for suspending T-2 conductor and resulting in an increased life of the conductor.

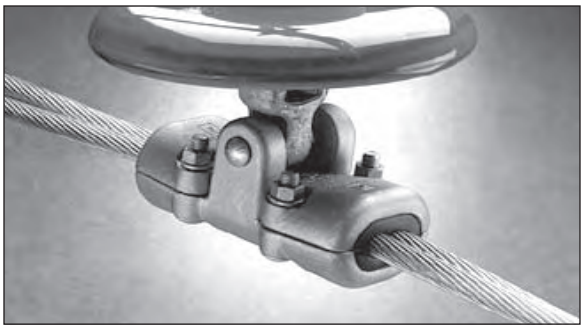
VERTICAL ULTIMATE STRENGTH. Refer to dimensional tables in this section.

LINE ANGLE. The maximum recommended line angle for a CUSHION-GRIP Clamp is 30˚. As a single suspension and 60˚ in a double configuration utilizing a Yoke Plate.

Patent Pending

CUSHION-GRIP™ T2 Suspension for T-2 Conductor

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy
All-Aluminum, AWAC®
Compacted All-Aluminum



Catalog Number	Conductor Range	Clevis Eye	Y Clevis Eye	Socket Eye	Ultimate Vertical Strength
CCT2-0003	2x0.250-2x0.447	CE-5261	YC-5207	SE-5152	10,000#
CCT2-0004	2x0.448-2x0.642	CE-5261	YC-5207	SE-5152	15,000#
CCT2-0005	2x0.721-2x0.858	CE-5105	YC-5209	SE-5154	20,000#
CCT2-0006	2x0.859-2x1.108	CE-5106	YC-5211	SE-5155	25,000#

FITTINGS SELECTION TABLE

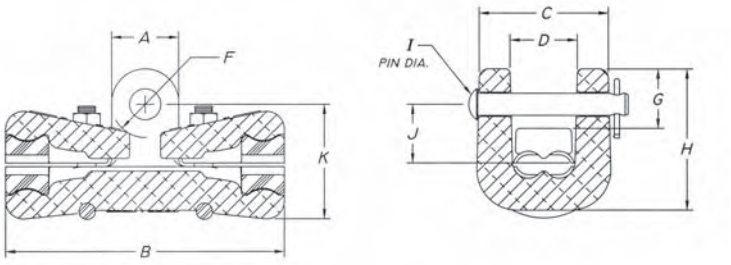
Catalog Number	Clevis Eye	Y Clevis Eye	Socket Eye	Ultimate Vertical Strength
CCT2-0003	CE-5261	YC-5207	SE-5152	10,000#
CCT2-0004	CE-5261	YC-5207	SE-5152	15,000#
CCT2-0005	CE-5105	YC-5209	SE-5154	20,000#
CCT2-0006	CE-5106	YC-5211	SE-5155	25,000#

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. However, the hardware components may be reused if in good condition.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size CUSHION-GRIP Clamp before application.
5. CUSHION-GRIP T2 Suspension are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

CUSHION-GRIP™ T2 Suspension for T-2 Conductor

DIMENSIONAL TABLES

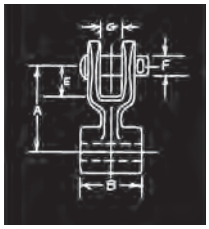


Catalog Number	Conductor Range IN.	A IN.	B IN.	C IN.	D IN.	F IN.	G IN.	H IN.	Clevis Pin (dia) I IN.	J IN.	K IN.	Weight LBS.	Ultimate Vertical Strength LBS.
CCT2-0003	2x0.250-2x0.447	1.60	6.00	2.50	1.40	1.00	1.60	3.00	5/8	1.45	2.10	2.2	10,000
CCT2-0004	2x0.448-2x0.642	1.75	7.00	3.50	1.40	0.80	1.65	3.75	5/8	1.60	2.80	5.1	15,000
CCT2-0005	2x0.721-2x0.858	1.85	7.75	4.25	1.80	0.95	1.90	4.25	5/8	1.65	3.30	6.5	20,000
CCT2-0006	2x0.859-2x1.108	2.25	8.00	4.25	2.25	0.95	2.10	4.50	3/4	1.70	3.25	6.7	25,000

CUSHION-GRIP CLAMP FITTINGS

CLEVIS EYE*

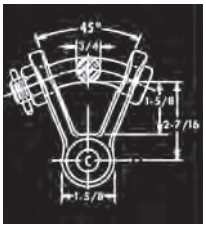




CATALOG NUMBER	GENERAL DIMENSIONS B IN.			D IN.				VERTICAL ULTIMATE STRENGTH LBS.	WT. PER 100 UNITS LBS.
CE-5259	3-1/8	1/2	11/16	1-1/2	1-1/2	5/8	13/16	15,000	**104**
CE-5261	3-1/8	3/4	11/16	1-1/2	1-1/2	5/8	13/16	20,000	**104**
CE-5105	3-1/8	1-1/16	13/16	1-1/2	1-1/2	5/8	13/16	25,000	**178**
CE-5106	3-1/8	2-1/8	13/16	1-1/2	1-1/2	5/8	13/16	25,000	**178**

Y CLEVIS EYE*

CATALOG NUMBER	GENERAL DIMENSIONS B IN.	C IN.	VERTICAL ULTIMATE STRENGTH LBS.
YC-5206	5/8	11/16	15,000
YC-5207	3/4	11/16	20,000
YC-5209	1-1/16	13/16	25,000
YC-5211	2-1/8	13/16	25,000

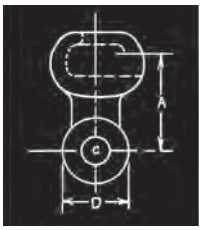


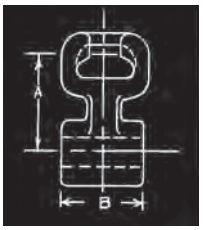


CUSHION-GRIP™ T2 Suspension for T-2 Conductor

FITTINGS

SOCKET EYE*

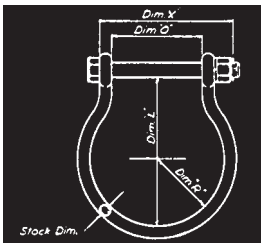




CATALOG NUMBER	GENERAL DIMENSIONS A IN.	B IN.	C IN.	D IN.	VERTICAL ULTIMATE STRENGTH LBS.	WT. PER 100 UNITS LBS.
SE-5150	2-5/16	1/2	11/16	1-1/2	15,000	165
SE-5152	2-5/16	3/4	11/16	1-1/2	20,000	165
SE-5154	2-5/16	1-1/16	13/16	1-1/2	25,000	178
SE-5155	2-5/16	2-1/8	13/16	1-1/2	25,000	178

EXPLANATORY NOTE:
*When ordered, FITTINGS will be packed separately from the standard CUSHION-GRIP Clamp.

HOLD DOWN WEIGHT SHACKLES*



CUSHION-GRIP CLAMP CATALOG NUMBER	HUGHES BROTHERS STOCK NO.	BOLT DIAMETER (IN.)	STOCK DIM. (IN.)	DIM. "X" (IN.)	DIM. "O" (IN.)	DIM. "L" (IN.)	DIM. "R" (IN.)	MAXIMUM HOLD DOWN WEIGHT (LBS.)
CCT2-0003	1888.3	5/8	1/2	4-3/4	2-3/4	5-3/8	2-3/8	300
CCT2-0003	1888.4	5/8	1/2	5-1/8	3-1/8	5-1/2	2-1/2	300
CCT2-0004	1888.5	5/8	1/2	5-3/4	3-3/4	6-1/8	2-3/4	300
CCT2-0006	1888.7	3/4	5/8	6-1/2	4-1/4	6-1/2	3	800
CCT2-0006	1888.8	3/4	5/8	7-1/8	4-7/8	7-1/4	3-1/4	800

† Each assembly consists of a shackle body and hex-head bolt, lockwasher, nut, and Cotter Key.
* SPECIAL PRODUCT sold by Hughes Brothers, Inc., Seward, Nebraska–see below.
** Contact Hughes Brothers, Inc. for a hold down weight shackle for catalog number CCT2-0005 (this clamp requires a 5/8" bolt).

HUGHES BROTHERS, INC.

ORDERING INSTRUCTIONS

For Hold-Down Weight Shackles,order directly from:

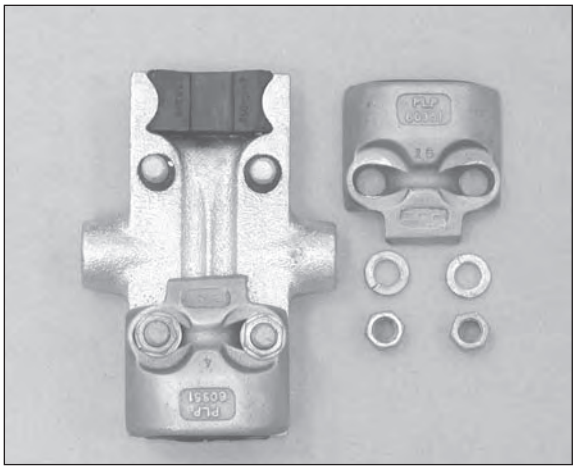
Hughes Brothers, Inc.
210 North 13th Street
P.O. Box 191
Seward, Nebraska 68424
Telephone: (402) 643-2991

Price and delivery information available from Hughes Brothers, Inc., upon request.

CUSHION-GRIP™ T2 Support for T-2 Conductor

NOMENCLATURE

Thermal Rating (Continuous) 125°C



CUSHION-GRIP T2 Support Keepers: High-strength Aluminum Alloy Casting

CUSHION-GRIP T2 Support Body: Galvanized Ductal Iron Casting

U-bolts: Galvanized Steel

Nuts and Lock Washers: Galvanized Steel

GENERAL RECOMMENDATIONS

The CUSHION-GRIP T2 Support is intended for use on aluminum based twisted pair conductors. (T-2 Conductors) The clamp is designed to reduce the static and dynamic stresses at the support point, so the conductor is protected against the effects of oscillations. The conductor is cushioned by field proven, captive elastomer inserts, which guard against abrasion, wear and fatigue.

The level of protection provided by the CUSHION-GRIP T2 Support is comparable to a bolted clamp over armor rods. This equates to a reduction in bending strain as high as 50% as compared to bare conductor in a bolted clamp. This reduction in bending strain can be directly related to an increase in overall conductor life. The CUSHION-GRIP T2 Support is designed for up to 125° C continuous conductor operation (150° C two hour emergency).

Features and Benefits:

- The CUSHION-GRIP T2 Support is shipped assembled. U-bolts are captivated in the base.
- Labor savings – to install the CUSHION-GRIP T2 Support simply install the base, place the keepers over the conductor, and install the washers, nuts then tighten.
- Integral Cushions – minimize conductor bending stresses at critical entry locations.

Mechanical Strength:
The CUSHION-GRIP T2 Support will withstand a pulloff load from the trunnion pins of the insulator cap of 5,000 lbs., applied in any direction. This includes the vertical up direction (uplift).

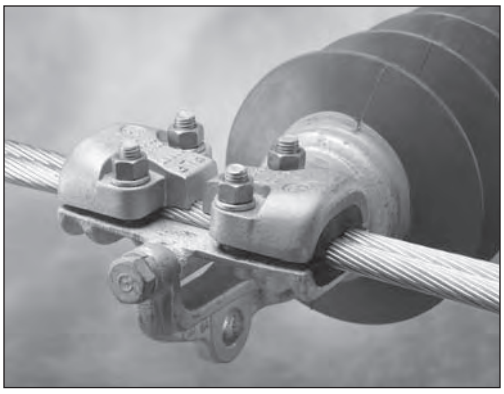
Slip load:
When initially installed the CUSHION-GRIP T2 Support has a slip load that ranges between 10% to 15% of the conductor's rated breaking strength (RBS).

Line Angle:
The maximum recommended line angle for a CUSHION-GRIP T2 Support is 30° as a single support and 60° in a double support configuration.

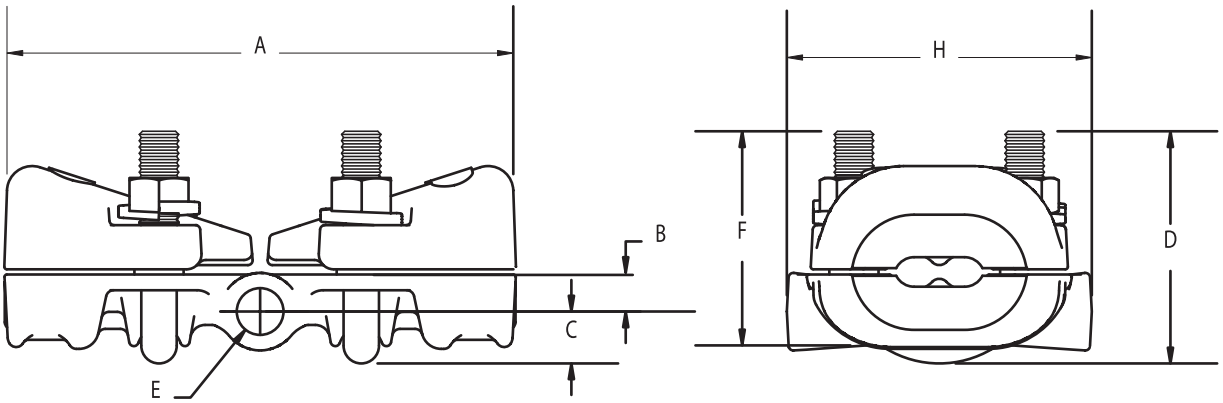
CUSHION-GRIP™ T2 Support for T-2 Conductor

ORDERING INFORMATION

Catalog Number	Conductor Range Inches (mm) Min	Max	Nominal Conductor Sizes Max	Weight/Unit Pounds (Kg)	Standard Carton Quantity
CCT2-0103	2 x 0.250 (2 x 6.4)	2 x 0.447 (2 x 11.4)	2 x #4 to 2 x 2/0	2.85 (1.3)	12
CCT2-0104	2 x 0.477 (2 x 11.4)	2 x 0.642 (2 x 16.3)	2 x 2/0 to 2 x 266.8 kcmil	4.75 (2.2)	12



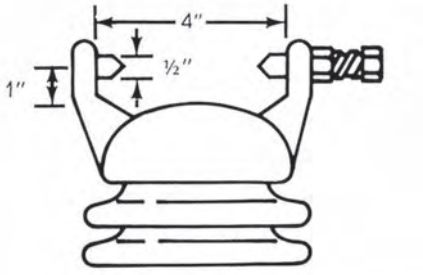
DIMENSIONAL INFORMATION



Catalog Number	Dimensions Inches A	B	C	D	E	F	G	H
CCT2-0103	5-1/2	3/8	1/2	2-3/8	0.595	2-1/4	9/16	3-7/8
CCT2-0104	6-1/2	1/2	3/4	3	0.595	2-3/4	3/4	3-7/8

CLAMP FOR TRUNNION

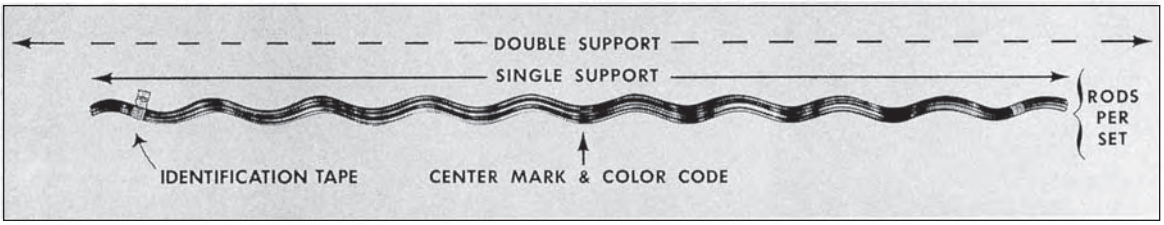
To insure proper fit and service life, it is recommended that only line post insulators with clamp top trunnion caps that conform to ANSI standards be used. See the illustration on the right for nominal cap dimensions that illustrate ANSI standards that have been established outlining the permissible dimensions and tolerances for trunnion caps. Consult the insulator manufacturer when in doubt about insulator standards.



The above dimensions are approximates for design information. Consult ANSI specification C29.7-1977 for exact dimensions.

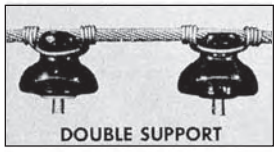
Armor Rods

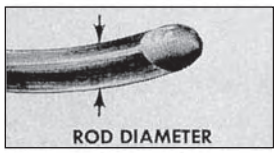
NOMENCLATURE



Single Support and Double Support Length: Identified by "S" and "D" appearing in the length column on the catalog page. Should the maximum distance between tied supports exceed 12 inches on double crossarm construction, consult PLP.
Rod Diameter: Added to conductor O.D., assists in arriving at applied overall diameter.
Rods Per Set: Indicate the proper number of rods for each application.
Center Mark: Establishes recommended alignment of rods during application.
Color Code and Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog page.

Identification Tape: Shows catalog number, nominal sizes.





Thermal Rating (Continuous)
Within a high temperature
Suspension Clamp 250°C
ACSS Repair 250°C
ACSR Repair 125°C

GENERAL RECOMMENDATIONS

PROTECTION. PREFORMED™ Armor Rods are intended to protect against bending, compression, abrasion, arc-over, and to provide repair. The degree of protection needed on a specific line depends upon a number of factors such as line design, temperature, tension, exposure to wind flow, and vibration history on similar construction in the same area. As a general guide, the following recommendations may be adopted to the specific conditions.

Armor Rods are recommended as minimum protection for clamp-type supports or suspensions.

Line Guards are recommended as minimum protection for hand-tied spans.

The use of supplementary damping devices, such as Spiral Vibration Dampers, should be considered when conductor vibration is present or expected.

***PLP® Factory Formed Ties* are recommended as being superior to armor-hand tie combinations** in providing protection from abrasion, and equivalent in providing protection from vibration fatigue.

ARMOR-GRIP® Suspension is recommended as being superior to armor–clamp combinations in providing protection from bending stress, compression stress and abrasion.

ARMOR RODS RESTORATIVE-REPAIR. Armor Rods may be used to restore full conductance and strength to ACSR and aluminum conductors where damage does not exceed approximately 50 percent of the outer strand layer. Consult Factory for repair capability of specific strandings.

For standard catalog numbers damage should be located at the "point of support" or within the "midspan area". For damage 6" to 36" (152 to 914 mm) from the support point contact PLP for recommendations.

NOTE: When Armor Rods are used to repair damaged aluminum-based conductors, the following application steps are required for optimum **electrical** repair:

Step 1: Thoroughly wire-brush damaged conductor for the full length of the Armor Rods to be applied.
Step 2: Apply a gritted inhibitor to the full length of this area before applying the Armor Rods.

TAPPING. Tapping over applied aluminum *Armor Rods* is permissible. Where it is known that tapping clamps will be installed over *Armor Rods*, it is recommended that the conductor be thoroughly wire brushed clean, then an inhibitor be applied.

APPLICATION-INSPECTION. After application of the correct number of rods per set, a slight gap between rods should be present. Consult the General Information Section for detailed explanation.

Armor Rods

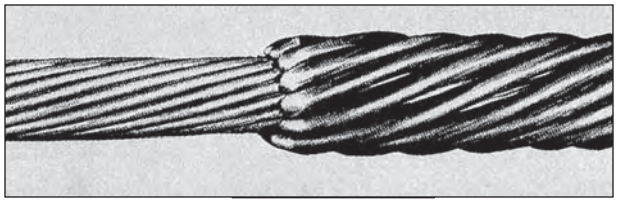
GENERAL RECOMMENDATIONS CONTD.

Apply no more than one-half the number of rods per set at a time on smaller sizes. On conductors 4/0 and larger, do not attempt to apply more than 4 rods at a time. The alignment of the ends of the rods should be maintained within 2 inches for voltages of 230 KV and lower.

MATERIAL SELECTION. For copper or Copperweld® conductor, Copperweld® or Phosphor Bronze, Armor Rods are recommended when electrical requirements such as tapping or repair are not involved.

DESIGN MODIFICATION

Armor Rods: PARROT-BILL® Ends



To meet the corona onset and RIV requirements for most extra-high-voltage applications, PARROT-BILL® Ends are to be used instead of the standard ball-end rods. Consult the Factory for an engineering recommendation.

O.D. CALCULATIONS

Applied overall diameter computed as follows:

The rod diameter can be obtained from the catalog page tables. Conductor/Strand O.D. can be found in the Conductor Chart, General Information Section.

Rod Diam.,	.167" x 2 = .334"
Conductor Diam.	+ .398"
Total Applied O.D.	.732"

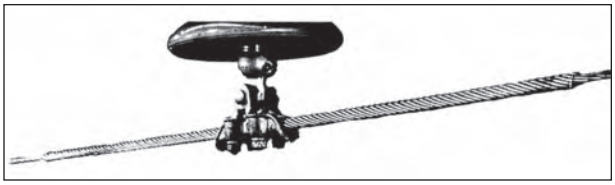
SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ Armor Rods before application.
5. PREFORMED Armor Rods are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Copperweld is a registered trademark of the Copperweld Co.

Armor Rods: Aluminum

For use on:
ACSR, Compacted ACSR, Aluminum Alloy All-Aluminum, AWAC® Compacted All-Aluminum, ACAR, ACSS (AW & TW)



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT/LBS	LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	COLOR CODE
	MIN.	MAX.		PER CARTON					
AR-0106 AR-0306	.194	.207	#6, 7W Alum. Alloy #6, 6/1	100 100	35 45	40(S) 52(D)	.121	7	Blue
AR-0107 AR-0307	.208	.219	#4, 7W, Comp.	100 100	35 45	40(S) 52(D)	.121	7	Black
AR-0108 AR-0308	.220	.228	#5, 3-7W Alum. Alloy #5, 6/1	100 100	40 51	40(S) 52(D)	.121	8	White
AR-0109 AR-0309	.229	.243	#4, 7W All-Alum. #4, 6/1-7/1 Comp.	100 100	40 51	40(S) 52(D)	.121	8	Brown
AR-0110 AR-0310	.244	.259	#4, 6/1, 7/1 #4, 7W, Alum. Alloy	50 50	25 32	40(S) 52(D)	.146	7	Orange
AR-0111 AR-0311	.260	.273	#3, 7W All-Alum. #2, 7W Comp.	50 50	26 34	42(S) 54(D)	.146	7	Green
AR-0112 AR-0312	.274	.289	#3, 7W, Alum. Alloy	50 50	30 38	42(S) 54(D)	.146	8	Yellow
AR-0113 AR-0313	.290	.308	#2, 7W All-Alum. #2, 6/1 Comp.	50 50	30 38	42(S) 54(D)	.146	8	Purple
AR-0114 AR-0314	.309	.326	#2, 6/1, 7/1 #2, 7W Alum. Alloy	50 50	32 40	44(S) 56(D)	.136	9	Red
AR-0115 AR-0315	.327	.346	#1, 7W All-Alum. #1/0, 7W-19W Comp.	50 50	38 46	46(S) 58(D)	.146	9	Blue
AR-0116 AR-0316	.347	.366	#1, 6/1 #1, 7W Alum. Alloy	50 50	40 49	48(S) 60(D)	.146	9	Green
AR-0117 AR-0317	.367	.389	1/0, 7W All-Alum. 2/0, 7W Comp.	50 50	45 55	50(S) 62(D)	.146	10	Black
AR-0118 AR-0318	.390	.413	1/0, 6/1 1/0, 7W Alum. Alloy	50 50	55 67	52(S) 64(D)	.167	9	Yellow
AR-0119 AR-0319	.414	.436	2/0, 7W-19W All-Alum. 3/0, 7W Comp.	50 50	48 58	52(S) 64(D)	.146	10	Brown
AR-0120 AR-0320	.437	.463	2/0, 6/1 3/0, 6/1 Comp.	50 50	64 76	54(S) 66(D)	.167	10	Blue
AR-0121 AR-0321	.464	.490	3/0, 7W-19W All Alum.	50 50	64 76	54(S) 66(D)	.167	10	Green
AR-0122 AR-0322	.491	.521	3/0, 6/1 3/0, 7W Alum. Alloy 4/0, 6/1 Comp.	25 25	37 46	56(S) 68(D)	.167	11	Orange
AR-0123 AR-0323	.522	.551	4/0, 7W-19W All-Alum.	25 25	38 46	58(S) 70(D)	.167	11	Black

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) Single Support Length (S) and Double Support Length (D) are described on the first page of the Armor Rod section.
(3) Reference O.D. Calculations for: APPLIED O.D. Calculations
(4) AWAC is a registered trademark of the Copperweld Co.

Armor Rods: Aluminum

CATALOG NUMBER	EHV ARMOR ROD CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN	MAX	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT/LBS PER CARTON	LENGTH (INCHES)	ROD DIAMETER INCHES	RODS PER SET	COLOR CODE
AR-0124 AR-0324		.552	.585	4/0, 6/1	25 25	46 55	60(S) 72(D)	.182	11	Red
AR-0125 AR-0325		.586	.606	266.8 kcmil, 19W	25 25	52 61	62(S) 74(D)	.182	12	Black
AR-0126 AR-0326		.607	.630	266.8 kcmil, 18/1	25 25	54 63	64(S) 76(D)	.182	12	Purple
AR-0127 AR-0327		.631	.655	266.8 kcmil, 26/7	25 25	54 63	64(S) 76(D)	.182	12	Yellow
AR-0128 AR-0328		.656	.679	336.4 kcmil, 19W	18 18	43 51	66(S) 78(D)	.182	13	Brown
AR-0129 AR-0329		.680	.703	300 kcmil, 26/7	18 18	52 60	68(S) 80(D)	.204	12	Blue
AR-0130 AR-0342		.704	.740	336.4 kcmil, 26/7	18 18	54 64	72(S) 84(D)	.204	12	Green
AR-0131		.741	.782	397.5 kcmil, 18/1	18	59	72	.204	13	Orange
AR-0132		.783	.814	397.5 kcmil, 26/7	15	66	76	.250	11	Purple
AR-0133		.815	.845	636 kcmil, 19W Comp.	15	66	76	.250	11	Red
AR-0134		.846	.907	477 kcmil, 26/7	15	74	78	.250	12	Blue
AR-0135		.908	.929	636 kcmil, 37W	12	66	80	.250	13	Green
AR-0136		.930	.976	605 kcmil, 26/7	12	72	88	.250	13	White
AR-0137	AR-0500	.977	1.016	636 kcmil, 26/7	9	50	92	.310	11	Yellow
AR-0138	AR-0501	1.017	1.035	795 kcmil, 37-61W	6	55	94	.310	12	Brown
AR-0139	AR-0502	1.036	1.064	715.5 kcmil, 26/7	6	56	96	.310	12	Blue
AR-0140	AR-0503	1.065	1.098	795 kcmil, 24/7	6	56	96	.310	12	Green
AR-0141	AR-0504	1.099	1.139	795 kcmil, 26/7	6	62	100	.310	12	Orange
AR-0142	AR-0505	1.140	1.161	954 kcmil, 36/1	6	63	100	.310	13	Purple
AR-0143	AR-0506	1.162	1.208	954 kcmil, 45/7 954 kcmil, 54/7 1033.5 kcmil, 37-61W	6	69	100	.310	13	Red
AR-0144	AR-0507	1.209	1.269	1113 kcmil, 45/7	6	81	100	.365	12	Black
AR-0145	AR-0508	1.270	1.327	1192.5 kcmil, 45/7	6	81	100	.365	12	White
AR-0146	AR-0509	1.328	1.390	1272 kcmil, 45/7	3	45	100	.365	13	Yellow
AR-0147	AR-0510	1.391	1.440	1431 kcmil, 45/7	3	54	100	.436	11	Brown
AR-0163	AR-0511	1.441	1.508	1590 kcmil, 45/7	3	58	100	.436	12	Blue
AR-0164	AR-0512	1.509	1.578	1590 kcmil, 54/19	3	58	100	.436	12	Green
AR-0165	AR-0513	1.579	1.651	1780 kcmil, 84/19	3	60	100	.436	13	Orange
AR-0166	AR-0514	1.652	1.728	2000 kcmil, 9/W	3	60	100	.436	13	Purple
AR-0167	AR-0516	1.729	1.809	2156 kcmil, 84/19	3	64	100	.436	14	Red
AR-0168	AR-0517	1.810	1.898	2500 kcmil, 91W	3	64	100	.436	14	Black
AR-0169	AR-0518	1.899	1.991		3	68	100	.436	15	White
AR-0170	AR-0519	1.992	2.090	3500 kcmil, 127W	3	68	100	.436	15	Yellow
AR-0171	AR-0520	2.091	2.193	3500 kcmil, 127W	3	80	100	.468	15	Brown

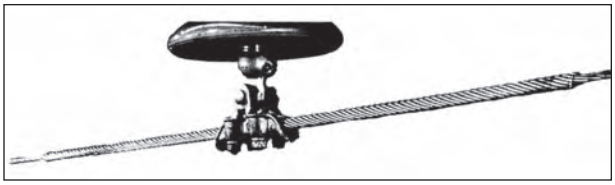
Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) Single Support Length (S) and Double Support Length (D) are described on the first page of the Armor Rod section.
(3) Reference O.D. Calculations for: APPLIED O.D. Calculations
(4) AWAC is a registered trademark of the Copperweld Co.

Armor Rods: ALUMINUM-CLAD STEEL

For use on:
Aluminum-Clad Steel Strands



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT/LBS	LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	COLOR CODE
	MIN.	MAX.		PER CARTON					
AR-2113 AR-2313	.169	.178	3#12 AW	50 50	32 40	40(S) 52(D)	.102	7	Orange
AR-2116 AR-2316	.196	.207	3#11 AW	50 50	32 40	40(S) 52(D)	.102	7	Black
AR-2118 AR-2318	.218	.225	3#10 AW 4-M AW	50 50	36 46	40(S) 52(D)	.102	8	Green
AR-2120 AR-2320	.237	.249	1/4", 7#12AW 6-M, AW, 3#9 AW	50 50	40 51	40(S) 52(D)	.102	9	Yellow
AR-2122 AR-2322	.264	.277	9/32", 7#11 AW 8-M, AW, 3#8 AW	25 25	28 35	42(S) 54(D)	.114	9	Blue
AR-2124 AR-2324	.296	.314	5/16", 7#10 AW 10-M, AW, 3#7 AW	25 25	30 37	46(S) 58(D)	.114	9	Black
AR-2126 AR-2326	.334	.352	11/32", 7#9 AW 12.5-M, AW, 3#6 AW	25 25	35 44	50(S) 62(D)	.114	10	Yellow
AR-2128 AR-2328	.373	.392	3/8", 7#8 AW 16-M, AW, 3#5 AW	25 25	44 54	50(S) 62(D)	.128	10	Orange
AR-2130 AR-2330	.409	.425	18-M AW	25 25	51 62	54(S) 66(D)	.128	11	Black
AR-2131 AR-2331	.426	.450	7/16" AW 7#7 AW 20M, AW	25 25	58 70	56(S) 68(D)	.128	12	Green
AR-2133 AR-2333	.477	.504	1/2" AW 7#6 AW	20 20	54 65	56(S) 68(D)	.144	11	Blue
AR-2135 AR-2335	.535	.565	9/16" AW 7#5 AW	10 10	40 48	60(S) 72(D)	.162	12	Yellow
AR-2137 AR-2337	.593	.625	5/8" AW 7#4 AW	10 10	46 56	60(S) 72(D)	.183	11	Black

Left-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) Single Support Length (S) and Double Support Length (D) are described on the first page of the Armor Rod section.
(3) Reference O.D. Calculations for: APPLIED O.D. Calculations

Armor Rods: COPPERWELD®

For use on:
Copperweld Strand, Copper Copperweld®/Copper Composite

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT/LBS	LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	COLOR CODE
AR-5100 AR-5300	.106	.168	#6 Solid Cu	50 50	35 46	38(S) 50(D)	.102	7	Green
AR-5101 AR-5301	.169	.178	3 #12 Cu	50 50	37 48	40(S) 52(D)	.102	7	Red
AR-5102 AR-5302	.179	.188	#5 Solid Cu	50 50	37 48	40(S) 52(D)	.102	7	Black
AR-5104 AR-5304	.196	.207	3 #11 Cw 8A Cw/Cu	50 50	56 72	40(S) 52(D)	.102	7	Gray
AR-5106 AR-5306	.218	.225	3 #10 Cw	50 50	44 56	40(S) 52(D)	.102	8	Red
AR-5107 AR-5307	.226	.236	6A Cw/Cu #4, 7W Cu	50 50	44 56	40(S) 52(D)	.102	8	Black
AR-5108 AR-5308	.237	.249	6M Cu 7 #12 Cw	50 50	49 64	42(S) 54(D)	.102	9	Blue
AR-5109 AR-5309	.250	.263	#3, 7W Cu 6M Cw 3W	50 50	50 64	42(S) 54(D)	.102	9	Gray
AR-5110 AR-5310	.264	.277	8M, Cw 7 #11 Cw	50 50	57 65	42(S) 54(D)	.102	9	Green
AR-5111 AR-5311	.278	.295	#2, 7W Cu 4A Cw/Cu	50 50	56 72	42(S) 54(D)	.102	10	Red
AR-5112 AR-5312	.296	.314	10M Cw 7 #10 Cw	25 25	35 44	44(S) 56(D)	.114	9	Black
AR-5113 AR-5313	.315	.333	#1, 7W-19W Cu	25 25	44 55	46(S) 58(D)	.128	9	Blue
AR-5114 AR-5314	.334	.352	12.5M Cw 7 #9 Cw	25 25	46 58	48(S) 60(D)	.128	9	Gray
AR-5115 AR-5315	.353	.372	14M Cw 2A Cw/Cu	25 25	54 66	50(S) 62(D)	.128	10	Green
AR-5116 AR-5316	.373	.392	7#8 Cw 16M Cw, 3 #5 Cw	25 25	62 76	52(S) 64(D)	.144	9	Red
AR-5118 AR-5318	.409	.425	18M Cw 2/0, 7W-19W Cu	15 15	44 54	54(S) 66(D)	.144	10	Blue
AR-5119 AR-5319	.426	.450	7 #7 Cw 20M Cw	15 15	55 66	54(S) 66(D)	.162	10	Gray
AR-5120 AR-5320	.451	.476	1/0 K, Cw/Cu 3/0, 7W-19W Cu	15 15	57 69	56(S) 68(D)	.162	10	Green
AR-5121 AR-5321	.477	.504	7 #6Cw 3/0, 12W Cu	15 15	62 75	56(S) 68(D)	.162	11	Red
AR-5122 AR-5322	.505	.534	19 #10 Cw 25M Cw	15 15	64 78	58(S) 70(D)	.162	11	Black
AR-5123 AR-5323	.535	.565	7 #5 Cw 4/0, 12W Cu	10 10	48 58	58(S) 70(D)	.162	12	Blue
AR-5124 AR-5324	.566	.592	19 #9 Cw 250M, 19-37W	10 10	49 59	60(S) 72(D)	.162	12	Gray
AR-5125 AR-5325	.593	.625	7 #4 Cw 250M, 12W Cu	10 10	53 63	60(S) 72(D)	.162	13	Green

Left-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) Single Support Length (S) and Double Support Length (D) are described on the first page of the Armor Rod section.
(3) Reference O.D. Calculations for: APPLIED O.D. Calculations
(4) Copperweld is a registered trademark of the Copperweld Co.

Armor Rods: Phosphor Bronze

For use on:
Copper
Copperweld®/Copper Composite

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT/LBS	LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	COLOR CODE
	MIN.	MAX.							
ARB-1103 ARB-1303	.160	.168	#6, Solid Cu	75 75	54 70	38 50	.099	7	Green
ARB-1104 ARB-1304	.169	.178	9 1/2 D Cw/Cu	75 75	56 72	40 52	.099	7	Red
ARB-1105 ARB-1305	.179	.188	#6, 7W Cu 8C, Cw/Cu	75 75	56 72	40 52	.099	7	Black
ARB-1107 ARB-1307	.196	.207	#8A Cw/Cu #4, Solid Cu	50 50	44 56	40 52	.099	8	Gray
ARB-1109 ARB-1309	.218	.225	#8D Cw/Cu #7A Cw/Cu	50 50	44 56	40 52	.099	8	Red
ARB-1110 ARB-1310	.226	.236	#6A Cw/Cu #4, 7W Cu	50 50	44 56	40 52	.099	8	Black
ARB-1111 ARB-1311	.237	.249	#7D Cw/Cu	50 50	52 65	42 54	.099	9	Blue
ARB-1112 ARB-1312	.250	.263	#3, 7W Cu #2 Solid Cu	50 50	52 65	42 54	.099	9	Gray
ARB-1113 ARB-1313	.264	.277	#6D Cw/Cu	50 50	52 65	42 54	.099	9	Green
ARB-1114 ARB-1314	.278	.295	#4A Cw/Cu #2, 7W Cu	50 50	56 72	42 54	.099	10	Red
ARB-1115 ARB-1315	.296	.314	#2F Cw/Cu #5D, Cw/Cu	50 50	68 86	44 56	.111	9	Black

Left-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) Single Support Length (S) and Double Support Length (D) are described on the first page of the Armor Rod section.
(3) Reference O.D. Calclations section, for: APPLIED O.D. Calculations
(4) Refer to General Recommendations for material selection.
(5) Copperweld is a registered trademark of the Copperweld Co.

Armor Rods: Galvanized Steel

For use on:
ACSR and Steel Reinforced Copper Conductors with Right-Hand Lay

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT/LBS	LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	COLOR CODE
	MIN.	MAX.		PER CARTON					
AR-1154 AR-1354	.244	.259	6/1 #4-7/1	50 50	38 48	40 (S) 52 (D)	.070	12	Orange
AR-1158 AR-1358	.309	.326	6/1 #2-7/1	50 50	60 75	44 (S) 56 (D)	.086	12	Red
AR-1160 AR-1360	.347	.373	#1-6/1	50 50	70 88	48 (S) 60 (D)	.086	13	Black
AR-1162 AR-1362	.390	.413	1/0-6/1	25 25	50 62	52 (S) 64 (D)	.100	13	Yellow
AR-1164 AR-1364	.437	.463	2/0-6/1	25 25	70 84	54 (S) 66 (D)	.119	12	Blue
AR-1166 AR-1366	.491	.521	3/0-6/1	20 20	62 75	56 (S) 68 (D)	.119	13	Orange
AR-1168 AR-1368	.552	.585	4/0-6/1	15 15	66 80	60 (S) 72 (D)	.138	13	Red

Right-hand lay standard

For use on:
Galvanized Steel Strand with Left-Hand Lay

AR-1123	.229	.243	1/4-7W	50	37	40	.086	10	Black
AR-1124	.244	.259	1/4-3W	50	37	40	.086	10	Yellow
AR-1128	.309	.326	5/16-3W 5/16-7W HS, & EHS	50	60	44	.100	11	Black
AR-1130	.347	.373	3W 3/8-7W	50	70	48	.100	12	Orange
AR-1133	.414	.436	7/16-7W	20	52	52	.119	12	Green
AR-3139	.491	.521	1/2-7W 19W	20	62	56	.138	12	Blue

Left-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) Single Support Length (S) and Double Support Length (D) are described on the first page of the Armor Rod section.
(3) Galvanized Steel Armor Rods may be suitable for application on materials other than Galvanized Steel. Consult the Factory for specific information.

PREFORMED LINE PRODUCTS

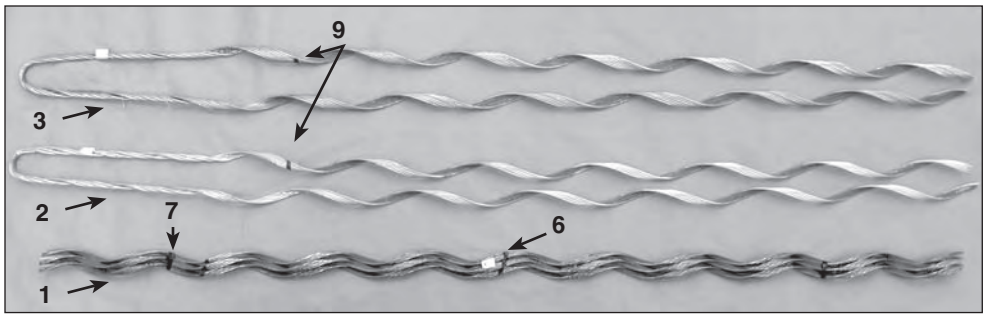
Section 2 – Transmission: Dead-ends

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THERMOLIGN® Dead-end 2-1

THERMOLIGN® Dead-end

NOMENCLATURE





Patent Pending

1. Structural reinforcing rods in multiple subsets (Aluminum Alloy)
2. Aluminum Alloy Dead-end
3. Aluminum-Clad Steel Dead-end
4. Thimble Clevis (Galvanized Steel)
5. 14" Extension Link (Galvanized Steel)
6. Center Mark
7. Crossover Mark
9. Color Code and Crossover Marks

GENERAL RECOMMENDATIONS

The THERMOLIGN Dead-end is specifically designed for applications on ACSS/AW or ACCR (not intended for use on conductors with trapezoidal outer strands). The design allows for continuous conductor operating temperatures up to 250°C.

FEATURES AND BENEFITS

- No compression press and dies required - installation time is minimal
- No electrical connections - conductor passes through Dead-end un-cut eliminating compression and bolted electrical connections.

GENERAL SPECIFICATIONS

Holding strength: 95% or more of the conductor rated breaking strength (RBS)

Includes: Structural Reinforcing Rods, Dead-ends, Thimble Clevis and Extension Link.

Thermal Rating (Continuous)
250°C

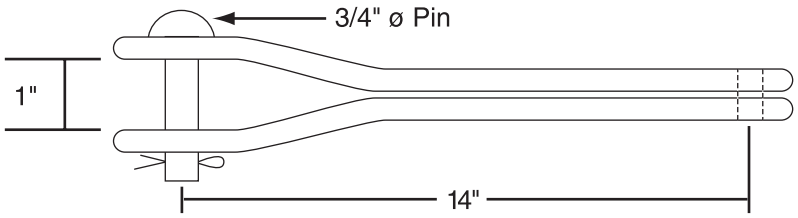
THERMOLIGN® Dead-end

For use on:
ACSS/AW, ACCR (Round Wire)
Not intended for use on conductor with trapezoidal outer strands.



Catalog Number	Diameter Range		Length Inches			
	Min.	Max.	Nominal Cond. (kcmil)	Structural Rods	Dead-ends	Color Codes
TLDE-0100	0.720" (18.3mm)	0.720" (18.3mm)	336.4	128	89	Blue
TLDE-0101	0.741" (18.8mm)	0.752" (19.1mm)	336.4, 397.5	131	91	Brown
TLDE-0102	0.772" (19.6mm)	0.783" (19.3mm)	397.5	134	93	Pink
TLDE-0103	0.806" (20.5mm)	0.823" (20.9mm)	397.5, 477	138	95	Green
TLDE-0104	0.846" (21.5mm)	0.860" (21.8mm)	477	141	97	Red
TLDE-0105	0.883" (22.4mm)	0.883" (22.4mm)	477	144	99	Purple
TLDE-0106	0.901" (22.9mm)	0.914" (23.2mm)	556.5	158	109	Yellow
TLDE-0107	0.927" (23.5mm)	0.930" (23.6mm)	556.5	161	111	Orange
TLDE-0108	0.953" (24.2mm)	0.953" (24.2mm)	556.5, 605	162	111	Black
TLDE-0109	0.963" (24.5mm)	0.977" (24.8mm)	605, 636	163	112	Blue
TLDE-0110	0.990" (25.1mm)	0.994" (25.2mm)	605, 636	166	114	Brown
TLDE-0111	1.000" (25.4mm)	1.019" (25.9mm)	636, 666	168	115	Pink
TLDE-0112	1.036" (26.3mm)	1.063" (27.0mm)	715.5, 795	171	117	Green
TLDE-0113	1.081" (27.4mm)	1.092" (27.7mm)	715.5, 795	176	120	Red
TLDE-0114	1.108" (28.1mm)	1.140" (29.0mm)	795	179	122	Black
TLDE-0115	1.162" (29.5mm)	1.175" (29.8mm)	954	183	124	Purple
TLDE-0116	1.196" (30.4mm)	1.212" (30.8mm)	954, 1033.5	194	132	Yellow
TLDE-0117	1.240" (31.5mm)	1.259" (32.0mm)	1033.5, 1113	199	135	Orange
TLDE-0118	1.290" (32.8mm)	1.302" (33.1mm)	1113, 1192.5	203	138	Black
TLDE-0119	1.338" (34.0mm)	1.345" (34.2mm)	1192.5, 1272	207	140	Blue
TLDE-0120	1.380" (35.1mm)	1.386" (35.2mm)	1272, 1351.5	211	143	Red
TLDE-0121	1.420" (36.1mm)	1.427" (36.2mm)	1351.5, 1431	216	146	Purple
TLDE-0122	1.465" (37.2mm)	1.466" (37.2mm)	1431	221	149	Yellow
TLDE-0123	1.492" (37.9mm)	1.505" (38.2mm)	1510.5, 1590	223	150	Orange
TLDE-0124	1.540" (39.1mm)	1.544" (39.2mm)	1590	227	153	Green

Extension Link Dimensions



PREFORMED LINE PRODUCTS

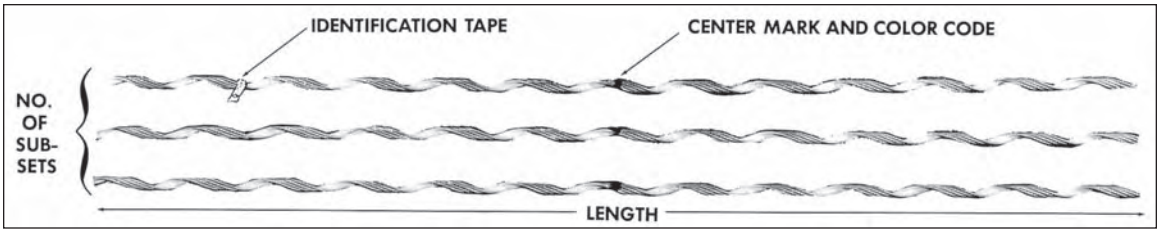
Section 3 – Transmission: Splices

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ACSR Full Tension Splice.....3-16
THERMOLIGN® Splice 3-20

Conductor Splices

NOMENCLATURE



Sub-Sets: Individual rods assembled and gritted into groups (subsets), corresponding to tabular information appearing on catalog page.

Center Mark: Establishes recommended alignment of rods during application.

Color Code and Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog page.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

Conductor Splices are designed as a single-component outer-layer assembly generally for Sub-EHV applications. Conductor Splices are available for EHV applications. Contact PLP for details.

JOINING: On all-aluminum, aluminum alloy, and copper conductors of homogenous stranding, the Conductor Splice will hold a minimum of 90% of the rated breaking strength of, and provide better conductance than, an equal length of unspliced conductor.

On ACSR conductor, the Conductor Splice will hold a minimum tension amounting to the full strength of the aluminum strands plus 10% of the steel core strength. Conductance will be better than in an equivalent length of unspliced conductor.

RESTORATIVE-REPAIR: Conductor Splices will restore original conductivity to all-aluminum, aluminum alloy, copper, and ACSR type conductors.

Full-rated breaking strength will be restored to homogeneous stranded conductors. On ACSR, strength will be restored to all of the aluminum strands, but not to the core. When core damage on ACSR is suspected, consult the following catalog section for Splice: ACSR F.T.

Other PREFORMED™ products with restorative-repair capabilities are Armor Rods, Line Guards, and ARMOR-GRIP® Suspension: for Line Repair.

RATED HOLDING STRENGTH: Published for individual sizes on the page following the specification page. In arriving at "Rated Hold Strength," actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed.

APPLICATION-INSPECTION: All conductors, new or weathered, must be thoroughly scratch brushed until bright and clean. Immediately thereafter, an industry accepted inhibitor (compatible with the conductor) should be applied befor installing the product.

TAPPING: Tapping over a conductor splice is permissible. Whenever a tapping clamp will be installed over a splice, it is imperative that the conductor be scratch brushed and an inhibitor be used. The outer surface of the splice should be thoroughly scratch brushed to remove any oxides and glue which may be present. Inhibitor should then be applied to the area beneath the tap itself.

Thermal Rating (Continuous)
125°C

Conductor Splices

GENERAL RECOMMENDATIONS (cont.)

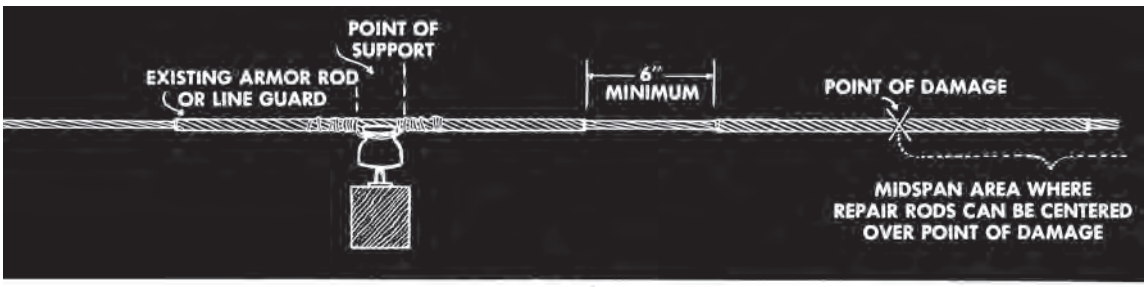


FIG. 1

When centered over the point of damage, the ends of the Conductor Splice should not be positioned closer than 6 inches to existing Armor Rods or Line Guards. The Restorative-Repair function of this splice should be limited to damage located within the "Midspan Area" or the "Point of Support". (See Figure 1)

DESIGN MODIFICATIONS

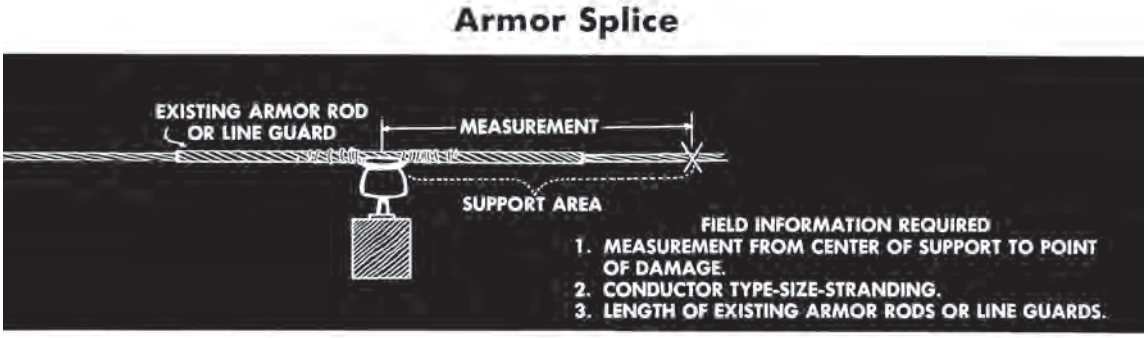


FIG. 2

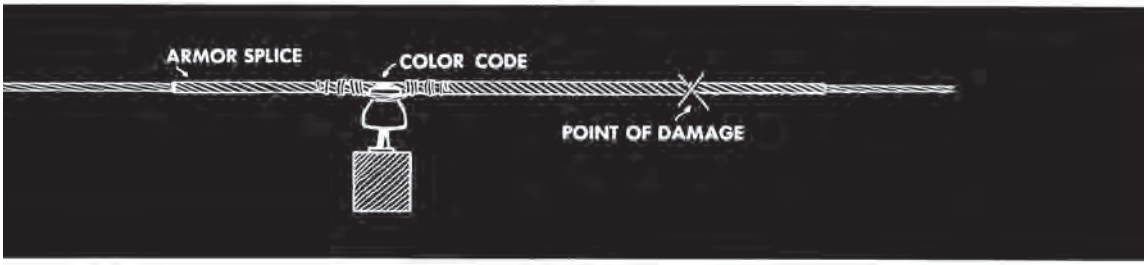


FIG. 3

The Armor Splice combines the features of both Armor Rods and Conductor Splices, which are described in their respective catalog sections. The Armor Splice should be considered when damage occurs in the "support area," or where installation would locate the ends of repair rods within 6 inches of existing rods.

Upon receipt of the field information specified in Figure 2, PLP will furnish the correct Catalog Number. The Armor Splice is custom designed to assure that when the color code mark is centered at the support point, a continuous length will extend beyond the area of damage. (See Figure 3)

Conductor Splices

O.D. CALCULATIONS

Applied overall diameter computed as follows:

The rod diameter can be obtained from the price page tables.

Conductor O.D. can be found in the Conductor Chart, General Information Section.

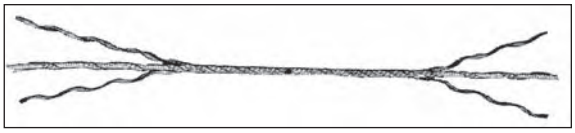
Rod Diam.	.121" x 2 = .242"
Conductor Diam.	+ .398"
Total Applied O.D.	.640"

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ Splice: Conductor before application.
5. PREFORMED Splice: Conductors are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Conductor Splices: Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy
AWAC® Conductor



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
	MIN.	MAX.		PER CARTON					
LS-0106	.177	.184	#6, 7W All-Alum.	50	6	21	.086	2	Purple
LS-0108	.194	.202	#6, 6/1 #6, 7W Alum. Alloy	50	6	22	.086	2	Blue
LS-0112	.229	.239	#4, 7W All-Alum.	50	9	24	.086	2	Brown
LS-0114	.247	.257	#4, 6/1 - 7/1 #4, 7W Alum. Alloy	50	10	26	.094	3	Orange
LS-0115	.258	.270	#3, 7W All-Alum.	50	11	26	.094	3	Green
LS-0116	.271	.280	#3, 7W Alum. Alloy	50	12	27	.094	3	Yellow
LS-0118	.290	.298	#2, 7W All-Alum.	50	13	28	.094	3	Purple
LS-0119	.299	.310	#2, AWAC 6/1 #3, AWAC 5/2	50	15	30	.102	3	Brown
LS-0120	.311	.325	#2, 6/1 - 7/1 #2, 7W Alum. Alloy	50	16	31	.102	3	Red
LS-0121	.326	.340	#1, 7W All-Alum.	50	16	31	.102	3	Blue
LS-0122	.341	.351	#1, AWAC 6/1	50	17	33	.102	3	Orange
LS-0123	.352	.367	#1, 6/1 #1, 7W Alum. Alloy	50	19	34	.102	3	Green
LS-0124	.368	.380	#1, AWAC 5/2 1/0, 7W All-Alum.	50	27	38	.121	3	Black
LS-0125	.381	.398	1/0, AWAC 6/1 1/0, 6/1 1/0, 7W Alum. Alloy	50	27	38	.121	3	Yellow
LS-0127	.414	.425	2/0, 7W All-Alum.	50	27	40	.121	3	Brown
LS-0129	.444	.462	2/0, 6/1 2/0, 7W Alum. Alloy	50	37	42	.136	3	Blue
LS-0130	.463	.481	3/0, 7W All-Alum.	50	43	46	.136	3	Green
LS-0131	.482	.503	3/0, 7W, Alum. Alloy 3/0, AWAC 6/1 3/0, 6/1	50	46	46	.146	3	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.
(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.
(3) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splices: Aluminum

CATALOG NUMBER	SIZE	RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses. ACSR	ALL-ALUMINUM	ALUMINUM ALLOY	AWAC®
LS-0106	#6		#6, 7W 555 lbs. (100%)		
LS-0108	#6	#6, 6/1 702 lbs. (60%)		#6, 7W 1,050 lbs. (100%)	
LS-0112	#4		#4, 7W 875 lbs. (100%)		
LS-0114	#4	#4, 6/1 1,098 lbs. (60%) #4, 7/1 1,374 lbs. (60%)		#4, 7W 1,670 lbs. (100%)	
LS-0115	#3		#3, 7W 1,023 lbs. (100%)		
	#4				#4, 5/2 2,790 lbs. (100%)
LS-0116	#3			#3, 7W 2,150 lbs. (100%)	
LS-0118	#2		#2, 7W 1,335 lbs. (100%)		
LS-0119	#3				#3, 5/2 3,500 lbs. (100%)
	#2				#2, 6/1 1,590 lbs. (60%)
LS-0120	#2	#2, 6/1 1,674 lbs. (60%) #2, 7/1 2,115 lbs. (60%)		#2, 7W 2,655 lbs. (100%)	
LS-0121	#1		#1, 7W 1,625 lbs. (100%)		
LS-0122	#1				#1, 6/1 1,986 lbs. (60%)
LS-0123	#1	#1, 6/1 2,088 lbs. (60%)		#1, 7W 3,420 lbs. (100%)	
LS-0124	#1				#1, 5/2 5,450 lbs. (100%)
	1/0		1/0, 7W 1,970 lbs. (100%)		
LS-0125	1/0	1/0, 6/1 2,568 lbs. (60%)		1/0, 7W 4,230 lbs. (100%)	1/0, 6/1 2,448 lbs. (100%)
LS-0127	2/0		2/0, 7W 2,480 lbs. (100%)		
LS-0129	2/0	2/0, 6/1 2,940 lbs. (55%)		2/0, 7W 5,055 lbs. (100%)	
LS-0130	3/0		3/0, 7W 3,005 lbs. (100%)		
LS-0131	3/0	3/0, 6/1 3,671 lbs. (55%)		3/0, 7W 6,365 lbs. (100%)	3/0, 6/1 3,333 lbs. (55%)

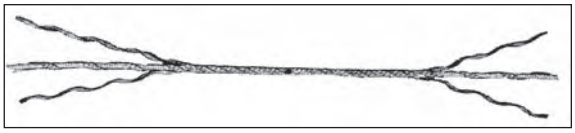
Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".
(2) For sizes or strandings not shown, consult PLP.
(3) Refer to the Splice: ACSR F. T. section for an alternate product with higher Rated Holding Strength on ACSR type conductors.
(4) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splices: Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy
AWAC® Conductor



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
	MIN.	MAX.							
LS-0133	.522	.544	3/0, AWAC 5/2 4/0, 7W All-Alum.	50	66	51	.167	3	Black
LS-0134	.545	.567	4/0, 7W Alum. Alloy 4/0, 6/1	25	33	52	.167	3	Red
LS-0135	.568	.594	250, 19W-37W All-Alum. 4/0, AWAC 15/4 266.8, 7W-19W-37W All-Alum.	25	48	61	.182	3	Blue
LS-0136	.595	.618	266.8, 18/1	25	50	63	.182	3	Purple
LS-0137	.619	.644	266.8, 26/7 300, 19W-37W All-Alum.	25	58	67	.182	3	Yellow
LS-0138	.645	.671	300, 18/1 336.4, 19W-37W All-Alum.	25	66	69	.204	3	Brown
LS-0139	.672	.700	300, 26/7 - 30/7 336.4, 18/1 - 36/1 350, 19W-37W All-Alum.	25	68	70	.204	3	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.
(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.
(3) For an example of applied overall diameter see "O.D. CALCULATIONS" at the beginning of this section.

Conductor Splices: Aluminum

RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses.					
CATALOG NUMBER	SIZE	ACSR	ALL-ALUMINUM	ALUMINUM ALLOY	AWAC®
LS-0133	3/0				3/0, 5/2 9,660 lbs. (100%)
	4/0		4/0, 7W 3,790 lbs. (100%)		
LS-0134	4/0	4/0, 6/1 4,631 lbs. (55%)		4/0, 7W 8,025 lbs. (100%)	4/0, 6/1 4,059 lbs. (55%)
LS-0135	4/0				4/0, 15/4 7,560 lbs. (70%)
	250MCM		250, 19W 4,510 lbs. (100%) 250, 37W 4,860 lbs. (100%)		
	266.8MCM		266.8, 7W 4,775 lbs. (100%) 266.8, 19W 4,800 lbs. (100%) 266.8, 37W 5,185 lbs. (100%)		
LS-0136	266.8MCM	266.8, 18/1 5,130 lbs. (75%)			
LS-0137	266.8MCM	266.8, 26/7 5,625 lbs. (50%)		266.8, 19W 10,610 lbs. (100%)	
	300MCM		300, 19W 5,300 lbs. (100%) 300, 37W 5,830 lbs. (100%)		
LS-0138	300MCM	300, 18/1 5,768 lbs. (75%)			
	336.4MCM		336.4, 19W 5,940 lbs. (100%) 336.4, 37W 6,420 lbs. (100%)		
LS-0139	300MCM	300, 26/7 6,325 lbs. (50%) 300, 30/7 7,715 lbs. (50%)			
	336.4MCM	336.4, 18/1 6,469 lbs. (75%) 336.4, 36/1 5,732 lbs. (75%)			
	350MCM		350, 19W 6,180 lbs. (100%) 350, 37W 6,680 lbs. (100%)		

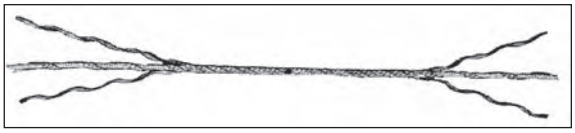
Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for an explanation of "Rated Holding Strength".
(2) For sizes or strandings not shown, consult PLP.
(3) Refer to the Splice: ACSR F. T. Section for an alternate product with higher rated holding strength on ACSR-type conductors.
(4) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splices: Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
	MIN.	MAX.		PER CARTON					
LS-0140	.701	.729	336.4, 26/7 336.4, 19W Alum. Alloy 397.5, 19W-37W All-Alum. 400, 19W-37W All-Alum.	15	62	77	.250	3	Green
LS-0141	.730	.760	336.4, 30/7 397.5, 18/1	15	64	79	.250	3	Black
LS-0142	.761	.792	397.5, 26/7 397.5, 19W Alum. Alloy 450, 19W-37W All-Alum.	15	74	83	.250	3	Purple
LS-0143	.793	.825	477, 18/1 - 36/1 477, 19W-37W All-Alum. 500, 19W-37W All-Alum.	3	18	84	.250	3	Red
LS-0145	.851	.886	477, 26/7 556.5, 18/1 - 36/1 556.5, 19W-37W All-Alum.	3	23	99	.250	4	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.
(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.
(3) For an example of applied overall diameter see "O.D. CALCULATIONS" at the beginning of this section.

Conductor Splices: Aluminum

RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses.				
CATALOG NUMBER	NOMINAL CONDUCTOR SIZE	ACSR	ALL-ALUMINUM	ALUMINUM ALLOY
LS-0140	363.4	336.4, 26/7 7,025 lbs. (50%)		336.4, 19W 12,830 lbs. (100%)
	397.5		397.5, 19W 6,880 lbs. (100%) 397.5, 37W 7,305 lbs. (100%)	
	400		400, 19W 6,928 lbs. (100%) 400, 37W 7,350 lbs. (100%)	
LS-0141	336.4	336.4, 30/7 8,520 lbs. (50%)		
	397.5	397.5, 18/1 7,530 lbs. (75%) 397.5, 36/1 6,555 lbs. (75%)		
LS-0142	397.5	397.5, 26/7 8,095 lbs. (50%)		397.5, 19W 13,617 lbs. (90%)
	450		450, 19W 7,630 lbs. (100%) 450, 37W 8,110 lbs. (100%)	
LS-0143	477	477, 18/1 8,903 lbs. (75%) 477, 36/1 7,740 lbs. (75%)	477, 19W 8,090 lbs. (100%) 477, 37W 8,600 lbs. (100%)	
	500		500, 19W 8,480 lbs. (100%) 500, 37W 9,100 lbs. (100%)	
	477			477, 19W 16,371 lbs. (90%)
LS-0145	477	477, 26/7 9,715 lbs. (50%)		
	550		550, 37W 9,720 lbs. (100%) 550, 61W 9,440 lbs. (90%)	
	556.5	556.5, 18/1 10,388 lbs. (75%) 556.5, 36/1 8,850 lbs. (75%)	556.5, 19W 9,440 lbs. (100%) 556.5, 37W 9,830 lbs. (100%)	

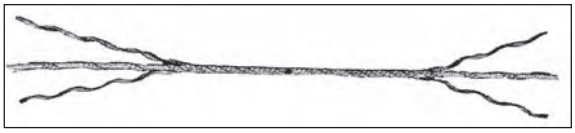
Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".
(2) For sizes or strandings not shown, consult PLP.
(3) Refer to the Splice: ACSR F. T. Section for an alternate product with higher rated holding strength on ACSR-type conductors.
(4) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splices: Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MIN.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
LS-0146	.887	.929	605, 36/1 636, 37W-61W All-Alum.	3	31	105	.310	3	Orange
LS-0147	.930	.968	636, 18/1 - 36/1 666.6 - 36/1	3	36	108	.310	4	Brown
LS-0148	.969	1.008	636, 54/7 - 26/7 666.6, 54/7 715.5, 36/1	3	37	111	.310	4	Yellow
LS-0149	1.009	1.050	795, 36/1 795, 37W-61W All-Alum.	3	39	121	.310	4	Green

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.
(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.
(3) For an example of applied overall diameter see "O.D. CALCULATIONS" at the beginning of this section.

Conductor Splices: Aluminum

RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses.				
CATALOG NUMBER	NOMINAL CONDUCTOR SIZE	ACSR	ALL-ALUMINUM	ALUMINUM ALLOY
LS-0146	500	500, 30/7 12,225 lbs. (50%)		
	556.5	556.5, 26/7 11,200 lbs. (50%)		556.5, 19W 19,080 lbs. (90%)
	605	605, 36/1 9,600 lbs. (75%)		
	636		636, 37W 11,240 lbs. (100%) 636, 61W 10,520 lbs. (100%)	
LS-0147	605	605, 30/7 12,050 lbs. (50%) 605, 54/7 11,250 lbs. (50%)		
	556.5	556.5, 30/7 13,600 lbs. (50%)		
	636	636, 18/1 11,873 lbs. (75%) 636, 36/1 10,088 lbs. (75%)		
	666	666.6, 36/1 10,575 lbs. (75%)		
	700		700, 37W 12,370 lbs. (100%) 700, 61W 11,570 lbs. (100%)	
LS-0148	636	636, 26/7 12,500 lbs. (50%)		
	636	636, 54/7 11,180 lbs. (50%)		636, 37W 21,690 lbs. (90%)
	715	715.5, 36/1 11,175 lbs. (75%)	715.5, 37W 12,640 lbs. (100%) 715.5, 61W 11,835 lbs. (100%)	
	750		750, 37W 2,990 lbs. (100%) 750, 61W 12,160 lbs. (100%)	
LS-0149	795	795, 36/1 12,405 lbs. (75%)	795, 37W 13,770 lbs. (100%) 795, 61W 12,900 lbs. (100%)	
	800		800, 37W 13,850 lbs. (100%) 800, 61W 12,970 lbs. (100%)	

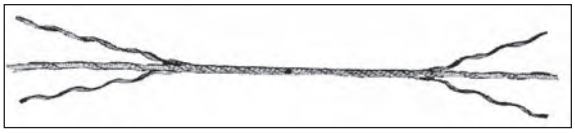
Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".
(2) For sizes or strandings not shown, consult PLP.

Conductor Splices: Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
	MIN.	MAX.							
LS-0150	1.051	1.091	874.5, 36/1 874.5, 37W-61W All-Alum.	3	45	127	.310	4	Black
LS-0151	1.092	1.136	795, 54/7 954, 37W– 61W All-Alum.	3	59	137	.365	4	Purple
LS-0152	1.137	1.183	954, 36/1– 45/7 1,033.5, 37W– 61W All-Alum.	3	62	141	.365	4	Red
LS-0153	1.184	1.232	1,033.5, 36/1– 45/7 1,113, 61W All-Alum.	3	63	143	.365	4	Blue
LS-0155	1.300	1.353	1,272, 45/7 1,272, 61W All-Alum.	3	101	165	.436	4	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.
(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.
(3) For an example of applied overall diameter, see "O.D. CALCULATIONS" at the beginning of this section.

Conductor Splices: Aluminum

RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses.				
CATALOG NUMBER	NOMINAL CONDUCTOR SIZE	ACSR	ALL-ALUMINUM	ALUMINUM ALLOY
LS-0150	715.5	715.5, 26/7 14,050 lbs. (50%)		
	795	795, 45/7 11,450 lbs. (50%)		
	874.5	874.5, 36/1 13,425 lbs. (75%)	874.5, 37W 14,830 lbs. (100%) 874.5, 61W 14,200 lbs. (90%)	
LS-0151	795	795, 54/7 14,250 lbs. (50%) 795, 26/7 15,600 lbs. (50%)		795, 37W 27,135 lbs. (90%)
	900	900, 45/7 12,700 lbs. (50%)	900, 37W 15,270 lbs. (100%) 900, 61W 14,310 lbs. (90%)	
	954		954, 37W 16,180 lbs. (100%) 954, 61W 15,175 lbs. (90%)	
LS-0152	874.5	874.5, 54/7 15,700 lbs. (50%)		
	900	900, 54/7 16,5150 lbs. (50%)		
	954	954, 36/1 14,640 lbs. (75%) 954, 45/7 13,450 lbs. (50%)		
	1,000		1,000, 37W 16,960 lbs. (100%) 1,000, 61W 15,900 lbs. (90%)	
	1,033.5		1,033.5, 37W 17,530 lbs. (100%) 1,033.5, 61W 16,430 lbs. (90%)	
LS-0153	954	954, 54/7 17,100 lbs. (50%)		954, 37W 32,780 lbs. (90%)
	1,033.5	1,033.5, 36/1 15,825 lbs. (75%) 1,033.5, 45/7 14,450 lbs. (50%)		
	1,113		1,113, 61W 17,690 lbs. (90%)	
LS-0155	1,272	1,272, 45/7 17,700 lbs. (50%)	1,272, 61W 19,800 lbs. (90%)	

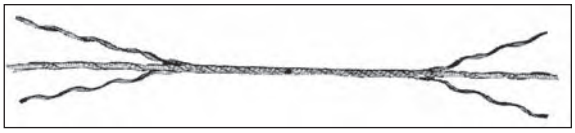
Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".
(2) For sizes or strandings not shown, consult PLP.

Conductor Splices

For use on:
AWAC® Conductor



ALUMINUM								
CATALOG NUMBER	CONDUCTOR SIZE AWAC	CONDUCTOR SIZE OUTSIDE DIAMETER (INCHES)	UNITS PER CARTON	WT/LBS PER CARTON	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
LS-0185	#4 AWAC 4/3	.281	50	21	33	.121	3	Green
LS-0186	#3 AWAC 4/3	.316	50	27	36	.136	3	Purple
LS-0187	#2 AWAC 5/2	.330	50	24	36	.121	3	Green
LS-0188	#2 AWAC 4/3	.355	50	35	40	.146	3	Purple
LS-0189	#1 AWAC 4/3	.398	50	50	45	.167	3	Red
LS-0190	1/0 AWAC 5/2	.416	50	40	44	.136	3	Orange
LS-0191	1/0 AWAC 4/3	.447	50	61	50	.167	3	Brown
LS-0192	2/0 AWAC 5/2	.467	50	49	47	.146	3	Orange
LS-0193	2/0 AWAC 4/3	.502	50	41	55	.182	3	Black
LS-0194	3/0 AWAC 4/3	.564	50	55	59	.204	3	Yellow
ALUMINUM-CLAD STEEL								
LS-5112	#4 AWAC 3/4	.307	50	34	30	.102	3	Purple
LS-5113	#4 AWAC 2/5	.340	50	46	33	.114	3	Blue
	#3 AWAC 3/4	.344						
LS-5114	#3 AWAC 2/5	382	50	67	38	.128	3	Brown
	#2 AWAC 3/4	.386						
LS-5115	#2 AWAC 2/5	.429	25	55	50	.144	3	Green
	#1 AWAC 3/4	.434						
LS-5116	#1 AWAC 2/5	.482	25	75	55	.162	3	Red
	1/0 AWAC 3/4	.487						
LS-5117	1/0 AWAC 2/5	.541	10	48	67	.183	3	Green
	2/0 AWAC 3/4	.547						

Right-hand lay standard

EXPLANATORY NOTES:

(1) Conductor Splices for AWAC stranded 6/1, selected sizes stranded 5/2 and 5/4, not appearing above, can be found earlier in this section.
(2) Rated Holding Strengths are listed on the next page.
(3) Consult PLP for sizes, strandings, or lay direction not shown.
(4) For an example of applied overall diameter see O.D. CALCULATIONS at the beginning of this section.
(5) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splices

RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses.								
	AWAC® SIZES							
CATALOG NUMBER	#4	#3	#2	#1	1/0	2/0	3/0	4/0
LS-0185	#4, 4/3 4,190 lbs. (100%)							
LS-5112	#4, 3/4 6,130 lbs. (100%)							
LS-5113	#4, 2/5 8,960 lbs. (100%)							
LS-0186		#3, 4/3 5,260 lbs. (100%)						
LS-5113		#3, 3/4 7,700 lbs. (100%)						
LS-5114		#3, 2/5 11,300 lbs. (100%)						
LS-0119			#2, 6/1 1,590 lbs. (100%)					
LS-0187			#2, 5/2 4,370 lbs. (100%)					
LS-0188			#2, 4/3 6,600 lbs. (100%)					
LS-5114			#2, 3/4 9,690 lbs. (100%)					
LS-5115			#2, 2/5 13,500 lbs. (100%)					
LS-0189				#1, 4/3 8,100 lbs. (100%)				
LS-5115				#1, 3/4 11,200 lbs. (100%)				
LS-5116				#1, 2/5 16,500 lbs. (100%)				
LS-0190					1/0, 5/2 6,580 lbs. (100%)			
LS-0191					1/0, 4/3 9,680 lbs. (100%)			
LS-5116					1/0, 3/4 13,800 lbs. (100%)			
LS-5117					1/0, 2/5 19,500 lbs. (100%)			
LS-0192						2/0, 5/2 8,030 lbs. (100%)		
LS-0193						2/0, 4/3 11,900 lbs. (100%)		
LS-5117						2/0, 3/4 16,400 lbs. (100%)		
LS-0194							3/0, 4/3 14,200 lbs. (100%)	

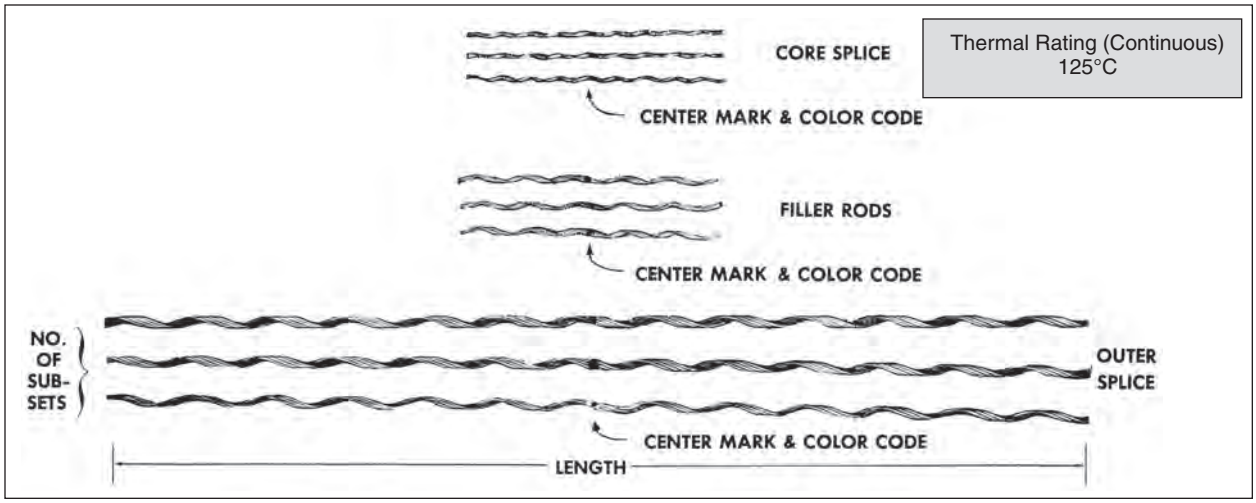
Right-hand lay standard

EXPLANATORY NOTES:

(1) Conductor Splices for AWAC stranded 6/1 or selected sizes stranded 5/2, not appearing above, can be found earlier in this section.
(2) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".
(3) Consult PLP for sizes, stranding or lay direction not shown.
(4) AWAC is a registered trademark of the Copperweld Co.

ACSR Full Tension Splice

NOMENCLATURE



Sub-Sets: Individual rods assembled into groups of two, three, or four.

Core Splice: Galvanized steel, sub-setted and gritted.

Filler Rods: Aluminum alloy, sub-setted, or single rods, not gritted. Filler Rods are not required for selected sizes corresponding to tabular information on catalog pages.

Outer Splice: Aluminum alloy, sub-setted and gritted.

Center Mark: Establishes recommended alignment of rods during application.

Color Code and Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog pages.

IdentificationTape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

SPLICE: ACSR F.T. is designed as a three component assembly generally for Sub-EHV applications. Full Tension Splices are available for EHV applications. Contact PLP for details.



The Core Splice is applied after removal of the aluminum strands down to the steel core.



Filler rods, when required, are applied over the Core Splice to re-establish the original outside diameter of the conductor.



The Outer Splice is identical in design to the Conductor Splice (earlier in this section) except for the overall length.

JOINING: This splice will hold the full rated breaking strength of, and provide better conductivity than, an equal length of unspliced ACSR conductor.

RESTORATIVE-REPAIR: *Splice: ACSR F.T.* will restore original conductivity and full rated breaking strength to ACSR conductor. This splice is recommended when damage to the core itself is suspected.

Other PREFORMED™ products with restorative-repair capabilities are *Armor Rods, Line Guards,* and *ARMOR-GRIP® Suspension: for Line Repair.*

RATED HOLDING STRENGTH: Published for individual sizes on the page following the specification page. In arriving at "Rated Hold Strength," actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed.

APPLICATION-INSPECTION: All conductors, new or weathered, must be thoroughly scratch-brushed until bright and clean. Immediately thereafter, an industry accepted inhibitor (compatible with the product) should be applied before installing the product.

ACSR Full Tension Splice

GENERAL RECOMMENDATIONS (cont.)

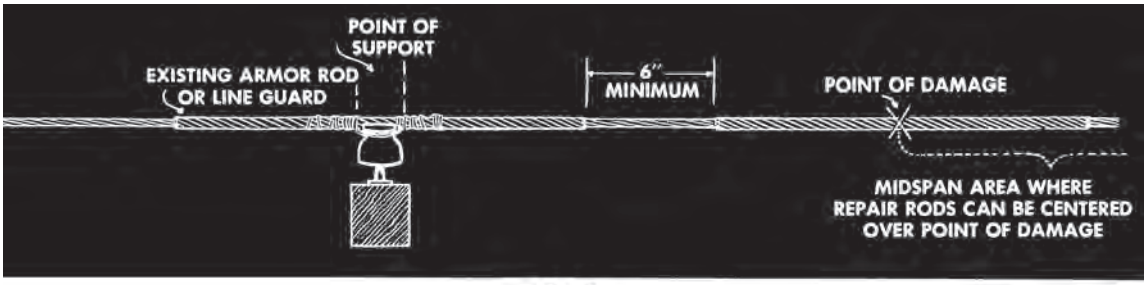


FIG. 1

When centered over the point of damage, the ends of the *Splice: ACSR F.T.* should not be positioned closer than 6 inches to existing *Armor Rods* or *Line Guards.* The restorative-repair function of this splice should be limited to damage located out in the "Midspan Area" or at the "Point of Support" (see Fig. 1).

TAPPING: Tapping over a *Splice: ACSR F.T.* is permissible. Whenever a tapping clamp will be installed over a splice, it is imperative that the conductor be scratch brushed and an inhibitor be used. The outer surface of the splice should be thoroughly scratch brushed to remove any oxides and glue which may be present. Inhibitor should then be applied to the area beneath the tap itself.

DESIGN MODIFICATIONS

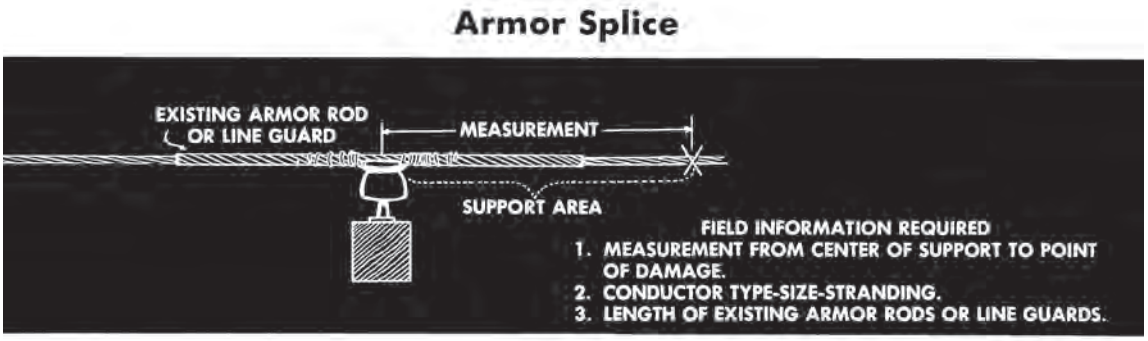


FIG. 2

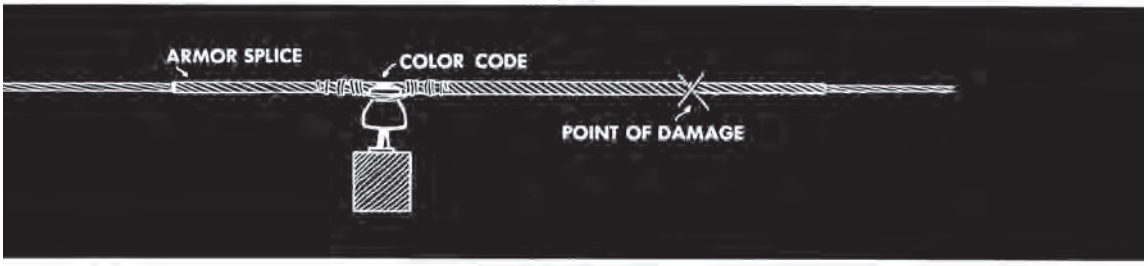


FIG. 3

The *Armor Splice* combines the features of both *Armor Rods* and *Conductor Splices,* which are described in their respective catalog sections. The *Armor Splice* should be considered when damage occurs in the "support area," or where installation would locate the ends of repair rods within 6 inches of existing rods.

Upon receipt of the field information specified in Figure 2, Preformed Line Products will furnish the correct Catalog Number.

The *Armor Splice* is custom designed to assure that when the color code mark is centered at the support point, a continuous length will extend beyond the area of damage. (See Figure 3)

ACSR Full Tension Splice

O.D. CALCULATIONS

Applied overall diameter computed as follows:
Conductor O.D. can be found in the Conductor Chart, General Information Section.

Rod Diam.	.121" x 2 = .242"
Conductor Diam.	+ .398"
Total Applied O.D.	.640"

For use on: ACSR

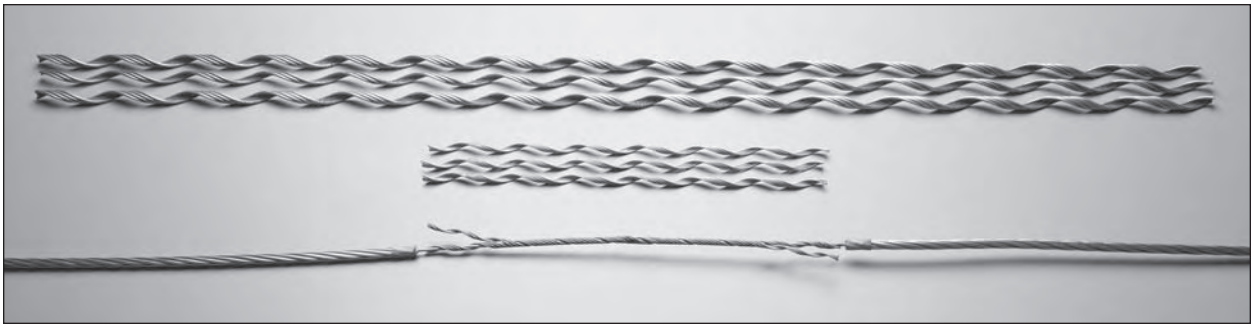
CATALOG NUMBER	ACSR CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	OUTER SPLICE LENGTH (INCHES)	OUTER SPLICE NO. OF SUBSETS	ROD DIAMETER (INCHES)	COLOR CODES CORE	COLOR CODES FILLER	COLOR CODES OUTER
FTS-5100	#4, 6/1	100	34	35	3	.094	Black	None	Orange
FTS-5101	#4, 7/1	100	34	35	3	.094	Black	None	Orange
FTS-5102	#2, 6/1	100	58	44	3	.102	Black	None	Red
FTS-5103	#2, 7/1	100	66	45	3	.102	Black	None	Red
FTS-5104	1/0, 6/1	50	80	52	3	.121	Black	Black	Yellow
FTS-5105	2/0, 6/1	50	65	55	3	.136	Black	Black	Blue
FTS-5108	3/0, 6/1	25	38	59	3	.146	Black	Black	Orange
FTS-5110	4/0, 6/1	25	56	67	3	.167	Black	Black	Red
FTS-5106	101.8, 12/7	25	40	65	3	.136	Black	None	Blue
FTS-5107	110.8, 12/7	25	50	69	3	.136	Black	None	Green
FTS-5109	134.6, 12/7	10	68	75	3	.167	Black	None	Purple

Right-hand lay standard

EXPLANATORY NOTES:

(1) ACSR Conductor Sizes should be used only with Catalog Numbers shown. Consult PLP for sizes or strandings not shown.
(2) Rated Holding Strengths are 100% of the published RBS for the specified conductor.

ACSR Full Tension Splice



CATALOG NUMBER	ACSR CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	OUTER SPLICE LENGTH (INCHES)	OUTER SPLICE NO. OF SUBSETS	ROD DIAMETER (INCHES)	COLOR CODES CORE	COLOR CODES FILLER	COLOR CODES OUTER
FTS-5111	266.8, 26/7	10	40	91	3	.182	Black	Black	Yellow
FTS-5112	336.4, 18/1	10	40	87	3	.204	Black	Black	Blue
FTS-5113	336.4, 26/7	10	65	103	3	.250	Black	Black	Green
FTS-5114	336.4, 30/7	10	70	108	3	.250	Black	Black	Orange
FTS-5115	397.5, 26/7	5	40	110	3	.250	Black	Black	Purple
FTS-5116	477, 24/7	5	40	113	3	.250	Black	Black	Blue
FTS-5117	477, 26/7	5	48	120	4	.250	Black	Black	Blue
FTS-5118	556.5, 26/7	3	44	129	3	.310	Black	Black	Green
FTS-5119	636, 24/7	3	48	132	4	.310	Black	Black	Yellow
FTS-5120	636, 26/7	3	50	134	4	.310	Black	Black	Yellow
FTS-5121	795, 45/7	3	52	153	4	.310	Black	Black	Blue
FTS-5122	795, 26/7	3	78	158	4	.365	Black	Black	Orange
FTS-5123	1,272, 45/7	3	133	203	4	.463	Black	Black	Yellow

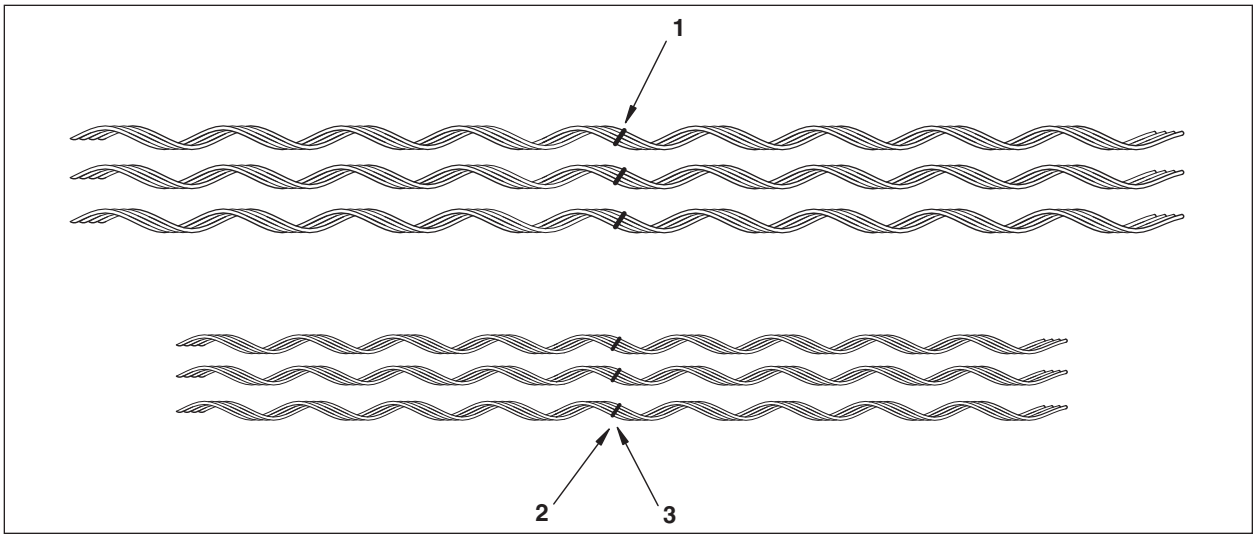
Right-hand lay standard

EXPLANATORY NOTES:

(1) ACSR Conductor Sizes should be used only with Catalog Numbers shown. Consult PLP for sizes or strandings not shown.
(2) Rated Holding Strengths are 100% of the published RBS for the specified conductor.

THERMOLIGN® Splice

NOMENCLATURE



1. Inner Rods, Multiple Subsets (Aluminum Alloy)
2. Outer Rods, Multiple Subsets (Aluminum Alloy)
3. Center Mark & Color Code

GENERAL RECOMMENDATIONS

The THERMOLIGN Splice is intended for use on ACSS/AW and ACCR (not for use on conductors with trapezoidal outer strands). The design allows for continuous conductor operating temperatures up to 250°C.

FEATURES AND BENEFITS

- No compression press and dies required - installation time is minimal
- Simple two layer design - no need to separately expose and splice core

GENERAL SPECIFICATIONS

Holding strength: 95% or more of the conductor rated breaking strength (RBS).

Thermal Rating (Continuous)
250°C

THERMOLIGN® Splice

For use on:
ACSS/AW, ACCR (Round Wire)
Not intended for use on conductor with trapezoidal outer strands.



Catalog Number	Diameter Range		Length Inches			
	Min.	Max.	Nominal Cond. (kcmil)	Inner Rods	Outer Rods	Color Code
TLSP-0100	0.720" (18.3mm)	0.720" (18.3mm)	336.4	118	108	Blue
TLSP-0101	0.741" (18.8mm)	0.752" (19.1mm)	336.4, 397.5	119	109	Brown
TLSP-0102	0.772" (19.6mm)	0.783" (19.3mm)	397.5	121	111	Pink
TLSP-0103	0.806" (20.5mm)	0.823" (20.9mm)	397.5, 477	124	114	Green
TLSP-0104	0.846" (21.5mm)	0.860" (21.8mm)	477	131	121	Red
TLSP-0105	0.883" (22.4mm)	0.883" (22.4mm)	477	133	123	Purple
TLSP-0106	0.901" (22.9mm)	0.914" (23.2mm)	556.5	135	125	Yellow
TLSP-0107	0.927" (23.5mm)	0.930" (23.6mm)	556.5	136	126	Orange
TLSP-0108	0.953" (24.2mm)	0.953" (24.2mm)	556.5, 605	146	136	Black
TLSP-0109	0.963" (24.5mm)	0.977" (24.8mm)	605, 636	147	137	Blue
TLSP-0110	0.990" (25.1mm)	0.994" (25.2mm)	605, 636	149	139	Brown
TLSP-0111	1.000" (25.4mm)	1.019" (25.9mm)	636, 666	151	141	Pink
TLSP-0112	1.036" (26.3mm)	1.063" (27.0mm)	715.5, 795	152	142	Green
TLSP-0113	1.081" (27.4mm)	1.092" (27.7mm)	715.5, 795	154	144	Red
TLSP-0114	1.108" (28.1mm)	1.140" (29.0mm)	795	159	149	Black
TLSP-0115	1.162" (29.5mm)	1.175" (29.8mm)	954	162	152	Purple
TLSP-0116	1.196" (30.4mm)	1.212" (30.8mm)	954, 1033.5	163	153	Yellow
TLSP-0117	1.240" (31.5mm)	1.259" (32.0mm)	1033.5, 1113	165	155	Orange
TLSP-0118	1.290" (32.8mm)	1.302" (33.1mm)	1113, 1192.5	171	161	Black
TLSP-0119	1.338" (34.0mm)	1.345" (34.2mm)	1192.5, 1272	174	164	Blue
TLSP-0120	1.380" (35.1mm)	1.386" (35.2mm)	1272, 1351.5	177	167	Red
TLSP-0121	1.420" (36.1mm)	1.427" (36.2mm)	1351.5, 1431	181	171	Purple
TLSP-0122	1.465" (37.2mm)	1.466" (37.2mm)	1431	183	173	Yellow
TLSP-0123	1.492" (37.9mm)	1.505" (38.2mm)	1510.5, 1590	185	175	Orange
TLSP-0124	1.540" (39.1mm)	1.544" (39.2mm)	1590	188	178	Green

PREFORMED LINE PRODUCTS

Section 4 – Transmission: Spacer & Spacer Dampers

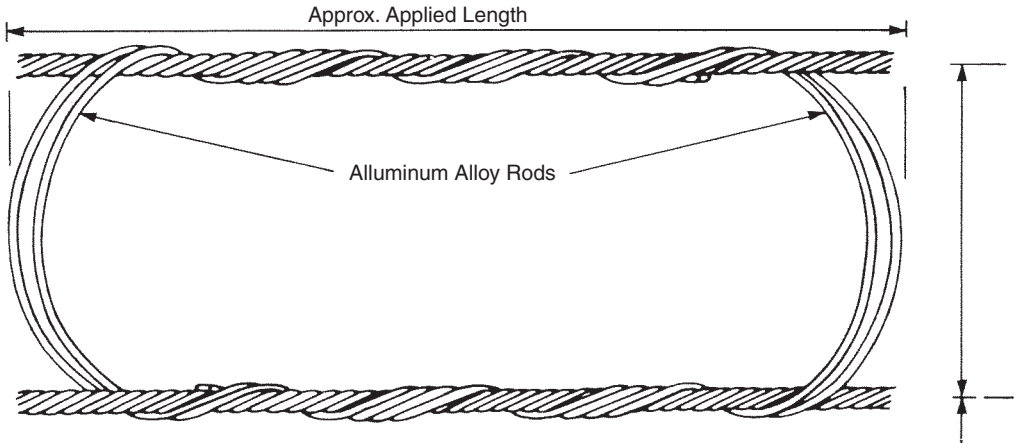
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Helical Rod Spacer

NOMENCLATURE

Thermal Rating (Continuous) 125°C



GENERAL RECOMMENDATIONS

Intended Use: The HELICAL ROD Spacer is recommended for use on **horizontal**, twin conductor bundles.

The functions of the HELICAL ROD Spacer are: to provide uniform spacing of horizontally bundled subconductors, to insure consistent electrical characteristics; to minimize wind induced motions such as subconductor oscillation and aeolian vibration so that no conductor damage results; to keep the subconductors from entangling due to galloping, ice unloading, and fault currents.

Materials: The standard HELICAL ROD Spacer for aluminum based conductors is constructed entirely of high strength aluminum alloy wire formed into helical rods. There are no loose parts or troublesome articulated joints to create radio noise through looseness. To avoid galvanic corrosion spacer rod material is always designed to be compatible with the conductor. Materials other than aluminum are available for special application to copper based conductor and galvanized steel wire.

RIV-Corona: Helical Spacers are designed to be corona-free at voltages 10-20% above operating up to 500 kV AC and 750 kV DC.

Installation and Inspection: The spacer is applied easily and uniformly without tools and can be installed with hot line tools. It is a simple matter to inspect for proper application from the ground since there are no bolts that need special torquing during installation.

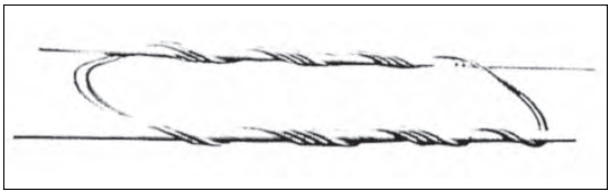
Fault Currents: The HELICAL ROD Spacer is designed to meet fault current requirements developed in most EHV line design. For special situations the fault current capacity of the standard 4-rod helical spacer can be increased by adding additional rods and/or increasing rod diameter. Complete fault current testing and analysis has been completed for the HELICAL ROD Spacer and is published in AIEE paper DP 58-779, and IEEE paper 63-88.

Spacer Placement: As a result of experimental work done on some of the early EHV lines, the normal distance between HELICAL ROD Spacers should not exceed 250-ft. However, in some geographical areas exposed to constant high winds and heavy ice accumulation, experience suggests that the spacing should be shortened in order to stabilize the conductor bundle. Results of laboratory and field experiments indicate that one of the most effective methods to reduce subconductor oscillation and increase bundle stability is by reducing subspan lengths and placing spacers in a non-symmetrical pattern. Asymmetric spacing detunes the entire spacer-conductor system and thereby reduces the incidence of sympathetic vibration between subspans.

Specific recommendations for spacer design and spacer placement should be predicated on an evaluation of the electrical characteristics, the line design parameters, and the environmental conditions. Through your representative, PLP will help determine the most suitable spacer design and placement pattern for your line conditions.

Helical Rod Spacer – Twin-18"

For use on:
ACSR, Aluminum Alloy
All-Aluminum, AWAC®
Compacted All-Aluminum
Compacted ACSR



CATALOG NUMBER	DIAMETER RANGE (INCHES)		TYPICAL CONDUCTOR SIZE	APPROX. APPLIED LENGTH (INCHES)	COLOR CODE
	MIN.	MAX.			
SU-MS-7424	.800	.835	397.5, 30/7	35	Purple
SU-MS-3352	.836	.868	477, 26/7	35	Blue
SU-MS-7425	.869	.910	477, 30/7	35	Green
SU-MS-3540	.911	.950	556.5, 26/7	44	Black
SU-MS-5423	.951	.994	715.5, 37-61W, All Alum.	44	Brown
SU-MS-7426	.995	1.038	666.6, 24/7	45	Orange
SU-MS-5504	1.039	1.088	795, 45/7	45	Blue
SU-MS-1245	1.089	1.140	795, 26/7	45	Yellow
SU-MS-3850	1.141	1.196	954, 54/7	46	Orange
SU-MS-6070	1.197	1.250	1113, 61W, All Alum.	46	Purple
SU-MS-5276	1.251	1.305	1272, 61W, All Alum.	46	Green
SU-MS-5519	1.306	1.365	1272, 45/7	48	Yellow
SU-MS-7228	1.366	1.425	1272, 54/19	48	Black
SU-MS-5285	1.426	1.492	1431, 54/19	49	Brown
SU-MS-4397	1.493	1.562	1590, 54/19	49	Red
SU-MS-5056	1.563	1.619	1780, 84/19	50	Green
SU-MS-4767	1.620	1.678	2000, 72/7	50	Yellow
SU-MS-5462	1.679	1.731	2250, 91W, All Alum.	50	Brown
SU-MS-4656	1.732	1.795	2156, 84/19	50	Orange
SU-MS-3807	1.796	1.855	2500, 91W, All Alum.	50	Red
SU-MS-6183	1.856	1.923	2750, 91W, All Alum.	50	Blue

Right-hand lay standard

EXPLANATORY NOTES:

(1) Typical Conductor Size indicates one of various conductors within each range.
(2) Design for conductors below .800" diameter available upon request.
(3) Designs for other spacing and conductor materials available upon request.
(4) AWAC and Copperweld are registered trademarks of the Copperweld Co.

CUSHION-GRIP™ Twin Spacer

GENERAL INFORMATION

The CUSHION-GRIP Twin Spacer is simple to install and is shipped fully assembled (no loose parts).

The break-away bolt provides a clear indication that the proper installation torque has been achieved (no special tools required).

Conductor Spacing is 18 inches.

Catalog Number	Diameter Range		Nominal Conductor (kcmil)
	min	max	
CGTS-0101	0.673	0.713	336.4
CGTS-0102	0.714	0.752	336.4, 397.5
CGTS-0103	0.753	0.791	397.5
CGTS-0104	0.792	0.831	477
CGTS-0105	0.832	0.870	477
CGTS-0106	0.871	0.909	477, 556.5
CGTS-0107	0.910	0.949	556.5
CGTS-0108	0.950	0.988	605
CGTS-0109	0.989	1.028	605, 636
CGTS-0110	1.029	1.067	715.5, 795
CGTS-0111	1.068	1.106	795
CGTS-0112	1.107	1.146	795
CGTS-0113	1.147	1.185	954
CGTS-0114	1.186	1.224	954, 1033.5
CGTS-0115	1.225	1.264	1033.5, 1113
CGTS-0116	1.265	1.303	1113, 1192.5
CGTS-0117	1.304	1.345	1192.5
CGTS-0118	1.344	1.346	1272
CGTS-0119	1.383	1.421	1351.5
CGTS-0120	1.422	1.461	1431
CGTS-0121	1.462	1.500	1510.5
CGTS-0122	1.501	1.539	1590
CGTS-0123	1.540	1.579	1590
CGTS-0124	1.580	1.618	1780
CGTS-0125	1.619	1.657	1780
CGTS-0126	1.658	1.697	2034
CGTS-0127	1.698	1.736	2034
CGTS-0128	1.737	1.776	2116.7

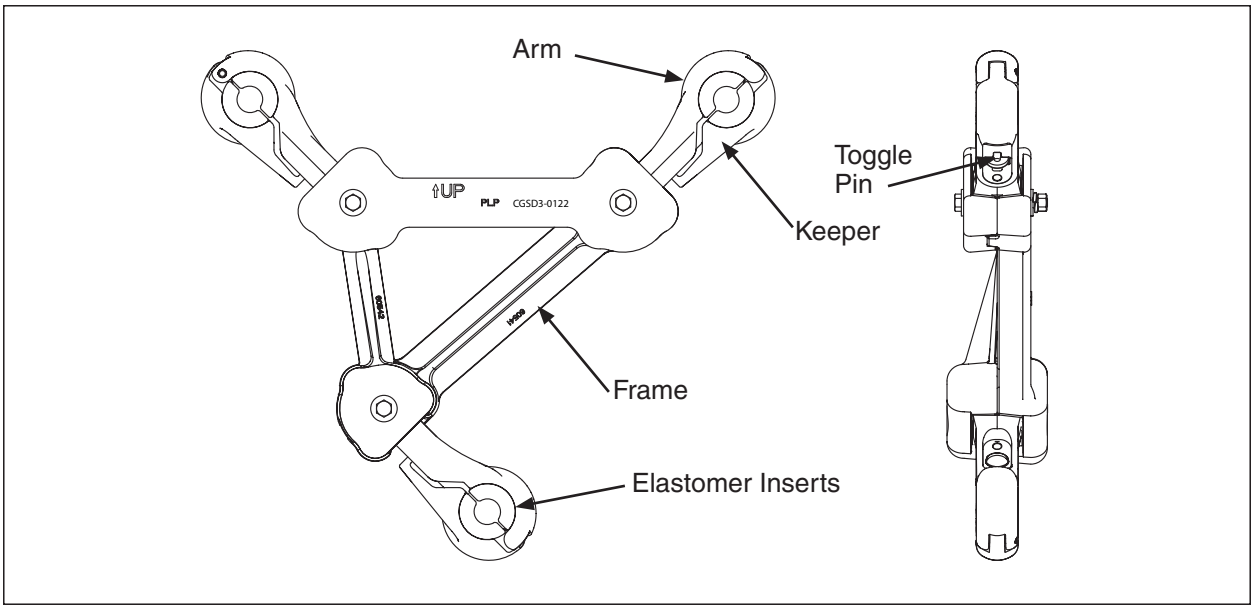


Thermal Rating (Continuous) 125°C

CUSHION-GRIP™ Spacer Damper (Type "B" & Type "C")

NOMENCLATURE

Thermal Rating (Continuous) 125°C



GENERAL INFORMATION

The CUSHION-GRIP Spacer Dampers for Twin, Tri, Quad and Hex Bundles feature elastomer damping elements engineered to absorb maximum energy. This design provides the greatest possible resistance to conductor fatigue by eliminating the need for additional vibration dampers

UNIQUE DESIGNS

The Type "B" design was developed in cooperation with the Engineering Team at PLP-Brazil to meet the demanding requirements of IEC Specification 61854, while maintaining a light overall weight and exceptional performance.

The Type "C" design was developed in conjuction with PLP-Great Britain to exceed the extremely difficult performance requirements established by the National Grid Company in the early 1990s. As such, this design is heavier and more robust and is well suited for areas where traditional spacer dampers have experienced premature performance problems or failures.

PATENTED DAMPING ELEMENTS

Both the Type "B" and Type "C" designs employ unique damping elements which are captured in a way which assures the elastomer is always in compression, providing maximum service life.

FIELD PROVEN

Both spacer damper designs have been used extensively throughout Europe and Brazil since their introduction in the early 1990s.

CLAMP FASTENER ASSURES PROPER INSTALLATION

A high strength 1/4 turn fastener is employed in the elastomer lined conductor clamp to insure proper installation. This design provides consistent compression of the elastomer liners without relying on specific bolt torque values or bolts with break-away heads.

PLACEMENT IS THE KEY TO PERFORMANCE

PLP's extensive experience and laboratory and field testing allow us to provide you with placement recommendations that will minimize the motion of conductor bundles and maximize the longevity of the Spacer Damper.

CUSHION-GRIP™ Spacer Damper (Type "B" & Type "C")

ORDERING INFORMATION

For standard 18" (457mm) sub-conductor spacing the catalog numbers are:

CGSDT-X45YZ
Where T is B for Type "B" or "C" for Type "C"
YZ is taken from the conductor range table below
X is 2 for Twin, 3 for Tri, 4 for Quad, 6 for Hex

Example:
CGSDB-34529 is a Type "B" Spacer Damper for a Tri Bundle of conductors within a diameter range of 1.107" to 1.146" (28-29mm).



YZ	Conductor Range Inches (mm)
18	0.673-0.713 (17-18)
19	0.714-0.752 (18-19)
20	0.753-0.791 (19-20)
21	0.792-0.831 (20-21)
22	0.832-0.870 (21-22)
23	0.871-0.909 (22-23)
24	0.910-0.949 (23-24)
25	0.950-0.988 (24-25)
26	0.989-1.028 (25-26)
27	1.029-1.067 (26-27)
28	1.068-1.106 (27-28)
29	1.107-1.146 (28-29)
30	1.147-1.185 (29-30)
31	1.186-1.224 (30-31)

YZ	Conductor Range Inches (mm)
32	1.225-1.264 (31-32)
33	1.265-1.303 (32-33)
34	1.304-1.345 (33-34)
35	1.346-1.382 (34-35)
36	1.383-1.421 (35-36)
37	1.422-1.461 (36-37)
38	1.462-1.500 (37-38)
39	1.501-1.539 (38-39)
40	1.540-1.579 (39-40)
41	1.580-1.618 (40-41)
42	1.619-1.657 (41-42)
43	1.658-1.697 (42-43)
44	1.698-1.736 (43-44)
45	1.737-1.776 (44-45)

Contact PLP for other sub-conductor spacings and configurations.

Catalog Number	Description
00071004	CUSHION-GRIP Spacer Damper installation tool



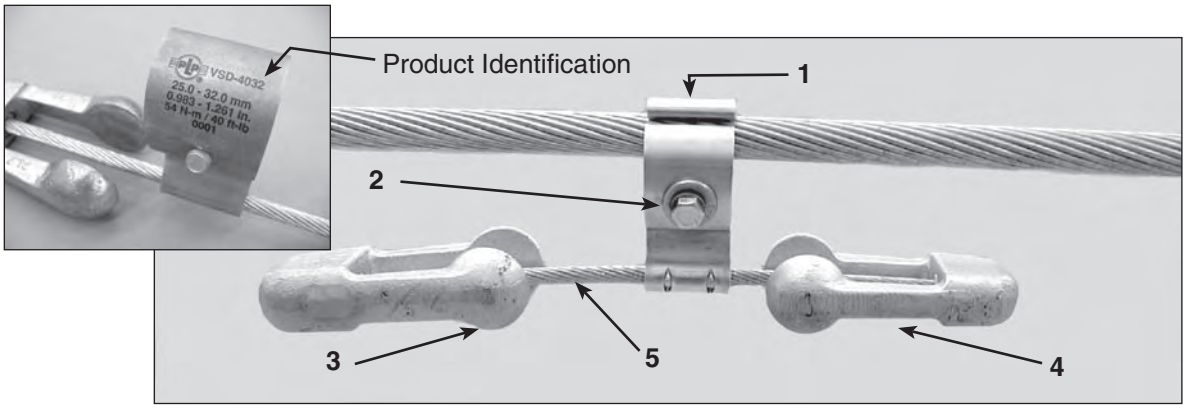
PREFORMED LINE PRODUCTS

Section 5 – Transmission: Motion Control

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Spiral Vibration Damper (Standard & Hi-Mass) 5-6
Air Flow Spoiler 5-9

VORTX™ Vibration Damper



NOMENCLATURE

1. **Clamp & Keeper:** The Clamp has an extruded hook shaped profile to hang onto the cable or conductor while tightening the keeper. Together, the aluminum keeper and clamp capture the conductor to hold the damper assembly firmly onto the conductor or cable. Product identification, installation torque, and lot number are permanently etched on the clamp.
2. **Bolt, Washer, and Lock Washer:** The bolt, washer, and lock washer are used to fasten the keeper to the clamp and secure the entire damper assembly to the cable or conductor. The materials used are galvanized steel.
3. **Large Damper Weight:** The VORTX damper design shown above has two weight sizes – this provides up to 4 resonant response frequencies (two for the large weight and two for the small weight) for more effective protection. The weight is a galvanized ductile iron casting.
4. **Small Damper Weight:** The small weight provides damping at higher frequencies. The weight is a galvanized ductile iron casting.
5. **Messenger:** The messenger is made of formed hard steel wires that are galvanized for corrosion resistance.

Thermal Rating (Continuous) 125°C
250°C when applied over Protector Rods

GENERAL RECOMMENDATIONS

INTENDED USE: VORTX Dampers respond to wind induced line vibration that is characterized by high frequency, low amplitude motion a.k.a. aeolian vibration. The VORTX damper with Large and Small weights can achieve greater power dissipation and frequency response performance than "symmetrical weight" Stockbridge damper designs. Wider frequency coverage translates into better protection as energy is more effectively dissipated over the entire range of conductor/cable frequencies.

APPLICATION: VORTX Dampers can be clamped directly onto most aluminum based conductors including ACSR, AAC, AAAC and ACAR. PLP® Protector Rods should be considered for applications on aluminum conductors with relatively soft outer aluminum strand construction such as ACSS. Protector rods are designed to reduce direct clamping stress on cable vulnerable to surface or core damage – this includes fiber optic cable designs such as ADSS and OPGW. Protector Rods are detailed on page 5-5.

CONDUCTOR/CABLE SIZE: Generally as conductors and cables increase in size they tend to vibrate at lower frequencies. The VORTX Damper is more effective for larger size conductors while the Spiral Vibration Dampers (SVD) are generally more effective for the smaller diameter cables that can vibrate at much higher frequencies. The following table provides a general recommendation for VORTX dampers and Spirial Vibration Damper's based on conductor or cable size (see table on next page):

VORTX™ Vibration Damper

GENERAL RECOMMENDATIONS cont.

Application	Outer Diameter	Recommended Damper Product
Conductor OHSW and OPGW	up to 0.75" (19 mm)	SVD
	over 0.75" (19 mm)	VORTX
ADSS	up to 1.25" (32 mm)	SVD
	over 1.25" (32 mm)	VORTX

The degree of protection required on a specific line depends upon a number of factors such as line design, local climate, tension, exposure to wind flow, and line vibration history in the area. With assistance from your local PLP Sales Representative, the necessary information can be assembled for review and followed up with detailed PLP recommendations for your system.

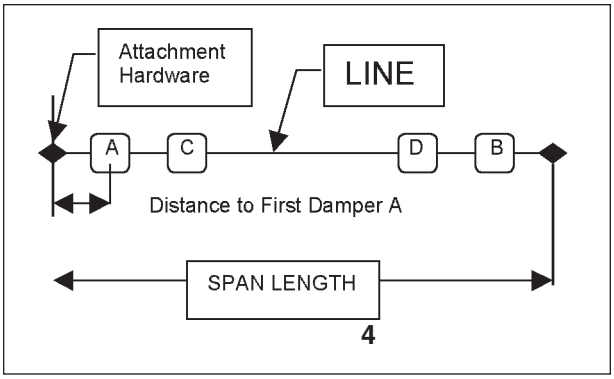
DAMPERS PER SPAN: The recommended number of dampers per span depends on the amount of wind energy exposure and the conductor/cable characteristics. Self-Damping is a conductor or cable characteristic attributed to component material and construction – for example the individual metal strands that make up a conductor can move relative to one-another and dissipate energy (much the same way as the messenger does in the damper). Increasing line tension however, will decrease self-dampening as the individual strands begin to lock together.

Single Dampers are capable of a predetermined amount of energy dissipation that can protect spans approximately 300 meters (1000 feet) long or more considering self dampening. Longer spans may require more than one damper.

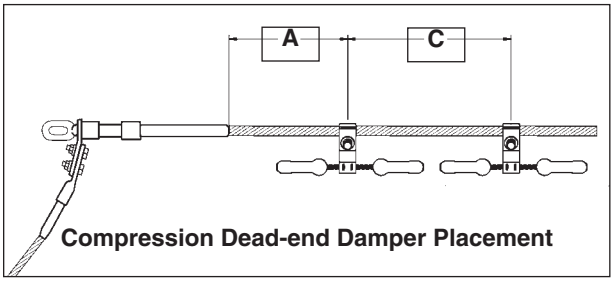
DAMPER PLACEMENT: VORTX dampers have specific performance characteristics that require strategic placement on the line to counter potential damage to the line system. Placement information shall be provided to assure that the damper will bring effective protection.

Placement information refers to locations A, B, C, and D for the first four dampers as measured from the respective hardware – See the sketch below. Longer spans that require additional protection may require dampers placed midspan. In many cases extremely long spans extend over rivers, and require additional protection due to high laminar wind speeds.

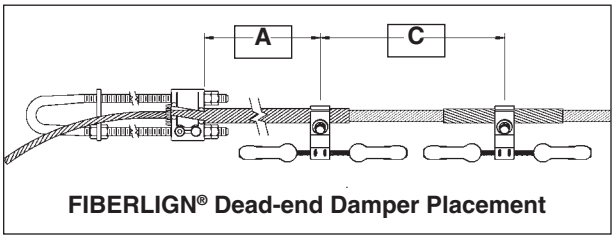
General Placement Sequence, Dampers A, B, C, and D placed 1st, 2nd, 3rd, and 4th respectively.



The general placement sequence is typical for spans with tangent hardware at both ends. Unlike tangent hardware, dead-ends are not symmetric about the point of attachment to the structure – thus it is difficult to determine the most effective placement location for single dampers. If dampers must be placed at dead-end hardware, the sequence requires dampers at A and C (or B and D) i.e. two dampers for single damper placement as shown below:



Compression Dead-end Damper Placement



FIBERLIGN® Dead-end Damper Placement

PERFORMANCE QUALIFICATION: VORTX Dampers meet the requirements of International Standard IEC 61897. This standard includes levels of acceptable performance for Forced Response, Fatigue, Weight Pull-off, Messenger Pull-out, Damper Efficiency, Corrosion Resistance, Bolt Torque, Clamp Slip, and Corona. Response curves and test reports can be provided upon request.

VORTX™ Vibration Damper

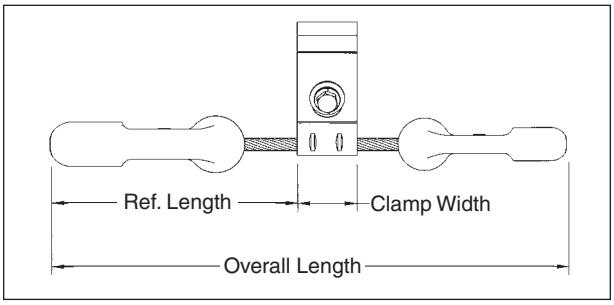
VORTX DAMPER Catalog Number code:

VSD- 40 32

"VSD" – VORTX (Stockbridge) Damper

Weight Combination (10, 20, 25, 35, 40, 50)
Weight selection is based on appropriate impedance for respective conductor or cable

Clamp Code (10, 12, 16, 20, 25, 32, 40, 50, 61)
The clamp code represents the top end of the clamp range or maximum accepted cable diameter in millimeters.



VORTX DAMPER DETAILS FOR CONDUCTOR AND SHIELD WIRE APPLICATIONS

Catalog Number*	Clamp Range Inches		Clamp Range mm		Overall Length Inches (mm)	Ref. Length Inches (mm)	Clamp Width Inches (mm)	Bolt Size (mm)	Install Torque Ft-lb (N-m)	Assembled Weight Pounds (Kilograms)
	Min	Max	Min	Max						
VSD-1012	0.381	0.483	9.7	12.3	14 (356)	5 (127)	1.6 (41)	M10 x 50	30 (41)	3.8 (1.7)
VSD-1020	0.612	0.786	15.5	20.0	14 (356)	5 (127)	2.0 (50.8)	M10 x 50	30 (41)	3.8 (1.7)
VSD-2016	0.483	0.612	12.3	15.5	18 (457)	6.9 (175)	1.6 (41)	M10 x 50	30 (41)	3.8 (1.7)
VSD-2020	0.612	0.786	15.5	20.0	18 (457)	6.9 (175)	2.0 (50.8)	M10 x 50	30 (41)	3.8 (1.7)
VSD-2025	0.786	0.983	20.0	25.0	18 (457)	6.9 (175)	2.0 (50.8)	M10 x 50	30 (41)	3.9 (1.8)
VSD-2032	0.983	1.261	25.0	32.0	18.2 (462)	6.9 (175)	2.2 (56)	M12 x 70	40 (54)	4.2 (2.0)
VSD-2520	0.612	0.786	15.5	20.0	12.5 (318)	6.5 (165)	2.0 (50.8)	M10 x 50	30 (41)	5.0 (2.3)
VSD-2525	0.786	0.983	20.0	25.0	12.5 (318)	6.5 (165)	2.0 (50.8)	M10 x 50	30 (41)	5.1 (2.3)
VSD-2532	0.983	1.261	25.0	32.0	12.5 (318)	6.5 (165)	2.2 (56)	M12 x 70	40 (54)	5.2 (2.4)
VSD-3525	0.786	0.983	20.0	25.0	15 (381)	7.0 (178)	2.0 (50.8)	M10 x 50	30 (41)	7.2 (3.3)
VSD-3532	0.983	1.261	25.0	32.0	15 (381)	7.0 (178)	2.2 (56)	M12 x 70	40 (54)	7.3 (3.3)
VSD-3540	1.261	1.579	32.0	40.1	15 (381)	7.0 (178)	2.38 (61)	M12 x 70	40 (54)	7.4 (3.4)
VSD-3550	1.579	1.970	40.1	50.0	15 (381)	7.0 (178)	2.5 (63.5)	M12 x 70	40 (54)	7.5 (3.4)
VSD-4032	0.983	1.261	25.0	32.0	25 (635)	10.5 (267)	2.2 (56)	M12 x 70	40 (54)	10.8 (4.9)
VSD-4040	1.261	1.579	32.0	40.1	25 (635)	10.5 (267)	2.38 (56)	M12 x 70	40 (54)	10.9 (4.9)
VSD-4050	1.579	1.970	40.1	50.0	25 (635)	10.5 (267)	2.5 (63.5)	M12 x 70	40 (54)	11.3 (5.1)
VSD-4061	1.970	2.403	50.0	61.0	25.5 (648)	10.5 (267)	3.0 (76)	M12 x 75	40 (54)	11.4 (5.2)
VSD-5040	1.261	1.579	32.0	40.1	28 (711)	11 (279)	2.38 (61)	M12 x 75	40 (54)	12.1 (5.5)
VSD-5050	1.579	1.970	40.1	50.0	28 (711)	11 (279)	2.5 (63.5)	M12 x 75	40 (54)	12.1 (5.5)
VSD-5061	1.970	2.403	50.0	61.0	28 (711)	11 (279)	3.0 (76)	M12 x 75	40 (54)	12.1 (5.5)

Shaded rows represent Dampers that in most cases are directly applied to ACSR, AAC, AAAC and ACAR conductors without armor rods or other protective rods.
*Verify appropriate weight code for specific conductor in catalog table titled "Weight Combination for Conductor and Shield Wire Sizes" or contact PLP technical support.

VORTX™ Vibration Damper

WEIGHT COMBINATION FOR CONDUCTOR AND SHIELD WIRE SIZES								
Weight Combination Code Number*	ACSR, AAC, AAAC and ACAR Range				Galvanized Steel and Alumoweld Range			
	Inches		mm		Inches		mm	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
10	0.381	0.472	9.7	11.9	.275	.400	7.0	10.1
20	0.473	0.720	12.0	18.2	.401	.486	10.2	12.3
25	0.721	0.857	18.3	21.7	.487	.650	12.4	16.5
35	0.858	0.983	21.8	24.9				
40	0.984	1.335	25.0	33.9				
50	1.261	1.762	32.1	44.7				

*Final selection for weight combination at merging ranges are determined from conductor type and tension. Contact PLP Technical Support for final recommendation.

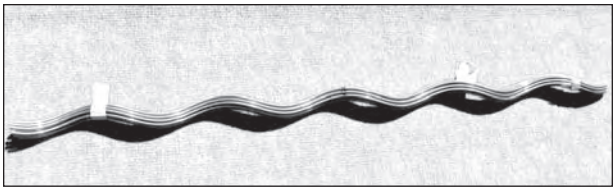
WEIGHT COMBINATION FOR OPGW				
Weight Combination Code Number*	Inches		mm	
	Min.	Max.	Min.	Max.
10	0.300	0.381	7.6	9.7
20	0.375	0.720	9.5	18.2
25	0.612	1.260	15.5	32.0
35	0.721	1.260	18.3	32.0

*Final selection for weight combination at merging ranges are determined from conductor type and tension. Contact PLP Technical Support for final recommendation.

BOLT SIZE AND TORQUE INFORMATION									
Clamp Code	Clamp Range				Bolt Thread Size	Wrench Size		Torque	
	Millimeters		Inches						
	Min.	Max.	Min.	Max.		mm	in.	N-m	Ft-lb
10	7.6	9.7	.300	.381	M10	17	11/16	41	30
12	9.7	12.3	.381	.483	M10	17	11/16	41	30
16	12.3	15.5	.483	.612	M10	17	11/16	41	30
20	15.5	20.0	.612	.786	M10	17	11/16	41	30
25	20.0	25.0	.786	.983	M10	17	11/16	41	30
32	25.0	32.0	.983	1.261	M12	19	3/4	54	40
40	32.0	40.1	1.261	1.579	M12	19	3/4	54	40
50	40.1	50.0	1.579	1.970	M12	19	3/4	54	40
61	50.0	61.0	1.970	2.403	M12	19	3/4	54	40

VORTX™ Vibration Damper

PROTECTOR RODS



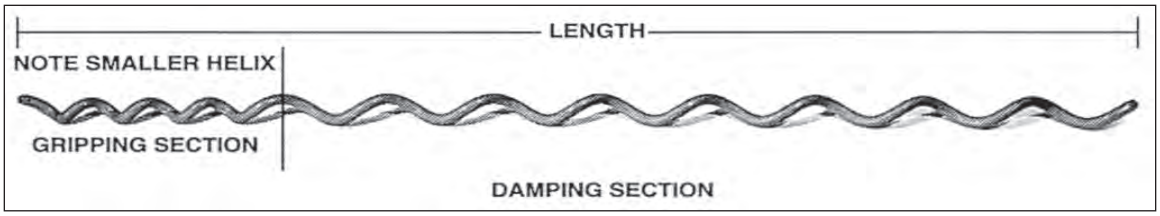
Thermal Rating (Continuous) 250°C

PROTECTOR RODS FOR VORTX DAMPER on OPGW or Special Conductors:

Protector Rods provide a layer of mechanical protection and reinforcement for accessory items such as VORTX Dampers that clamp onto a cable. This product is not designed for protection at clamp type supports or suspensions. Protector Rods are not to be used as a repair product as they are not designed to restore conductance or tensile strength to a cable or conductor. Standard Protector Rods are designed for line voltages of 230 kV and lower. For higher voltage applications, Parrot Bill rod end treatment can be provided – contact PLP for details.

PLP PROTECTOR RODS										
Catalog Number*	Cable Diameter Range Inches		Cable Diameter Range mm		Rod Length		Wire Size Inches (mm)	Color Code	Units Per Carton	Weight/ Carton Pounds (Kg)
	Min	Max	Min	Max	Inches	mm				
PR-0135	0.378	0.423	9.6	10.7	12	304	0.121 (3.1)	Yellow	50	10 (4.5)
PR-0137	0.424	0.475	10.8	12.1	12	304	0.121 (3.1)	Brown	50	10 (4.5)
PR-0139	0.476	0.533	12.1	13.5	16	406	0.121 (3.1)	Blue	50	14 (6.4)
PR-0141	0.534	0.585	13.6	14.8	16	406	0.121 (3.1)	Green	50	14 (6.4)
PR-0142	0.586	0.618	14.9	15.6	16	406	0.146 (3.7)	Orange	50	21 (9.5)
PR-0144	0.619	0.667	15.7	16.9	16	508	0.146 (3.7)	Purple	50	21 (9.5)
PR-0146	0.668	0.722	17.0	18.3	20	508	0.146 (3.7)	Red	50	29 (13.1)
PR-0148	0.723	0.816	18.4	20.3	20	508	0.146 (3.7)	Black	50	29 (13.1)
PR-0150	0.817	0.898	20.8	22.7	20	508	0.146 (3.7)	White	50	31 (14.1)
PR-0151	0.899	0.954	22.8	24.2	24	610	0.167 (4.2)	Yellow	50	47 (21.3)
PR-0152	0.955	1.019	24.3	25.8	24	610	0.182 (4.6)	Brown	25	29 (13.1)
PR-0154	1.020	1.064	25.9	27.0	24	610	0.182 (4.6)	Blue	25	29 (16.1)
PR-0155	1.065	1.098	27.1	27.8	26	660	0.204 (5.2)	Green	25	36 (16.3)
PR-0156	1.099	1.181	27.9	29.9	26	660	0.250 (6.4)	Orange	25	48 (21.7)
PR-0158	1.182	1.298	30.0	32.9	26	660	0.250 (6.4)	Purple	25	51 (23.1)
PR-0160	1.299	1.415	33.0	35.9	26	660	0.250 (6.4)	Blue	20	44 (19.9)
PR-0162	1.416	1.543	36.0	39.2	26	660	0.250 (6.4)	Yellow	20	48 (21.7)
PR-0163	1.544	1.685	39.2	42.8	26	660	0.250 (6.4)	Brown	15	40 (18.1)
PR-0164	1.686	1.840	42.8	46.7	26	660	0.250 (6.4)	Blue	15	42 (19.0)

Spiral Vibration Damper



NOMENCLATURE

Length: Assists in identification of conductor size, corresponding to tabular information appearing on following page.

Damping Section: Helically scaled for interplay of damper and conductor, to provide the action/reaction motion that opposes the natural vibration wave.

Gripping Section: Has a smaller helix designed to the grip conductor.

Thermal Rating (Continuous) 125°C

GENERAL RECOMMENDATIONS

Damping devices are designed for the single purpose of reducing vibration. This single function is entirely different from that of protecting against (1) stress concentrations, (2) fretting or abrasion, and (3) arc-over burning. Because of this, damping devices should be considered only as supplemental to *WRAPLOCK® Tie, Armor Rod, Side Tie, Spool Tie*, or other hardware at tangent supports. Dampers are also used as supplemental protection at dead-ends.

The degree of protection needed on a specific line depends upon a number of factors such as line design, temperature, tension, exposure to wind flow, and vibration history on similar construction in the same area.

Spiral Vibration Dampers are also effective on certain size overhead shield wires and OPGW. Consult PLP for specifics.

For damper applications on ADSS cable, refer to the FIBER-LIGN® Fiber Optic Products section under motion control.

Consult your PREFORMED™ Sales Representative for placement and installation guidelines.

MATERIAL. The solid polyvinyl chloride helical rod material is noncorrosive and has a surface hardness which does not abrade the conductor.

APPLICATION-INSPECTION. The Gripping Section should be installed approximately one hand's width from the ends of *Armor Rod* or other hardware. It is not necessary to make engineering calculations as to placement.

Usage Recommendations for Spiral Vibration Dampers on Bare Conductor, Shield Wire and OPGW.

	Number of SVDs Per Span		
Span Length	0.800'	801'-1600'	1601'-2400'
Standard	2	4	6
Hi Mass	1	2	3

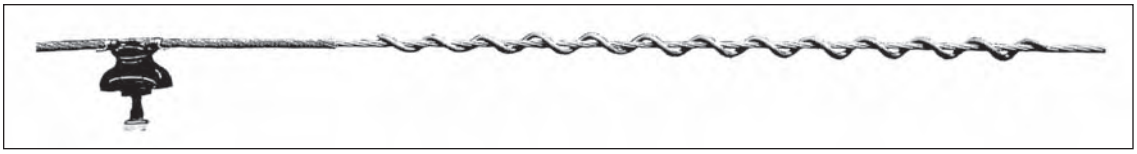
Note: Water/Canyon Crossings - due to the increased potential of laminar wind flow, an additional 50% more dampers per span should be added to the standard recommendations above for adequate protection.

In areas that are prone to high levels of vibration or conductor tension is in excess of 18% RBS, consult Preformed Line Products for specific recommendations.

SAFETY CONSIDERATIONS

1. This product may be reused if in good condition.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED Spiral Vibration Damper before application.
5. PREFORMED Spiral Vibration Dampers are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Spiral Vibration Damper (Standard)



For use on:
Bare Conductors, Shield Wires and OPGW

CATALOG NUMBER	DIAMETER RANGE (INCHES)		UNITS	WT./LBS.	LENGTH (INCHES)
	MIN.	MAX.	PER CARTON		
5050102	.174	.249	50	29	46
5050103	.250	.326	50	31	49
5050104	.327	.461	50	34	51
5050105	.462	.563	50	36	53
5050106	.564	.760	25	50	65

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range..

Spiral Vibration Damper (Hi Mass)

For use on:
Bare Conductors, Shield Wires and OPGW

CONSTRUCTION

The Hi Mass Spiral Vibration Damper (HMSVD) has a damping section close to double that of the standard SVD. By extending the length of the damping section, one Hi Mass SVD provides the effectiveness of two standard SVDs.

BENEFITS

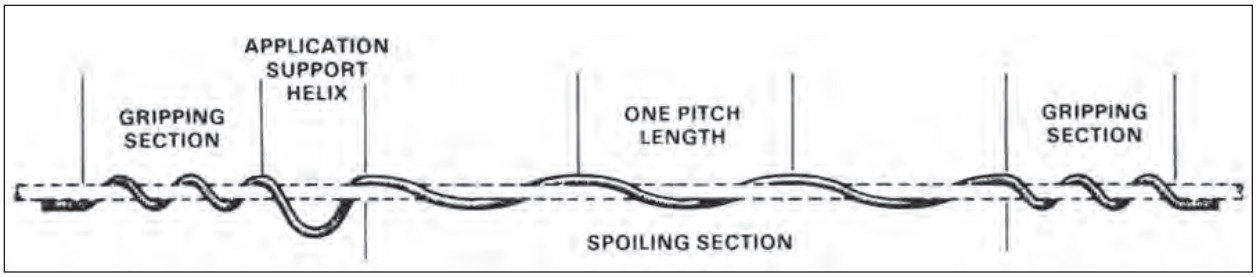
- Fewer points of installation.
- Fewer components on the line.

CATALOG NUMBER	DIAMETER RANGE (INCHES)		UNITS	WT./LBS.	LENGTH (INCHES)
	MIN.	MAX.	PER CARTON		
5050200	.250	.326	50	55	87
5050201	.327	.461	50	60	91
5050202	.462	.563	50	65	94
5050203	.564	.760	15	55	97

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range..

Air Flow Spoiler



Thermal Rating (Continuous) 125°C

NOMENCLATURE

Gripping Section: Grips cable. Consists of several pitches (360° wraps around the cable) and holds the Air Flow Spoiler firmly in position.

Spoiling Section: Disrupts aerodynamic lift. The spoiling section is wrapped around the cable in a manner which presents a constantly changing profile to wind flow and cancels lift forces which cause galloping. The spoiling section is wrapped around the cable either two or three times, depending on cable diameter.

Application Support Helix: Supports Spoiler. Air Flow Spoilers range in length from 14 to 16 feet. The Application Support Helix on one end keeps the Air Flow Spoiler from hanging down, while the gripping section on the opposite end is applied.

Air Flow Spoilers for EHV applications have a co-extended semi-conductive outer layer of material which resists the surface effects of high electrical gradients and minimizes the possible generation of radio interference (RI).

GENERAL RECOMMENDATIONS

Several Air Flow Spoilers are required in each span to offset the aerodynamic lift forces which cause galloping. Each cable, conductor or phase, and neutral need to be treated in each span.

The number and placement of Air Flow Spoilers in each span can be determined by using the General Placement guidelines that follow or by submitting the Air Flow Spoiler Placement Request form. The information submitted on this form is input into a computer program for the determination of the exact placement of the Air Flow Spoilers in each span. The program also supplies the increased wind loading on each span as a percentage increase.

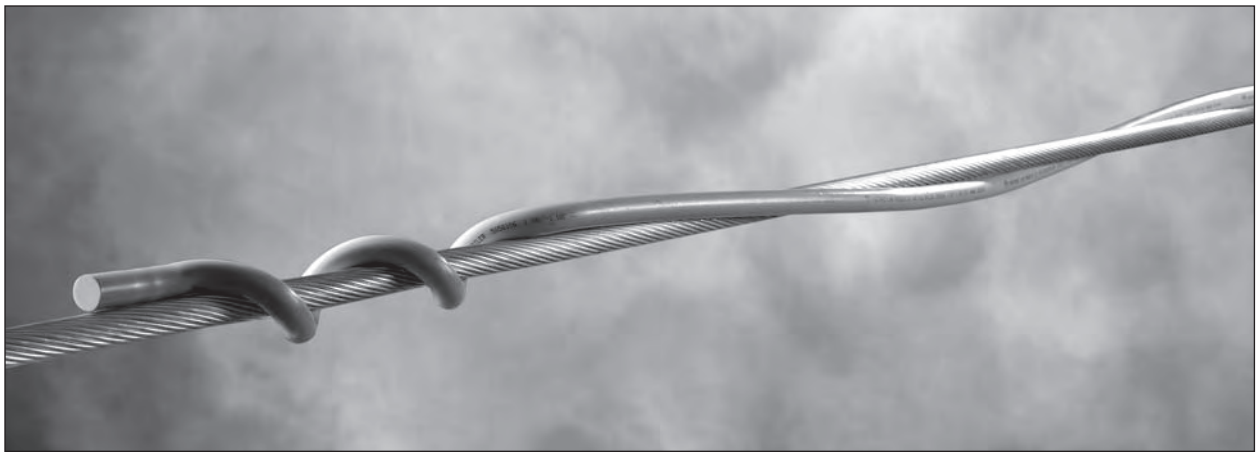
When using the Air Flow Spoiler Placement Request form, the information should be completed and returned to Preformed Line Products prior to installation of Air Flow Spoilers. The placement scheme will be returned giving the placement of Air Flow Spoilers in each span.

Please advise whether the cables contain optical fibers or if the Air Flow Spoilers are to be installed on Figure 8/Lashed Messenger cables. This may influence the Air Flow Spoiler selection and/or quantity.

GENERAL PLACEMENT GUIDELINES

Extensive laboratory and field research has shown that Air Flow Spoilers are most effective when they are placed on 25% of the span length (based on the 12' spoiling section). For example, a 600' span would require 13 Air Flow Spoilers (.25x600/12). The Air Flow Spoilers are grouped in the middle 50% of the span by leaving a blank space equal to an Air Flow Spoiler lemgth between adjacent units.

Air Flow Spoiler



Catalog Number	EHV Catalog Number	Diameter Range (Inches)		Length (Feet)	Wt./Unit Lbs.	Color Code
		Min.	Max.			
5058100	N/A	0.250	0.326	13-1/2	1.00	Red
5058101	N/A	0.327	0.461	13-1/2	1.00	White
5058102	N/A	0.462	0.563	14	2.25	Orange
5058103	N/A	0.564	0.76	14-1/2	2.40	Yellow
5058104	N/A	0.761	0.926	15	4.25	Blue
5058105	5058200	0.927	1.019	15-1/4	4.50	Black
5058106	5058201	1.020	1.165	15-3/4	5.50	Purple
5058107	5058202	1.166	1.469	16	5.75	Brown
5058108	5058203	1.470	1.602	17	9.50	Green
5058109	5058204	1.603	1.762	17-1/2	9.75	Pink

EXPLANATORY NOTES:

(1) For installation on Figure 8 and Lashed Messenger cables, consult PLP.
(2) Obtain the Air Flow Spoiler Placement Request form from your local PLP representative or direct from PLP.

PREFORMED LINE PRODUCTS

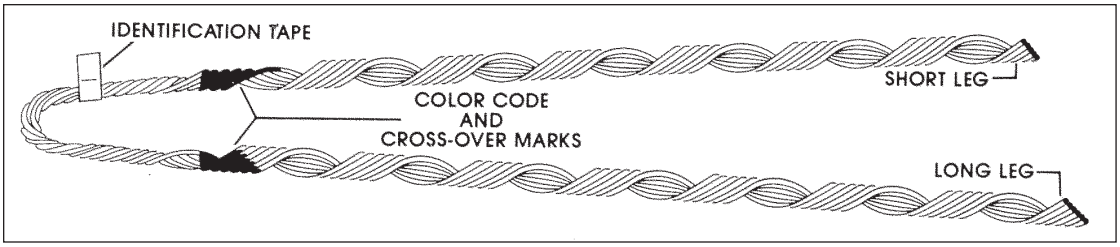
Section 6 – Transmission: Guying Products

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Big-Grip Dead-end

NOMENCLATURE



Cross-over Marks: Indicate starting point for application.

Color Code and Length: Assist in identification of strand size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

Short Leg-Long Leg: Identifies rods belonging to each leg, after application. During application, the short leg should be applied first.

GENERAL INFORMATION

Big-Grip dead-ends are designed for use on Transmission, Antenna, Communications, and other types of guyed structures that require use of large guy strand.

Rated Holding Strength (RHS): Big-Grip dead-ends are designed to develop the maximum loads published on the catalog pages only for those specific strands listed.

Material Selection: Big-Grip dead-ends are made from material which is compatible with the strand they are designed to be used with **except where noted otherwise.**

This product is intended for a single (one-time) use and for the specified application although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.

INSTALLATION GUIDELINES

Strand Compatibility: Big-Grip dead-ends should be used only on the size and strand for which they are designed. They must have the same lay as the strand to which they are applied.

When ordering Big-Grip dead-ends make sure to specify the strand on which it is to be used and the strand lay.

When using types of strand and/or sizes of strand not mentioned in these catalog pages, consult PLP for compatible Big-Grip dead-end designs.

During installation and at all times, care should be taken to avoid gouging or damaging the corrosion preventive material of either the Big-Grip dead-end or the strand.

Big-Grip Dead-ends must not be used as tools, that is, come-alongs, pulling-in grips, etc.

Normally tools are not required to install Big-Grip dead-ends, however a screwdriver may be used to split the legs into subsets. When splitting the legs, do not make more than two subsets per leg.

For hardware and hardware dimensions to be used in conjunction with Big-Grip dead-ends refer to Table 1, on the next page.

Big-Grip dead-ends should not be used on hardware which allows the strand to rotate or spin about its axis uncontrolled. Adjustable hardware, such as a turnbuckle, may be used as long as rotational movement of the strand is restricted. Consult PLP for additional information concerning adjustable hardware that can be used with Big-Grip dead-ends.

Hardware used in conjunction with Big-Grip dead-ends should have smooth contours, ample groove clearances, acceptable diameters and sufficient strength to minimize abrasion and fatigue of the loop area.

Hardware: Table 1, Figures 1-6 illustrate some of the possible hardware and their dimensions that may be used with Big-Grip dead-ends:

(A) Figure 1 illustrates minimum and maximum acceptable seat diameters to which the Big-Grip dead-end can be applied.

(B) Figure 2 illustrates seat diameters and minimum groove diameters.

(C) Figure 3 illustrates minimum hardware hole diameters.

Big-Grip Dead-end

Thimble Recommendations

(A) Only heavy-duty type wire rope thimbles or solid ("Hawser") type thimbles are recommended for use with Big-Grip dead-ends. (Refer to Figures 4, 5, and 6.)

(B) Heavy-duty type wire rope thimbles can collapse when guy tensions are high. In order to support and protect the loop area of the Big-Grip dead-end special precautions are necessary.

(C) In order to prevent collapse of the thimble, either a solid ("Hawser") type thimble (Figure 4), or a large pin inside the thimble (Figure 5), or a smaller pin (such as a shackle pin) plus double extra strong weight pipe or equivalent (Figure 6) is necessary. Double extra strong weight pipe, which has increased wall thickness and strength over schedule 160 pipe, does not have a schedule number but information can be obtained from a pipe supplier. Thimble strengths and dimensions can be obtained from a thimble supplier.

When in doubt about installations, hardware, or applications, contact your PLP representative.

PLP suggests guy tensions be maintained at a minimum of approximately 10% of the Strand's Rated Breaking Strength (RBS).

TABLE 1 - BIG-GRIP DEAD-END HARDWARE ACCESSORIES DIMENSIONS
(All Dimensions in Inches)

DEAD-END DIAMETER RANGE	NOMINAL STRAND SIZES	Fig. 1 & 2 SEAT DIMENSIONS MIN.	Fig. 1 & 2 SEAT DIMENSIONS MAX.	Fig. 2 MINIMUM GROOVE DIAMETER	Fig. 3 MINIMUM HARDWARE HOLE DIAMETER*	HEAVY DUTY THIMBLE SIZE	Fig. 4& 5 PIN DIAMETERS MIN.	Fig. 4& 5 PIN DIAMETERS MAX.	DOUBLE EXTRA STRONG WEIGHT PIPE Fig. 6 NOMINAL SIZE	Fig. 6 O.D.	Fig. 6 I.D.
.475-.515	1/2	1-3/8	2-3/8	9/16	3/4	5/8	1	1-5/8	1-1/4	1.66	.896
.516-.570	9/16	1-1/2	2-5/8	5/8	15/16	5/8	1-1/8	1-5/8	1-1/4	1.66	.896
.571-.635	5/8	2	2-5/8	3/4	1	3/4	1-1/2	1-7/8	1-1/4	1.66	.896
.636-.772	3/4	2-1/2	3-1/8	7/8	1-3/16	7/8	1-7/8	2-1/8	1-1/2	1.9	1.1
.773-.868		2-1/2	3-5/8	1	1-3/8	1	2	2-3/8	2	2.375	1.503
.869-1.024	7/8 1	3	4-1/8	1	1-3/8	1-1/8 - 1-1/4	2-3/8	2-3/4	2	2.375	1.503
1.025-1.27		3-1/2	5-1/8	1-3/8	1-3/4	1-1/4 - 1-3/8	2-3/4	3-1/4	2-1/2	2.875	1.771
1.30		4	5-1/8	1-3/8	1-15/16	1-3/8 - 1-1/2	2-7/8	3-3/8	2-1/2	2.875	1.771

Figure 1

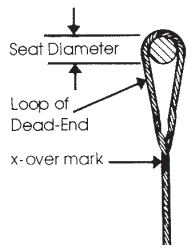


Figure 2

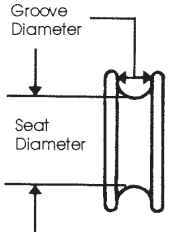


Figure 3

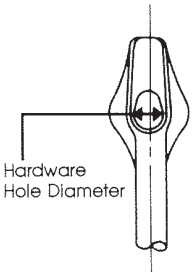


Figure 4

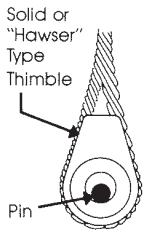


Figure 5

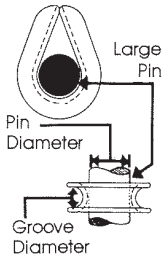
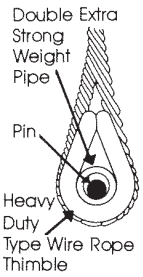


Figure 6



* Depending on geometric shape of the hole, the legs of Big-Grip dead-ends may insert inot hole diameter less than specified.

Big-Grip Dead-end

GALVANIZED STRAND

For use on:
Extra High Strength
Siemens Martin
High Strength
Utilities Grade



CATALOG NUMBER	SIZE (INCHES)	STRAND CONSTRUCTION	STRAND ACTUAL DIAMETER (INCHES)	BG PER CARTON UNITS	BG PER CARTON WT./LBS.	APPROX. LENGTH (INCHES)	COLOR CODE	RATED HOLDING STRENGTH (LBS.)	(PERCENT OF STRAND'S RATED BREAKING STRENGTH)
BG-2115	1/2	7W or 19W	.459 or .500	20	63	49	Blue	26,900	(100%)
BG-2116	9/16	7W or 19W	.564 or .565	10	48	55	Yellow	35,000	(100%))
BG-2111	5/8	7W or 19W	.621 or .625	10	65	6k	Black	7W 42,400 19W 40,200	(100%) (100%)
BG-2112	3/4	19W	.750	5	54	76	Orange	58,300	(100%
BG-MS-7023	7/8	19W	.885	5	76	90	Green	79,700	(100%)
BG-MS-7047	1	19W or 37W	1.000 or 1.001	3	76	125	Blue	19W 104,500 37W 92,430	(100%) (90%) +

Left-hand lay standard
+ Down-Rated for 37 stranding (1994)

EXPLANATORY NOTES:

(1) For strand sizes smaller than 1/2", refer to the GUY-GRIP® dead-end.
(2) Reference table earlier in this section for acceptable fitting dimensions.
(3) Cabled loop design is furnished as standard for all sizes.
(4) Rated Holding Strengths (RHS) of the Big-Grip dead-ends are listed for each strand and are expressed as a percent of the strand's Rated Breaking Strength (RBS).
(5) C-Coat galvanized steel is standard for the Big-Grip dead-ends used on 1/2", 9/16", and 5/8" strand.
(6) B-Coat galvanized steel is used for the Big-Grip dead-ends used on 3/4" strand. However, use of this material is subject to availability and other materials such as aluminum-covered steel may be substituted. Before ordering, consult Preformed™ as to material availability.
(7) Big-Grip dead-ends for 7/8" and 1" strand are made from aluminum-covered steel material. Galvanized steel material is not available. Before using, check to make sure that atmospheric conditions in the area they are to be used will not create a problem caused by two dissimilar metals.
(8) Consult PLP for sizes and stranding not shown.

Big-Grip Dead-end

For use on:
Aluminum Clad Steel Strand

CATALOG NUMBER	STRAND DIAMETER RANGE (INCHES)		NOMINAL STRAND SIZE	BG PER CARTON		APPROX. LENGTH (INCHES)	COLOR CODE	RATED HOLDING STRENGTH (LBS.)	(PERCENT OF STRAND'S RATED BREAKING STRENGTH)
	MIN.	MAX.		UNITS	WT./LBS.				
BG-4168	.475	.494	7 # 6	25	60	42	Blue	22,730	(100%)
BG-4169	.495	.515	19 # 10	25	62	44	Green	27,190	(100%)
BG-4170	.516	.536	25M	20	66	47	Red	25,000	(100%)
BG-4171	.537	.555	7 # 5	20	67	48	Yellow	27,030	(100%)
BG-4172	.556	.570	-	15	68	49	Blue	33,330	
BG-4173	.571	.591	19 # 9	20	68	50	Orange	34,290	(100%)
BG-4174	.592	.612	-	15	50	50	Green	34,450	
BG-4175	.613	.635	-	10	49	54	Yellow	45,000	
BG-4176	.636	.661	19 # 8	10	50	56	Black	43,240	(100%)
BG-4177	.662	.686	19x.1363"	10	66	59	Blue	47,400	(100%)
BG-4178	.687	.712	-	10	68	61	Red	54,200	
BG-4179	.713	.741	19 # 7 37 # 10	10	70	63	Black	51,730 50,300	(100%) (95%)+
BG-4180	.742	.772	19x.1499"	5	41	71	Yellow	54,300	(100%)
THE FOLLOWING PRODUCTS ARE FOR THE SPECIFIC CABLES LISTED.									
	Actual Diameters								
BG-4181	.792		19x.1584	5	50	80	Blue	59,000	
BG-4183	.801, .810, .827		37 # 9 19 # 6 19x.1660"	5	69	84	Green	63,430 61,700 63,000	(95%)+ (100%) (100%)
BG-4185	.849, .850, .866		37x.121" 19x.170" 19x.173" 37x.123"	5	68	87	Black	71,250 66,000 68,500 74,100	(95%)+ (100%) (100%) (95%)+
BG-4186	.899		37 # 8	5	76	91	Yellow	80,000	(95%)+
BG-4187	.910, .934		19 # 5 19x.1868"	5	78	93	Blue	73,350 75,000	(100%) (100%)
BG-4188	.981		37x.1404"	4	52	95	Red	90,250	(95%)+
BG-4189	1.01		37 # 7	4	85	108	Green	90,600	(90%)+
BG-4190	1.10		37x.1571"	3	84	117	Black	101,700	(90%)+
BG-4191	1.134		37 # 6	3	86	120	Yellow	108,200	(90%)+
BG-4192	1.27		37 # 5	2	82	151	Red	127,000	(89%)

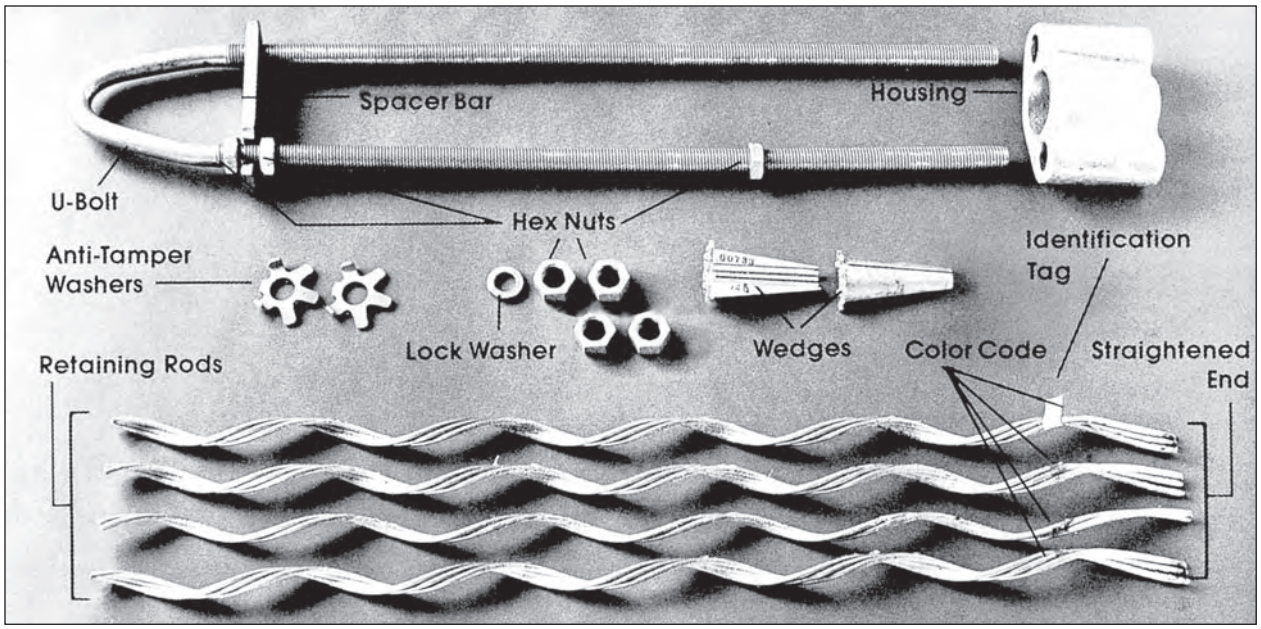
Left-hand lay standard
+ Down-Rated for 37 stranding (1994)

EXPLANATORY NOTES:

(1) For strand sizes smaller than 7#6, refer to the GUY-GRIP® dead-end.
(2) "Nominal Strand Size" indicates the strand which fits within the "Strand Diameter Range".
(3) Reference table earlier in this section for acceptable fitting dimensions.
(4) Cabled loop design is furnished as standard for all sizes.
(5) Rated Holding Strengths (RHS) of the Big-Grip dead-ends are listed for each strand and are expressed as a percent of the strand's Rated Breaking Strength (RBS).
(6) Consult PLP for sizes and stranding not shown.

VARI-GRIP™ Dead-end

NOMENCLATURE



U-Bolt: Galvanized Steel
Housing: Galvanized Iron
Wedges: Aluminum
Spacer Bar: Galvanized Steel (supplied with adjustable models only)

Nuts & Washers: Galvanized Steel
Retaining Rods: Galvanized Steel for Galvanized Steel Strand, Aluminum-covered Steel for Aluminum-covered Steel Strand
Color Code: Identifies Strand Size

GENERAL RECOMMENDATIONS

VARI-GRIP Dead-ends are designed for use on Transmission, Antenna, Communications, and other types of guyed structures that require use of large guy strand. VARI-GRIP dead-end components such as the housing, U-Bolt, and hex nuts allow for adjustment in guy tensions.

Where guying requirements call for strands not shown on the catalog pages, consult PLP or refer to the Rocket-Socket™ Dead-end. VARI-GRIP dead-ends are available in 0" and 18" take-up ranges.

RATED HOLDING STRENGTH (RHS): VARI-GRIP dead-ends are designed to develop the maximum loads published on the catalog pages for only those specific strands listed.

MATERIAL SELECTION: VARI-GRIP dead-end retaining rods are made from material compatible with the strand for which they are designed.



VARI-GRIP™ Dead-end

INSTALLATION GUIDELINES

Strand compatibility: VARI-GRIP™ Dead-ends should be used only on the size and strand for which they are designed. The VARI-Grip Dead-end Retaining Rods MUST have the same lay direction as the strand to which they are applied. WHEN ORDERING VARI-GRIP DEAD-ENDS, SPECIFY THE STRAND AND THE STRAND LAY DIRECTION ON WHICH THEY ARE TO BE USED.

When installing VARI-GRIP Dead-ends care should be taken not to damage the protective coatings on the hardware, rods, or fittings

VARI-GRIP Dead-ends should not be used as tools, i.e., come-alongs, pulling-grips, etc.

Factory suggests guy tensions be maintained at a minimum of approximately 10% of the Strand's Rated Breaking Strength (RBS).

Guy tension may be roughly determined by measuring the torque on the hex nuts (during initial installation with threads well lubricated).

If this method is to be used, an anti-seize compound applied liberally on the threads of the U-Bolt and anti-tamper washers will permit more accurate measurements.

The anti-seize compound will also make the nut tightening procedure easier.

Consult Factory for torque/tension information or for any unusual installations.

The spacer bar and hex nuts (supplied with the 18" take-up model) should be installed as close to the interior radius of the U-Bolt as possible.

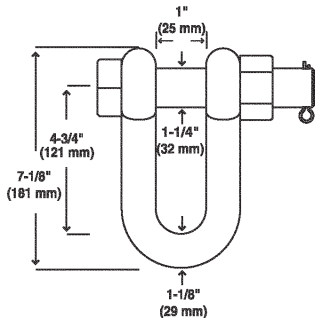
Attachment Fittings: When installing VARI-GRIP Dead-ends to a pin or other linkage refer to Table 1 for minimum and maximum diameters. The minimum dimension indicates the smallest fitting that will insure support of the U-Bolt, while the maximum dimension indicates the largest fitting that will fit through the U-Bolt.

Acceptable Pin Diameters

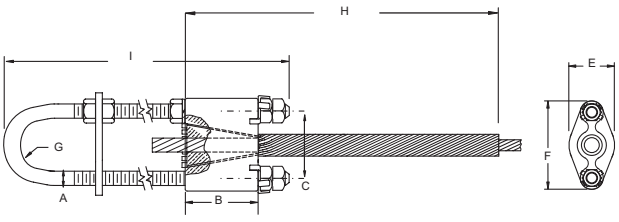
Strand Range	U-Bolt Dia.	Minimum	Maximum
.744"–.914"	1"	1"	1-1/4"
.915"–1.034"	1-1/8"	1-1/8"	1-3/8"
61#7, 61#6	1-1/2"	4"	4"
61#5, 91#6	1-3/4"	4"	4-1/2"

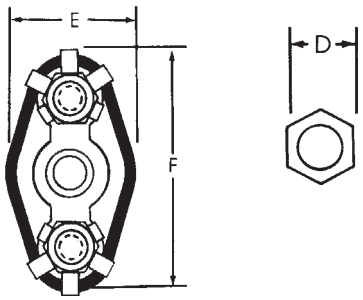
Anchor Shackle

Catalog No.	Description	Max. Load
00065470	1-1/8" Anchor Shackle	112,000#



DIMENSIONAL DATA





Strand Range	U-Bolt Dia. A	B	C	D	E	F	G	H	I (0")	I (18")
.744"–.914"	1"	4-1/2"	4-3/4"	1-1/2"	3-5/16"	6-11/16"	5/8"	see next	12-11/16"	33-3/16
.915"–1.034"	1-1/8"	4-15/16"	5-3/8"	1-5/8"	3-5/8"	7-5/8"	3/4"	page	14"	33-1/2"
61#7, 61#6	1-1/2"	7-1/4"	7-1/8"	2-5/16"	5-1/4"	10-1/8"	2-1/16"	page	20-3/4"	39-15/16"
61#5	1-3/4"	7-1/4"	8-3/16"	2-5/8"	5-9/16"	11-11/16"	2-1/2"	page	22-1/2"	42-3/4"
91#6	1-3/4"	8-3/4"	8-3/16"	2-5/8"	6-5/8"	12-3/8"	2-1/2"	page	22-1/2"	42-3/4"

VARI-GRIP™ Dead-end

ORDERING INFORMATION

Be sure that the VARI-GRIP Dead-end selected matches the material, lay direction and strength of the strand being used.

Aluminum Clad Steel Strand (left-hand lay)

Catalog Number 18" Take-Up	Catalog Number 0" Take-Up	Nominal Strand Range Min.	Nominal Strand Range Max.	Nominal Strand Construction	U-Bolt Dia.	Rods Per Set	Rod Length	Subset	Color Code	Rated Holding Strength
VG-18-3103	VG-0-3103	0.800	0.810	37#9	1"	12	46"	3-3-3-3	Green	66,700#
				19#6						61,700#
VG-18-3104	VG-0-3104	0.893	0.903	37#8	1-1/8"	13	54"	3-3-3-4	Yellow	84,200#
VG-18-3105	VG-0-3105	0.904	0.914	19#5	1"	13	54"	3-3-3-4	Yellow	73,350#
VG-18-3106	VG-0-3106	0.911	0.921	61#10	1-1/8"	13	54"	3-3-3-4	Yellow	87,290#
VG-18-3107	VG-0-3107	1.000	1.010	37#7	1-1/8"	14	58"	3-3-4-4	Green	100,700#
VG-18-3108	VG-0-3108	1.024	1.034	61#9	1-1/8"	14	76"	3-3-4-4	Purple	110,100#
VG-61#7-18	VG-61#7-0	1.30	1.30	61#7	1-1/2"	16	106"	4-4-4-4	Blue	166,100#
VG-61#6-18	VG-61#6-0	1.46	1.46	61#6	1-1/2"	18	116"	3-3-4-4-4	Green	198,100#
VG-61#5-18	VG-61#5-0	1.64	1.64	61#5	1-3/4"	20	129"	4-4-4-4-4	Orange	235,500#
VG-91#6-18	VG-91#6-0	1.78	1.78	91#6	1-3/4"	18	165"	4-4-4-3-3	Red	295,500#

Galvanized Extra High Strength Strand (left hand lay)

Catalog Number 18" Take-Up	Catalog Number 0" Take-Up	Nominal Strand Range Min.	Nominal Strand Range Max.	Nominal Strand Size	Nominal Strand Construction	U-Bolt Dia.	Rods Per Set	Rod Length	Subset	Color Code	Rated Holding Strength
VG-18-2103	VG-0-2103	0.744	0.754	3/4"	19W	1"	12	44"	3-3-3-3	Orange	58,300#
VG-18-2104	VG-0-2104	0.878	0.888	7/8"	19W	1"	13	49"	3-3-3-4	Green	79,700#
VG-18-2105	VG-0-2105	1.000	1.010	1"	19W or 37W	1-1/8"	14	58"	3-3-4-4	Blue	104,500#

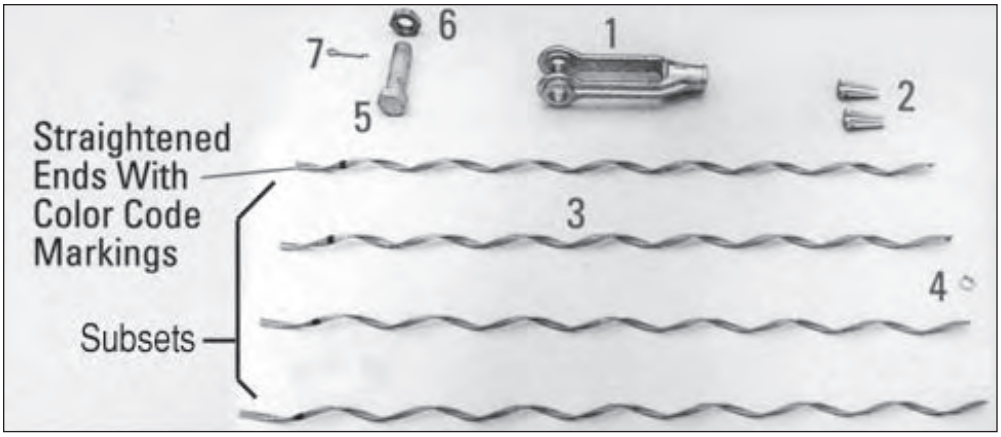
Galvanized Steel Bridge Strand Strand (left hand lay)

Catalog Number 18" Take-Up	Catalog Number 0" Take-Up	Nominal Strand Range Min.	Nominal Strand Range Max.	Nominal Strand Size	Nominal Strand Construction	U-Bolt Dia.	Rods Per Set	Rod Length	Subset	Color Code	Rated Holding Strength
VG-18-2103	VG-0-2103	0.750	0.750	3/4"	1 X 19	1"	12	44"	3-3-3-3	Orange	68,000#
VG-18-4104	VG-0-4104	0.813	0.813	13/16"	1 X 19	1"	12	54"	3-3-3-3	Red	80,000#
VG-18-4105	VG-0-4105	0.875	0.875	7/8"	1 X 19	1-1/8"	13	58"	3-3-3-4	Green	92,000#
VG-18-4106	VG-0-4106	0.938	0.938	15/16"	1 X 31	1-1/8"	14	63"	3-3-4-4	Black	108,000#

Galvanized Steel Bridge Strand Strand (right hand lay)

Catalog Number 18" Take-Up	Catalog Number 0" Take-Up	Nominal Strand Range Min.	Nominal Strand Range Max.	Nominal Strand Size	Nominal Strand Construction	U-Bolt Dia.	Rods Per Set	Rod Length	Subset	Color Code	Rated Holding Strength
VG-18-5103	VG-0-5103	0.750	0.750	3/4"	1 X 19	1"	12	44"	3-3-3-3	Orange	68,000#
VG-18-5104	VG-0-5104	0.813	0.813	13/16"	1 X 19	1"	12	54"	3-3-3-3	Red	80,000#
VG-18-5105	VG-0-5105	0.875	0.875	7/8"	1 X 19	1-1/8"	13	58"	3-3-3-4	Green	92,000#
VG-18-5106	VG-0-5106	0.938	0.938	15/16"	1 X 31	1-1/8"	14	63"	3-3-4-4	Black	108,000#

ROCKET-SOCKET™ Dead-end



1. **Housing:** Galvanized Iron
2. **Wedges:** Galvanized Steel or Aluminum
3. **Retaining Rods:** Galvanized Steel for Galvanized Strand, Aluminum-covered Steel for Aluminum-covered Strand
4. **Ear Clamp:** Plated Steel
5. **Bolt:** Galvanized Steel
6. **Nut:** Galvanized Steel
7. **Cotter Pin:** Plated Steel

GENERAL RECOMMENDATIONS

ROCKET-SOCKET dead-ends are designed for use on Transmission, Antenna, Communications and other types of guyed structures that require use of large guy strand.

Where guy requirements exist for strand sizes under 1/2" or 19#10 refer to GUY-GRIP® dead-end. Where guy requirements exist for strand 1/2" or 19#10 and larger refer to Big-Grip dead-end. Big-Grip dead-ends may be used in conjunction with ROCKET-SOCKET dead-ends on the same guy.

Where guying requirements call for strands not shown on the catalog pages, consult Preformed Line Products for special designs.

RATED HOLDING STRENGTH (RHS): ROCKET-SOCKET dead-ends are designed to develop 100% of the strand/cables published rated breaking strength.

MATERIAL SELECTION: ROCKET-SOCKET dead-end retaining rods are made from material compatible with the strand for which they are designed.

INSTALLATION GUIDELINES

STRAND COMPATIBILITY: ROCKET-SOCKET dead-ends should be used only on the size and strand for which they are designed. The ROCKET-SOCKET dead-end reataining rods MUST have the same lay direction as the strand to which they are applied. When ordering ROCKET-SOCKET dead-ends, specify the strand and the strand lay direction on which they are to be used.

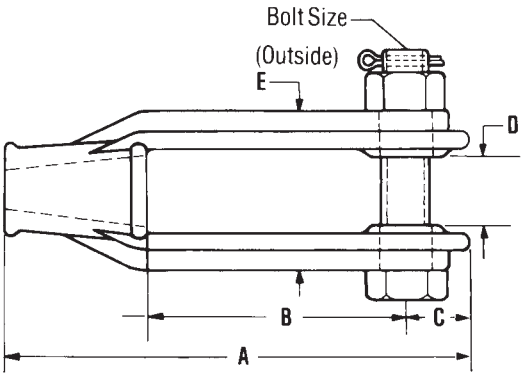
When installing ROCKET-SOCKET dead-ends, care should be taken not to damage the protective coatings on the hardware, rods or fittings.

PLP suggests guy tensions be maintained at a minimum of approximately 10% of the strand's rated breaking strength (RBS).

ATTACHMENT FITTINGS: When installing ROCKET-SOCKET dead-ends, make sure the correct turnbuckle or similar hardware is chosen such that the physical size and strength match that of the dead-end. Consult PLP for specific size requirements if not mentioned in the following text.

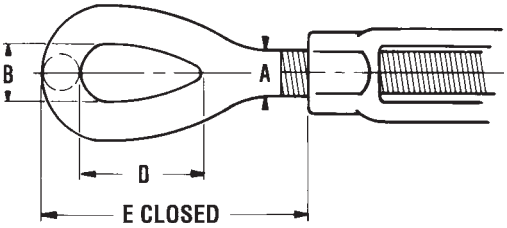
ROCKET-SOCKET™ Dead-end

Housing dimensions of ROCKET-SOCKET dead-end



Housing #60053					
Dimensions (Inches)					
A	B	C	D	E	Bolt Size
18-1/4	11	2-1/4	2-11/16	5-13/16	2 – 4-1/2 UNC Bolt x 8 long
Housing #60089 Austempered					
Dimensions (Inches)					
A	B	C	D	E	Bolt Size
22-13/16	12-3/4	2-13/16	3-13/16	8	2-1/2 – 4 UNC Bolt x 10-1/2 long

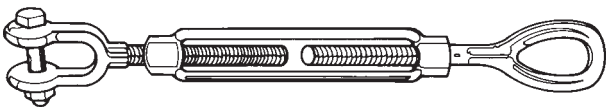
Recommended dimensions for turnbuckle eye used with ROCKET-SOCKET dead-end housings



Housing #60053				
Eye Dimensions (Inches)				
A	B	D	E Closed	Working Load Limit* (Lbs.)
1.5	2.12	4.06	8.62	21,400
1.75	2.38	4.62	10.00	28,000
2	2.69	5.75	13.09	37,000
2.5	3.12	6.5	13.78	60,000
2.75	3.25	7	15.22	75,000
Housing #60089				
Eye Dimensions (Inches)				
A	B	D	E Closed	Working Load Limit* (Lbs.)
2	2.69	5.75	11.86	37,000
2.5	3.12	6.5	13.56	60,000
2.75	3.25	7	15.22	75,000

*Proof load is 2-1/2 times working load limit. Ultimate load is 5 times working load. (© 1997 The Crosby Group, Inc.)

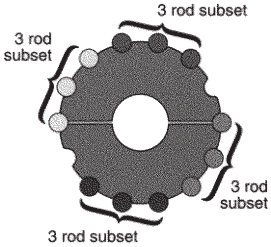
Turnbuckles are recommended for straight or in-line pulls only



Jaw and Eye

Note: see eye detail above.
Jaw and eye turnbuckle could be used to accomodate the ROCKET-SOCKET dead-end and foundation hardware.

Example of placement of retaining rods in grooves of wedges (for detailed description of retaining rod placement on all ROCKET-SOCKET dead-ends, see application procedure SP2713). Depending on the size of the ROCKET-SOCKET dead-end, retaining rods are furnished in subsets consisting of 3 or 4 individual PREFORMED™ rods.



ROCKET- SOCKET dead-end Catalog Number	Retaining Rod Subsets	Number of Total Individual Rods
RK-0501	3-3-3-3	12
RK-0503	3-3-3-3	12
RK-0505	3-3-3-3	12
RK-0507	3-3-3-3	12



When the application of the retaining rods is completed, there should never be two (2) open wedge grooves next to each other as shown above.

ROCKET-SOCKET™ Dead-end

Galvanized steel ROCKET-SOCKET dead-end for galvanized steel bridge strand (LEFT-HAND LAY)

Size (Published Rated Breaking Strength) (Inches)	(Lbs.)	Catalog Number	Approx. Overall Applied Length (Inches)	Retaining Rod Length (Inches)	Housing Part No.
3/4	(68,000)	RK-0501	57	44	60053
13/16	(80,000)	RK-0505	67	54	60053
7/8	(92,000)	RK-0509	71	58	60053
15/16	(108,000)	RK-0514	76	63	60053
1	(122,000)	RK-0516	79	66	60053
1-1/16	(138,000)	RK-0519	106	91	60089
1-1/8	(156,000)	RK-0523	110	95	60089
1-3/16	(172,000)	RK-0525	114	99	60089
1-1/4	(192,000)	RK-0527	118	103	60089
1-5/16	(212,000)	RK-0529	122	107	60089
1-3/8	(232,000)	RK-0531	125	110	60089
1-7/16	(252,000)	RK-0533	129	114	60089

Lay Direction Guide
Examples of lay directions of strand or cable



LEFT-HAND LAY



RIGHT-HAND LAY

Galvanized steel ROCKET-SOCKET dead-end for Extra High Strength (EHS) galvanized steel strand (LEFT-HAND LAY)

Size (Published Rated Breaking Strength) (Inches)	(Lbs.)	Catalog Number	Approx. Overall Applied Length (Inches)	Retaining Rod Length (Inches)	Housing Part No.
3/4-19W	(58,300)	RK-0501	57	44	60053
7/8-19W	(79,700)	RK-0509	71	58	60053
1-19W-37W	(104,500)	RK-0516	79	66	60053
1-1/8-37W	(130,800)	RK-0523	110	95	60089
1-1/4-37W	(162,200)	RK-0527	118	103	60089

EXPLANATORY NOTES:

(1) Housing #60089 was formerly housing #60045 and is austempered for additional holding strength.
(2) All of the ROCKET-SOCKET dead-ends listed in the above tables are designed to hold 100% of the strand/cables' published rated breaking strength (RBS).

ROCKET-SOCKET™ Dead-end

Galvanized steel ROCKET-SOCKET dead-end for galvanized steel bridge strand (RIGHT-HAND LAY)

Size (Published Rated Breaking Strength) (Inches) (Lbs.)	Catalog Number	Approx. Overall Applied Length (Inches)	Retaining Rod Length (Inches)	Housing Part No.
3/4 (68,000)	RK-0503	57	44	60053
13/16 (80,000)	RK-0507	67	54	60053
7/8 (92,000)	RK-0513	71	58	60053
15/16 (108,000)	RK-0515	76	63	60053
1 (122,000)	RK-0517	79	66	60053
1-1/16 (138,000)	RK-0521	106	91	60089
1-1/8 (156,000)	RK-0524	110	95	60089
1-3/16 (172,000)	RK-0526	114	99	60089
1-1/4 (192,000)	RK-0528	118	103	60089
1-5/16 (212,000)	RK-0530	122	107	60089
1-3/8 (232,000)	RK-0532	125	110	60089
1-7/16 (252,000)	RK-0534	129	114	60089

Lay Direction Guide
Examples of lay directions of strand or cable



LEFT-HAND LAY



RIGHT-HAND LAY

Alumoweld® ROCKET-SOCKET dead-end for Alumoweld® strand (LEFT-HAND LAY)

Alumoweld Strand (Published Rated Breaking Strength) (Inches) (Lbs.)	Catalog Number	Approx. Overall Applied Length (Inches)	Retaining Rod Length (Inches)	Housing Part No.
37#9 .801 (66,700)	RK-1501	60	47	60053
19#6 .810 (61,700)	RK-1503	60	47	60053
37#8 .899 (84,200)	RK-1505	67	54	60053
19#5 .910 (73,350)	RK-1507	67	54	60053
61#10 .917 (87,290)	RK-1509	82	69	60053
37#7 1.010 (100,700)	RK-1510	71	58	60053
61#9 1.030 (110,100)	RK-1511	89	76	60053
37#6 1.130 (120,200)	RK-1512	101	86	60089
61#8 1.160 (138,800)	RK-1514	113	98	60089
37#5 1.270 (142,800)	RK-1516	120	105	60089
61#7 1.300 (166,100)	RK-1517	122	107	60089
61#6 1.460 (198,100)	RK-1518	131	116	60089

EXPLANATORY NOTES:

(1) Housing #60089 was formerly housing #60045 and is austempered for additional holding strength.
(2) All of the ROCKET-SOCKET dead-ends listed in the above tables are designed to hold 100% of the strand/cables' published rated breaking strength (RBS).
(3) Alumoweld is a registered trademark of the Copperweld Co.

PREFORMED LINE PRODUCTS

Section 7 – Transmission: Repair Products

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Optical Ground Wire (OPGW) Repair Rods.....7-5
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Repair Products

GENERAL INFORMATION

Repair of Damaged Transmission Line Conductors, Overhead Shield Wires (OHSW) and Optical Ground Wires (OPGW)

Damage to transmission line conductors, OHSW and OPGW can occur in service for a number of reasons, including:

- Aeolian vibration and galloping
- Wake induced oscillations (bundled lines)
- Lightning strikes
- Firearms

PLP offers a number of solutions for repairing damaged or broken conductors, OHSW and OPGW so that re-conductoring is not required. In most cases the repair solution will depend on the extent of the damage. Therefore, the first step in any repair is an accurate assessment of the level of damage.

Generally an accurate assessment of the number of broken strands can be made by a close visual inspection, with the tension relieved in the damaged area. Since damage can be hidden under suspension hardware, it is usually necessary to carefully remove this hardware to completely assess the amount of damage.

If the total extent of the damage can not be accurately determined, then the repair solution should be based on the worst possible condition.

At support locations once the conductor has been repaired, an elastomer cushioned suspension assemblies such as CUSHION-GRIP, or ARMOR-GRIP Suspensions should be used to reduce future bending stresses on the repaired conductor.

Transmission Conductor Repair

ARMOR RODS & LINE GUARD

Armor Rods or Line Guard can be used to restore the mechanical strength and electrical conductivity for a limited number of broken aluminum strands only in all types of aluminum-based conductors shown in the table below.

See Armor Rod (1-42) and Line Guard (9-70) catalog pages for the catalog numbers for a specific conductor size.

Note: For EHV applications (345KV and above) Armor Rods and Line Guard with PARROT-BILL® rod ends should be used.

Total Repairable Number of Broken or Damaged Aluminum Strands																	
Conductor Type	ACSR, ACSS/AW, ACSS/TW											AAC				AAAC	
Stranding	5/1	6/1	7/1	8/1	18/1	12/7	24/7	26/7	30/7	45/7	54/7	7w	19w	37w	61w	7w	19w
Armor Rods	2	3	3	4	6	6	7	8	9	10	12	2	5	9	12	2	6
Line Guard	1	1	1	1	4	3	3	4	5	5	6	1	3	4	6	1	2

CONDUCTOR SPLICE

A Conductor Splice can be used for conductors which have more aluminum strands broken or damaged that can be repaired with Armor Rod or Line Guard.

A Conductor Splice will restore the mechanical strength and electrical conductivity for up to all the aluminum strands on ACSR, ACSS/AW and ACSS/TW Conductors.

The steel core must be intact, otherwise the mechanical restoration of the complete conductor will be limited (as low as 50%).

A Conductor Splice will restore from 90% to 100% of the mechanical strength and 100% of the electrical conductivity for all the strands broken or damaged on all-alluminum or aluminum alloy conductors.

See conductor splice catalog pages (3-1) for catalog numbers of specific conductor sizes.

Note: For EHV applications (345KV and above) Conductor Splice with PARROT-BILL® rod ends are available (consult PLP).

ACSR FULL TENSION SPLICE & THERMOLIGN™ SPLICE

For ACSR conductors when the damage includes strands of the steel core the ASCR full tension splice will restore 100% of both the mechanical strength and electrical conductivity of the complete conductor. See catalog page 3-16 for ACSR full tension splice for specific conductor size.

For ACSS/AW conductors the THERMOLIGN splice can be used to restore 100% of both the mechanical strength and electrical conductivity. The THERMOLIGN Splice is designed for continuous conductor operation temperatures up to 250°C. Consult PLP for specifics. See catalog page 3-20.

PLP does not offer a solution for the repair of ACSS/TW conductors that have damage to the core.

CUSHION-GRIP™ & ARMOR-GRIP® Suspension

FOR REPAIR

The use of a CUSHION-GRIP Suspension or an ARMOR-GRIP Suspension on a conductor which has been repaired at a suspension structure will reduce future bending stesses by 40% to 50%, thus minimizing the potential for further damage. In extreme cases, the addition of vibration dampers may also be required.


Patented

CUSHION-GRIP™ SUSPENSION FOR REPAIR

To determine the CUSHION-GRIP Suspension required for a repaired conductor add twice the rod diameter of the repair product to the original conductor diameter.

Example:

636 kcmil 26/7 ACSR (Grosbeak) repaired with conductor splice (Catalog No. LS-0148)

Conductor Diameter: 0.990"

Conductor Splice Rod Diameter: 0.310"

Overall Diameter of
Repaired Conductor: 0.990 + 2(0.310)=1.61"

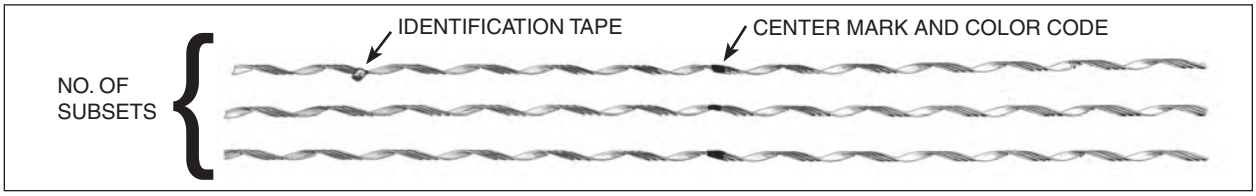
Use CGS-1120

ARMOR-GRIP™ SUSPENSION FOR REPAIR

Consult PLP for specific product recommendations.

Overhead Shield Wire Repair Rods

NOMENCLATURE



Subsets: Individual aluminum clad steel rods assembled into groups. The bore is coated with conductive grit.

Center Mark: Establishes recommended alignment of rods during application.

Color code: Provides identification for application of OPGW size that corresponds to tabular information appearing on catalog page.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL INFORMATION

Repair rods for overhead shield wire are designed to restore 100% of both the mechanical strength and electrical conductivity **when the number of broken wires do not exceed 50% of the total number of wires.**

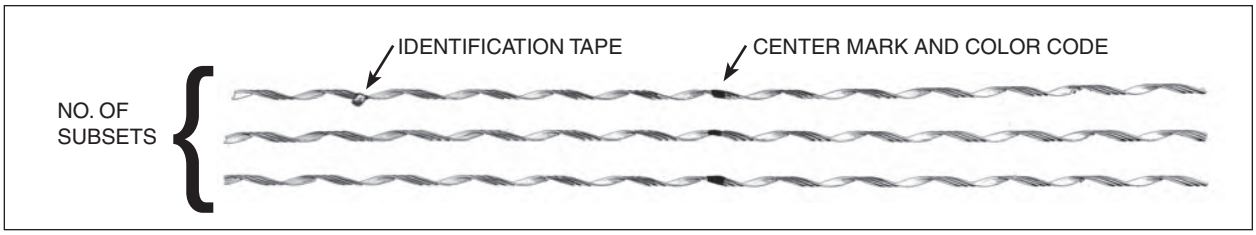
Repair rods can be used at the support structures or within the span. **Overhead shield wire repair rods can not be used as a full tension splice.**

For Galvanized Steel OHSW (left hand lay)					
Catalog Number	OHSW Size inches	Length Inches	Rod Diameter inches	Number of Subsets	Color Code
OHSW-0102	3/16	35	0.086	2	Red
OHSW-0103	7/32	37	0.086	2	Green
OHSW-0104	1/4	45	0.086	2	Yellow
OHSW-0105	9/32	49	0.086	2	Blue
OHSW-0106	5/16	53	0.100	3	Black
OHSW-0107	3/8	62	0.119	3	Orange
OHSW-0108	7/16	72	0.138	3	Green
OHSW-0109	1/2	81	0.159	3	Blue
OHSW-0110	9/16	90	0.188	4	Yellow
OHSW-0111	5/8	103	0.204	4	Black
OHSW-0112	3/4	119	0.241	4	Orange
OHSW-0113	7/8	142	0.288	4	Green

For Aluminum-Clad Steel OHSW (left hand lay)						
Catalog Number	OHSW Range Inches	Nominal Sizes(s)	Length Inches	Rod Diameter Inches	No of Subsets	Color Code
OHSW-2102	.174-.181	3# 12	26	0.081	2	Orange
OHSW-2108	.219 - .220	3# 10	33	0.102	2	Green
OHSW-2110	.237 - .247	3# 9	34	0.102	2	Yellow
OHSW-2113	.270 - .280	3# 8	38	0.102	3	Blue
OHSW-2116	.303 - .313	3# 7	41	0.102	3	Black
OHSW-2119	.337 - .349	7# 9; 3# 6	45	0.114	3	Yellow
OHSW-2122	.380 - .394	7# 8; 3# 5	51	0.128	3	Orange
OHSW-2125	.427 - .442	7# 7	65	0.144	3	Green
OHSW-2128	.475 - .494	7# 6	72	0.162	3	Blue
OHSW-2129	.495 - .515	19# 10	74	0.162	3	Orange
OHSW-2131	.535 - .555	7# 5	78	0.162	3	Black

Optical Ground Wire Repair Rods

NOMENCLATURE



Subsets:
Individual aluminum clad steel rods assembled into groups. The bore is coated with conductive grit.

Center Mark:
Establishes recommended alignment of rods during application.

Color code:
Provides identification for application of OPGW size that corresponds to tabular information appearing on catalog page.

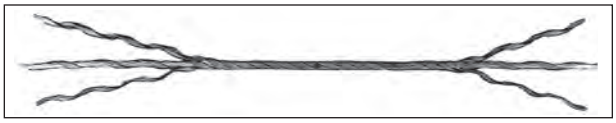
Identification Tape:
Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

FIBERLIGN Repair Rods are designed as a single-component, outer layer assembly for use on OPGW and are intended for repair of the outer mechanical strand members on an OPGW cable. **This is not an optical repair product.**

These OPGW Repair Rods are not designed or tested as splices for use on all-metal overhead shield wire and are not intended for that application.

Restorative Repair:
These Repair Rods will provide varying levels of mechanical and electrical repair depending upon the specific construction, stranding and material of the OPGW.



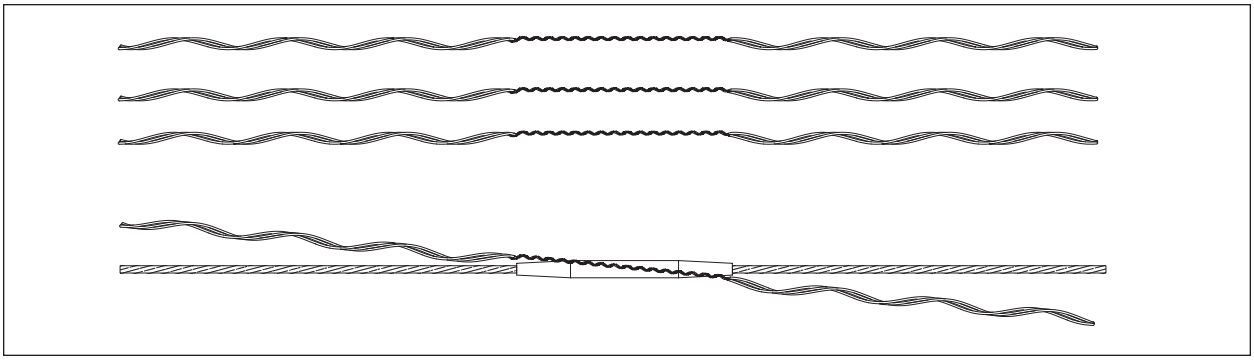
The extent of mechanical damage that the product can repair for single layer OPGW is up to 50% of the cable rated strength. The 50% rating is established by PLP based on repair rod performance. Contact the OPGW cable manufacturer to verify the extent of damage that the specific cable design can survive without jeopardizing the performance of the fiber optic elements. If the cable manufacturer limits the repair level to less than 50%, limit the use of the repair rod to the lower level for that specific cable. Consult PLP for further details.

Lay direction of the Repair Rods should be the same as the outer strands of the OPGW. Left-hand lay is standard, consult PLP for right-hand lay designs.

Repair Rods					
Catalog Number	Diameter Range (inch)	Diameter Range (mm)	Length (inch)	Length (mm)	Color Code
3600100	.354-.385	9-10	45	1143	Red
3600101	.386-.422	10-11	48	1219	Black
3600102	.423-.460	11-12	50	1270	Orange
3600103	.461-.505	12-13	54	1372	Green
3600104	.506-.550	13-14	61	1549	Blue
3600105	.551-.602	14-15	65	1651	Yellow
3600106	.603-.660	15-17	70	1778	Brown
3600107	.661-.719	17-18	74	1880	Purple
3600108	.720-.785	18-20	80	2032	Pink
3600109	.786-.850	20-22	86	2184	Red
3600110	.851-.933	22-24	94	2388	Black
3600111	.934-1.020	24-26	102	2591	Orange

Left-hand lay standard

Splice Shunt



GENERAL RECOMMENDATIONS

The Splice Shunt is designed to restore complete electrical conductivity and a portion of the mechanical strength to compression splices that are found to be excessively hot during thermal line inspections.

Mechanically, the splice shunt is designed to restore 100% of the strength of the aluminum strands of ACSR and 10% or more of the strength of the steel core. 100% of the mechanical strength is reduced for AAC and AAAC conductors.

The Splice Shunt is applied directly over the compression splice and over the conductor for some distance on either side of the splice.

Splice Shunts are also available for repair of splices on overhead shield wires (galvanized steel or aluminum-clad steel).

To order Splice Shunts please provide PLP with the following information:

- Conductor Size (Kcmil, standing, diameter)
- Length of Compression Splice
- Diameter of Compression Splice (measured in the center, non-compressed area)

PREFORMED LINE PRODUCTS

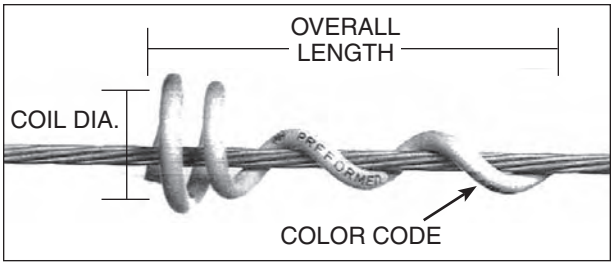
Section 8 – Transmission: Wildlife Protection

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BIRD-FLIGHT™ Diverter 8-1

BIRD-FLIGHT™ Diverter

NOMENCLATURE



Length: Distance product covers the conductor.

Color Code: Identifies conductor range, corresponding to tabular information on the following page.

Color: Yellow or Gray

Material: Outdoor grade PVC

Coil Diameter: Internal diameter of diverter coil

GENERAL RECOMMENDATIONS

The BIRD-FLIGHT Diverter is designed to make overhead lines and guyed structures visible to birds and provides an economical means of reducing the hazard to both lines and birds. For low and medium voltage construction, the BIRD-FLIGHT Diverter is applied to the phase conductors (bare or jacketed). For high voltages, it is used on the shield wire.

The BIRD-FLIGHT Diverter is lightweight, offers little wind resistance and is easily and quickly applied by hand or by hot stick. The positive grip on the conductor ensures that the Bird-Flight Diverter remains in the applied position and cannot move along the span under aeolian vibration or other conditions.

Visibility: The diverter section increases the visible profile of the cable or conductor to a degree necessary to ensure safety, but avoids an undesirably bulky outline.

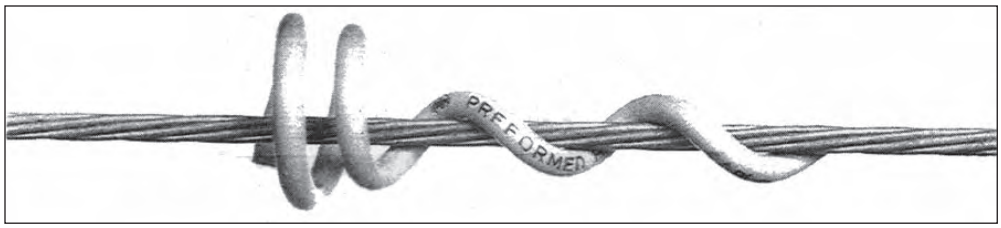
Material: Manufactured from rigid .375" and .500" high impact polyvinyl chloride (PVC) possessing excellent chemical resistance and tensile strength properties, the BIRD-FLIGHT Diverter will retain good physical characteristics within a range of extreme temperatures. Aging tests confirm the material does not deteriorate in function or appearance from the effects of severe weather conditions. Industrial fumes and salt water cannot seriously degrade the properties of rigid PVC.

APPLICATIONS

Ensure the correct size BIRD-FLIGHT Diverter is used. For a detailed installation description, refer to the application instructions. Hot stick application is fast and simple with standard equipment.

Spacing: For optimum results, spacing distances are generally recommended at 15' intervals depending upon local conditions. Since wind resistance is very limited, sufficient BIRD-FLIGHT Diverters can be used to ensure adequate visibility without creating stresses on the line. When marking adjacent spans, overall visibility is improved by staggering the application.

BIRD-FLIGHT™ Diverter



For use on:
Bare and Jacketed Conductors & Strand

Catalog Number	Material Color	Conductor Range (INCHES) Min.	Conductor Range (INCHES) Max.	Overall Length (INCHES)	Diameter of Diverter Coil (INCHES)	Diameter of PVC Rod (INCHES)	Color Code
BFD-MS-3331	Yellow	0.175	0.326	7.00	2.25	0.375	Black
BFD-MS-3346	Gray						
BFD-MS-3155	Yellow	0.250	0.349	8.50	2.50	0.375	Blue
BFD-MS-2921	Gray						
BFD-MS-3164	Yellow	0.350	0.449	9.50	2.75	0.375	Brown
BFD-MS-3355	Gray						
BFD-MS-3341	Yellow	0.450	0.599	11.00	3.00	0.375	Green
BFD-MS-3366	Gray						
BFD-MS-3344	Yellow	0.600	0.770	13.00	4.00	0.500	Purple
BFD-MS-3371	Gray						
BFD-MS-3345	Yellow	0.771	0.858	15.00	4.25	0.500	Red
BFD-MS-3376	Gray						

Explanatory Notes:

For field study results, consult Preformed Line Products.

PREFORMED LINE PRODUCTS

Distribution: Product Selection Charts

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ACSR Conductors

Tie Products..... DSC-1

Dead-ends and other Products DSC-3

All Aluminum (AAC) Conductors

Tie Products..... DSC-5

Dead-ends and other Products DSC-8

Aluminum Alloy Conductors

Tie Products..... DSC-10

Dead-ends and other Products DSC-11

Distribution: Product Selection Charts

Distribution Line Tie Products for Popular ACSR Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	#6 6/1	#4 6/1	#4 7/1	#2 6/1	#2 7/1	#1 6/1	1/0 6/1	2/0 6/1
Code Word	Turkey	Swan	Swanate	Sparrow	Sparate	Robin	Raven	Quail
diameter (in.)	0.198	0.250	0.257	0.316	0.325	0.355	0.398	0.447
PRODUCT								
WRAPLOCK Tie, C-Neck	N/A	WTC-0100	WTC-0100	WTC-0106	WTC-0106	WTC-0109	WTC-0112	WTC-0114
WRAPLOCK Tie, F-Neck	N/A	WTF-0200	WTF-0200	WTF-0206	WTF-0206	WTF-0209	WTC-0212	WTC-0214
WRAPLOCK Tie, J-Neck	N/A	WTJ-0400	WTJ-0400	WTJ-0406	WTJ-0406	WTJ-0409	WTJ-0412	WTJ-0414
Distribution Tie, C-Neck	UTC-1100	UTC-1102	UTC-1102	UTC-1104	UTC-1104	UTC-1104	UTC-1105	UTC-1106
Distribution Tie, F-Neck	UTF-1200	UTF-1202	UTF-1202	UTF-1204	UTF-1204	UTF-1204	UTF-1205	UTF-1206
Distribution Tie, J-Neck	UTJ-1300	UTJ-1302	UTJ-1302	UTJ-1304	UTJ-1304	UTJ-1304	UTJ-1305	UTJ-1306
Distribution Tie, K-Neck	UTK-1600	UTK-1602	UTK-1602	UTK-1604	UTK-1604	UTK-1604	UTK-1605	UTK-1606
EZ-Wrap Twin Tie, C & F	TTCF-100	TTCF-102	TTCF-102	TTCF-104	TTCF-104	TTCF-104	TTCF-105	TTCF-106
EZ-Wrap Twin Tie, F & J	TTFJ-100	TTFJ-202	TTFJ-202	TTFJ-204	TTFJ-204	TTFJ-204	TTFJ-205	TTFJ-206
Double Support Tie, C & F	N/A	DST-0150	DST-0150	DST-0152	DST-0152	DST-0152	DST-0153	DST-0154
Double Support Tie, J-Neck	N/A	DST-0350	DST-0350	DST-0352	DST-0352	DST-0352	DST-0353	DST-0354
Side Tie, C-Neck	STC-1250-P	STC-1251-P	STC-1252-P	STC-1254-P	STC-1254-P	STC-1254-P	STC-1255-P	STC-1256-P
Side Tie, F-Neck	STF-1150-P	STF-1151-P	STF-1151-P	STF-1154-P	STF-1154-P	STF-1154-P	STF-1155-P	STF-1156-P
Side Tie, J-Neck	STJ-1500-P	STJ-1501-P	STJ-1501-P	STJ-1504-P	STJ-1504-P	STJ-1504-P	STJ-1505-P	STJ-1506-P
EZ-Wrap Side Tie, C-Neck	EZSTC-270	EZSTC-271	EZSTC-271	EZSTC-274	EZSTC-274	EZSTC-274	EZSTC-275	EZSTC-276
EZ-Wrap Side Tie, F-Neck	EZSTF-170	EZSTF-171	EZSTF-171	EZSTF-174	EZSTF-174	EZSTF-174	EZSTF-175	EZSTF-176
EZ-Wrap Side Tie, J-Neck	EZSTJ-570	EZSTJ-571	EZSTJ-571	EZSTJ-574	EZSTJ-574	EZSTJ-574	EZSTJ-575	EZSTJ-576
Double Side Tie, C & F	N/A	DBST-1100	DBST-1100	DBST-1102	DBST-1102	DBST-1102	DBST-1103	DBST-1104
Double Side Tie, J-Neck	N/A	DBST-1300	DBST-1300	DBST-1302	DBST-1302	DBST-1302	DBST-1303	DBST-1304
Spool Tie	SPL-1350	SPL-1352-P	SPL-1352-P	SPL-1354-P	SPL-1354-P	SPL-1354-P	SPL-1355-P	SPL-1356-P
EZ-Wrap Spool Tie	EZSP-4370	EZSP-4372	EZSP-4372	EZSP-4374	EZSP-4374	EZSP-4374	EZSP-4375	EZSP-4376
Line Guard, Single	MG-0123	MG-0127	MG-0127	MG-0131	MG-0131	MG-0133	MG-0135	MG-0137
Line Guard, Double	MG-0306	MG-0310	MG-0310	MG-0314	MG-0314	MG-0316	MG-0318	MG-0320

Distribution Line Tie Products for Popular ACSR Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	3/0 6/1	4/0 6/1	266.8 18/1	266.8 26/7	336.4 18/1	336.4 26/7	397.5 18/1	397.5 26/7
Code Word	Pigeon	Penguin	Waxwing	Partridge	Merlin	Linnet	Chickadee	Ibis
diameter (in.)	0.502	0.563	0.609	0.642	0.684	0.720	0.743	0.783
PRODUCT								
WRAPLOCK Tie, C-Neck	WTC-0116	WTC-0118	WTC-0119	WTC-0120	WTC-0121	WTC-0122	WTC-0122	WTC-0123
WRAPLOCK Tie, F-Neck	WTF-0216	WTF-0218	WTF-0219	WTF-0220	WTF-0221	WTF-0222	WTF-0222	WTF-0223
WRAPLOCK Tie, J-Neck	WTJ-0416	WTJ-0418	WTJ-0419	WTJ-0420	WTJ-0421	WTJ-0422	WTJ-0422	WTJ-0423
Distribution Tie, C-Neck	UTC-1107	UTC-1108	UTC-1109	UTC-1109	UTC-1110	UTC-1110	UTC-1110	UTC-1111
Distribution Tie, F-Neck	UTF-1207	UTF-1208	UTF-1209	UTF-1209	UTF-1210	UTF-1210	UTF-1210	UTF-1211
Distribution Tie, J-Neck	UTJ-1307	UTJ-1308	UTJ-1309	UTJ-1309	UTJ-1310	UTJ-1310	UTJ-1310	UTJ-1311
Distribution Tie, K-Neck	UTK-1607	UTK-1608	UTK-1609	UTK-1609	UTK-1610	UTK-1610	UTK-1610	UTK-1611
EZ-Wrap Twin Tie, C & F	TTCF-107	TTCF-108	TTCF-109	TTCF-109	TTCF-110	TTCF-110	TTCF-110	TTCF-111
EZ-Wrap Twin Tie, F & J	TTFJ-207	TTFJ-208	TTFJ-209	TTFJ-209	TTFJ-210	TTFJ-210	TTFJ-210	TTFJ-211
Double Support Tie, C & F	DST-0155	DST-0156	DST-0157	DST-0157	DST-0158	DST-0158	DST-0158	DST-0159
Double Support Tie, J-Neck	DST-0355	DST-0356	DST-0357	DST-0357	DST-0358	DST-0358	DST-0358	DST-0359
Side Tie, C-Neck	STC-1257-P	STC-1258-P	STC-1259-P	STC-1259-P	STC-1260-P	STC-1260-P	STC-1260-P	STC-1261-P
Side Tie, F-Neck	STF-1157-P	STF-1158-P	STF-1159-P	STF-1159-P	STF-1160-P	STF-1160-P	STF-1160-P	STF-1161-P
Side Tie, J-Neck	STJ-1507-P	STJ-1508-P	STJ-1509-P	STJ-1509-P	STJ-1510-P	STJ-1510-P	STJ-1510-P	STJ-1511-P
EZ-Wrap Side Tie, C-Neck	EZSTC-277	EZSTC-278	EZSTC-279	EZSTC-279	EZSTC-280	EZSTC-280	EZSTC-280	EZSTC-281
EZ-Wrap Side Tie, F-Neck	EZSTF-177	EZSTF-178	EZSTF-179	EZSTF-179	EZSTF-180	EZSTF-180	EZSTF-180	EZSTF-181
EZ-Wrap Side Tie, J-Neck	EZSTJ-577	EZSTJ-578	EZSTJ-579	EZSTJ-579	EZSTJ-580	EZSTJ-580	EZSTJ-580	EZSTJ-581
Double Side Tie, C & F	DBST-1105	DBST-1106	DBST-1107	DBST-1107	DBST-1108	DBST-1108	DBST-1108	DBST-1109
Double Side Tie, J-Neck	DBST-1305	DBST-1306	DBST-1307	DBST-1307	DBST-1308	DBST-1308	DBST-1308	DBST-1309
Spool Tie	SPL-1357-P	SPL-1358-P	SPL-1359-P	SPL-1359-P	SPL-1360-P	SPL-1360-P	SPL-I360-P	SPL-1361-P
EZ-Wrap Spool Tie	EZSP-4377	EZSP-4378	EZSP-4379	EZSP-4379	EZSP-4380	EZSP-4380	EZSP-4380	EZSP-4381
Line Guard, Single	MG-0139	MG-0141	MG-0143	MG-0144	MG-0146	MG-0147	MG-0148	MG-0148
Line Guard, Double	MG-0322	MG-0324	MG-0326	MG-0327	MG-0329	MG-0330	MG-0331	MG-0331

Distribution: Product Selection Charts

Distribution Line Tie Products for Popular ACSR Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	477 18/1	477 26/7	556.5 18/1	556.5 26/7	605 26/7	636 18/1	636 26/7	666.6 26/7
Code Word	Pelican	Hawk	Osprey	Dove	Squab	Kingbird	Grosbeak	Gannet
diameter (in.)	0.814	0.858	0.879	0.927	0.966	0.940	0.990	1.014
PRODUCT								
WRAPLOCK Tie, C-Neck	WTC-0124	WTC-0125	WTC-0125	WTC-0126	WTC-0127	WTC-0126	WTC-0127	WTC-0127
WRAPLOCK Tie, F-Neck	WTF-0224	WTF-0225	WTF-0225	WTF-0226	WTF-0227	WTF-0226	WTF-0227	WTF-0227
WRAPLOCK Tie, J-Neck	WTJ-0424	WTJ-0425	WTJ-0425	WTJ-0426	WTJ-0427	WTJ-0426	WTJ-0427	WTJ-0427
Distribution Tie, C-Neck	UTC-1111	UTC-1112	UTC-1112	UTC-1112	UTC-1112	UTC-1112	UTC-1113	UTC-1113
Distribution Tie, F-Neck	UTF-1211	UTF-1212	UTF-1212	UTF-1212	UTF-1212	UTF-1212	UTF-1213	UTF-1213
Distribution Tie, J-Neck	UTJ-1311	UTJ-1312	UTJ-1312	UTJ-1312	UTJ-1312	UTJ-1312	UTJ-1313	UTJ-1313
Distribution Tie, K-Neck	UTK-1611	UTK-1612	UTK-1612	UTK-1612	UTK-1612	UTK-1612	UTK-1613	UTK-1613
EZ-Wrap Twin Tie, C & F	TTCF-111	TTCF-112	TTCF-112	TTCF-112	TTCF-112	TTCF-112	TTCF-113	TTCF-113
EZ-Wrap Twin Tie, F & J	TTFJ-211	TTFJ-212	TTFJ-212	TTFJ-212	TTFJ-212	TTFJ-212	TTFJ-213	TTFJ-213
Double Support Tie, C & F	DST-0159	DST-0150	DST-0159	DST-0160	DST-0160	DST-0160	DST-0161	DST-0161
Double Support Tie, J-Neck	DST-0359	DST-0350	DST-0359	DST-0360	DST-0360	DST-0360	DST-0361	DST-0361
Side Tie, C-Neck	STC-1261-P	STC-1261-P	STC-1262-P	STC-1262-P	STC-1262-P	STC-1262-P	STC-1263-P	STC-1263-P
Side Tie, F-Neck	STF-1161-P	STF-1161-P	STF-1162-P	STF-1162-P	STF-1162-P	STF-1162-P	STF-1163-P	STF-1163-P
Side Tie, J-Neck	STJ-1511-P	STJ-1511-P	STJ-1512-P	STJ-1512-P	STJ-1512-P	STJ-1512-P	STJ-1513-P	STJ-1513-P
EZ-Wrap Side Tie, C-Neck	EZSTC-281	EZSTC-281	EZSTC-282	EZSTC-282	EZSTC-282	EZSTC-282	EZSTC-283	EZSTC-283
EZ-Wrap Side Tie, F-Neck	EZSTF-181	EZSTF-181	EZSTF-182	EZSTF-182	EZSTF-182	EZSTF-182	EZSTF-183	EZSTF-183
EZ-Wrap Side Tie, J-Neck	EZSTJ-581	EZSTJ-581	EZSTJ-582	EZSTJ-582	EZSTJ-582	EZSTJ-582	EZSTJ-583	EZSTJ-583
Double Side Tie, C & F	DBST-1109	DBST-1109	DBST-1110	DBST-1110	DBST-1110	DBST-1110	DBST-1111	DBST-1111
Double Side Tie, J-Neck	DBST-1309	DBST-1309	DBST-1310	DBST-1310	DBST-1310	DBST-1310	DBST-1311	DBST-1311
Spool Tie	SPL-1361-P	SPL-1361-P	SPL-1362-P	SPL-1362-P	SPL-1362-P	SPL-1362-P	N/A	N/A
EZ-Wrap Spool Tie	EZSP-4381	EZSP-4381	EZSP-4382	EZSP-4382	EZSP-4382	EZSP-4382	N/A	N/A
Line Guard, Single	MG-0149	MG-0150	MG-0150	MG-0151	MG-0152	MG-0151	MG-0153	MG-0153
Line Guard, Double	MG-0332	MG-0333	MG-0333	MG-0334	MG-0335	MG-0334	MG-0336	MG-0336

Distribution Line Tie Products for Popular ACSR Conductors (see Catalog Pages for Conductors Not Listed)							
kcmil	715.5 26/7	795 36/1	795 45/7	795 26/7	954 45/7	954 54/7	1033.5 45/7
Code Word	Starling	Coot	Tern	Drake	Rail	Cardinal	Ortolan
diameter (in.)	1.051	1.040	1.063	1.108	1.165	1.196	1.212
PRODUCT							
WRAPLOCK Tie, C-Neck	WTC-0128	WTC-0128	WTC-0128	WTC-0129	WTC-0130	WTC-0130	WTC-0130
WRAPLOCK Tie, F-Neck	WTF-0228	WTF-0228	WTF-0228	WTF-0229	WTF-0230	WTF-0230	WTF-0230
WRAPLOCK Tie, J-Neck	WTJ-0428	WTJ-0428	WTJ-0428	WTJ-0429	WTJ-0430	WTJ-0430	WTJ-0430
Distribution Tie, C-Neck	UTC-1113	UTC-1113	UTC-1113	UTC-1114	UTC-1114	UTC-1114	UTC-1114
Distribution Tie, F-Neck	UTF-1213	UTF-1213	UTF-1213	UTF-1214	UTF-1214	UTF-1214	UTF-1214
Distribution Tie, J-Neck	UTJ-1313	UTJ-1313	UTJ-1313	UTJ-1314	UTJ-1314	UTJ-1314	UTJ-1314
Distribution Tie, K-Neck	UTK-1613	UTK-1613	UTK-1613	UTK-1614	UTK-1614	UTK-1614	UTK-1614
EZ-Wrap Twin Tie, C & F	TTCF-113	TTCF-113	TTCF-113	TTCF-114	TTCF-114	TTCF-114	TTCF-114
EZ-Wrap Twin Tie, F & J	TTFJ-213	TTFJ-213	TTFJ-213	TTFJ-214	TTFJ-214	TTFJ-214	TTFJ-214
Double Support Tie, C & F	DST-0161	DST-0161	DST-0161	DST-0162	DST-0162	DST-0162	DST-0162
Double Support Tie, J-Neck	DST-0361	DST-0361	DST-0361	DST-0362	DST-0362	DST-0362	DST-0362
Side Tie, C-Neck	STC-1263-P	STC-1263-P	STC-1263-P	STC-1264-P	STC-1264-P	STC-1264-P	STC-1264-P
Side Tie, F-Neck	STF-1163-P	STF-1163-P	STF-1163-P	STF-1164-P	STF-1164-P	STF-1164-P	STF-1164-P
Side Tie, J-Neck	STJ-1513-P	STJ-1513-P	STJ-1513-P	STJ-1514-P	STJ-1514-P	STJ-1514-P	STJ-1514-P
EZ-Wrap Side Tie, C-Neck	EZSTC-283	EZSTC-283	EZSTC-283	EZSTC-284	EZSTC-284	EZSTC-284	EZSTC-284
EZ-Wrap Side Tie, F-Neck	EZSTF-183	EZSTF-183	EZSTF-183	EZSTF-184	EZSTF-184	EZSTF-184	EZSTF-184
EZ-Wrap Side Tie, J-Neck	EZSTJ-583	EZSTJ-583	EZSTJ-583	EZSTJ-584	EZSTJ-584	EZSTJ-584	EZSTJ-584
Double Side Tie, C & F	DST-1111	DST-1111	DST-1111	DST-1112	DST-1112	DST-1112	DST-1112
Double Side Tie, J-Neck	DST-1311	DST-1311	DST-1311	DST-1312	DST-1312	DST-1312	DST-1312
Spool Tie	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EZ-Wrap Spool Tie	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Line Guard, Single	MG-0154	MG-0154	MG-0154	MG-0156	MG-0157	MG-0157	MG-0158
Line Guard, Double	MG-0337	MG-0337	MG-0337	MG-0339	MG-0340	MG-0340	MG-0341

Distribution: Product Selection Charts

Other Distribution Line Products for Popular ACSR Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	**#6 6/1**	**#4 6/1**	**#4 7/1**	**#2 6/1**	**#2 7/1**	**#1 6/1**	**1/0 6/1**	**2/0 6/1**
Code Word	**Turkey**	**Swan**	**Swanate**	**Sparrow**	**Sparate**	**Robin**	**Raven**	**Quail**
diameter (in.)	**0.198**	**0.250**	**0.257**	**0.316**	**0.325**	**0.355**	**0.398**	**0.447**
DEAD-END PRODUCTS								
Distribution-Grip Dead-End	DG-4554	DG-4541	DG-4541	DG-4542	DG-4542	DG-4543	DG-4544	DG-4545
Overhead Dead-End	N/A	OHDE-9534	OHDE-9534	OHDE-9536	OHDE-9536	OHDE-9537	OHDE-9538	OHDE-9539
O-Grip Dead-End	N/A	OG-9360	OG-9360	OG-9361	OG-9361	N/A	N/A	N/A
Slack Span Dead-End, C & F	SJDE-9120	SSDE-9122	SSDE-9122	SSDE-9124	SSDE-9124	SSDE-9125	SSDE-9126	SSDE-9127
Slack Span Dead-End, J-Neck	N/A	SSDE-9142	SSDE-9142	SSDE-9144	SSDE-9144	SSDE-9145	SSDE-9146	SSDE-9147
Service-Grip Dead-End	SG-4500	SG-4502	SG-4502	SG-4504	SG-4504	SG-4505	SG-4506	SG-4507
SPLICE PRODUCTS								
Conductor Splice	LS-0108	LS-0114	LS-0114	LS-0120	LS-0120	LS-0123	LS-0125	LS-0129
Full Tension Splice	N/A	FTS-5100	FTS-5101	FTS-5102	FTS-5103	N/A	FTS-5104	FTS-5105
MOTION CONTROL PRODUCTS								
Spiral Vibration Damper	5050102	5050103	5050103	5050103	5050103	5050104	5050104	5050104
VORTX Conductor damper	N/A	N/A	N/A	N/A	N/A	N/A	VSD-1012	VSD-1012
Air Flow Spoiler	N/A	5058100	5058100	5058100	5058100	5058101	5058101	5058101

Other Distribution Line Products for Popular ACSR Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	**3/0 6/1**	**4/0 6/1**	**266.8 18/1**	**266.8 26/7**	**336.4 18/1**	**336.4 26/7**	**397.5 18/1**	**397.5 26/7**
Code Word	**Pigeon**	**Penguin**	**Waxwing**	**Partridge**	**Merlin**	**Linnet**	**Chickadee**	**Ibis**
diameter (in.)	**0.502**	**0.563**	**0.609**	**0.642**	**0.684**	**0.720**	**0.743**	**0.783**
DEAD-END PRODUCTS								
Distribution-Grip Dead-End	DG-4546	DG-4547	DG-4548	DG-4548	DG-4549	DG-4549	DG-4550	DG-4550
Overhead Dead-End	OHDE-9540	OHDE-4577	N/A	N/A	N/A	N/A	N/A	N/A
Slack Span Dead-End, C & F	SSDE-9128	SSDE-9129	SSDE-9130	SSDE-9130	SSDE-9131	SSDE-9131	SSDE-9131	SSDE-9131
Slack Span Dead-End, J-Neck	SSDE-9148	SSDE-9149	SSDE-9150	SSDE-9150	SSDE-9151	SSDE-9151	SSDE-9151	SSDE-9151
Service-Grip Dead-End	SG-4508	SG-4509	N/A	N/A	N/A	N/A	N/A	N/A
SPLICE PRODUCTS								
Conductor Splice	LS-0131	LS-0134	LS-0136	LS-0137	LS-0139	LS-0140	LS-0141	LS-0142
Full Tension Splice	FTS-5108	FTS-5110	FTSMS4290	FTS-5111	FTS-5112	FTS-5113	N/A	FTS-5115
MOTION CONTROL PRODUCTS								
Spiral Vibration Damper	5050105	5050105	5050106	5050106	5050106	5050106	5050106	N/A
VORTX Conductor Damper	VSD-2016	VSD-2016	VSD-2016	VSD-2020	VSD-2020	VSD-2020	VSD-2520	VSD-2520
Air Flow Spoiler	5058102	5058102	5058103	5058103	5058103	5058103	5058103	5058104

Distribution: Product Selection Charts

Other Distribution Line Products for Popular ACSR Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	**477 18/1**	**477 26/7**	**556.5 18/1**	**556.5 26/7**	**605 26/7**	**636 18/1**	**636 26/7**	**666.6 26/7**
Code Word	**Pelican**	**Hawk**	**Osprey**	**Dove**	**Squab**	**Kingbird**	**Grosbeak**	**Gannet**
diameter (in.)	**0.814**	**0.858**	**0.879**	**0.927**	**0.966**	**0.940**	**0.990**	**1.014**
DEAD-END PRODUCTS								
Distribution-Grip Dead-End	DG-4550	DG-4551	DG-4551	DG-4551	DG-4552	DG-4552	DG-4552	DG-4552
Slack Span Dead-End, C & F	SSDE-9132	SSDE-9132	SSDE-9132	SSDE-9133	SSDE-9133	SSDE-9133	SSDE-9133	SSDE-9133
Slack Span Dead-End, J-Neck	SSDE-9152	SSDE-9152	SSDE-9152	SSDE-9153	SSDE-9153	SSDE-9153	SSDE-9153	SSDE-9153
SPLICE PRODUCTS								
Conductor Splice	LS-0143	LS-0145	LS-0145	LS-0146	LS-0147	LS-0147	LS-0148	LS-0149
Full Tension Splice	FTMS6056	FTS-5117	FTSMS6515	FTS-5118	N/A	FTSMS4264	FTS-5120	FTSMS6627
MOTION CONTROL PRODUCTS								
VORTX Conductor Damper	VSD-2525	VSD-3525	VSD-3525	VSD-3525	VSD-3525	VSD-3525	VSD-4032	VSD-4032
Air Flow Spoiler	5058104	5058104	5058104	5058105	5058105	5058105	5058105	5058105

Other Distribution Line Products for Popular ACSR Conductors (see Catalog Pages for Conductors Not Listed)							
kcmil	**715.5 26/7**	**795 36/1**	**795 45/7**	**795 26/7**	**954 45/7**	**954 54/7**	**1033.5 45/7**
Code Word	**Starling**	**Coot**	**Tern**	**Drake**	**Rail**	**Cardinal**	**Ortola**
diameter (in.)	**1.051**	**1.040**	**1.063**	**1.108**	**1.165**	**1.196**	**1.212**
DEAD-END PRODUCTS							
Distribution-Grip Dead-End	DG-4552	DG-4552	DG-4552	DG-4553	DG-4553	DG-4553	D-4553
Slack Span Dead-End, C & F	SSDE-9134	SSDE-9134	SSDE-9134	SSDE-9134	SSDE-9134	SSDE-9134	SSDE-9134
Slack Span Dead-End, J-Neck	SSDE-9154	SSDE-9154	SSDE-9154	SSDE-9154	SSDE-9154	SSDE-9154	SSDE-9154
SPLICE PRODUCTS							
Conductor Splice	LS-0150	LS-0149	LS-0150	LS-0151	LS-0152	LS-0153	LS-0153
Full Tension Splice	FTSMS2901	N/A	N/A	FTS-5122	FTSMS4739	FTSMS4743	N/A
MOTION CONTROL PRODUCTS							
VORTX Conductor Damper	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032
Air Flow Spoiler	5058106	5058106	5058106	5058106	5058106	5058107	5058107

Distribution: Product Selection Charts

Distribution Line Tie Products for Popular All Aluminum (AAC) Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	**#2 7str**	**#1 7str**	**1/0 7str**	**2/0 7str**	**3/0 7str**	**4/0 7str**	**266.8 7str**	**266.8 16str**
Code Word	**Iris**	**Pansy**	**Poppy**	**Aster**	**Phlox**	**Oxlip**	**Daisy**	**Laurel**
diameter (in.)	**0.292**	**0.328**	**0.368**	**0.414**	**0.464**	**0.522**	**0.586**	**0.593**
PRODUCT								
WRAPLOCK Tie, C-Neck	WTC-0104	WTC-0107	WTC-0110	WTC-0113	WTC-0115	WTC-0116	WTC-0118	WTC-0118
WRAPLOCK Tie, F-Neck	WTC-0204	WTF-0207	WTF-0210	WTF-0213	WTF-0215	WTF-0216	WTC-0218	WTC-0218
WRAPLOCK Tie, J-Neck	WTC-0404	WTJ-0407	WTJ-0410	WTJ-0413	WTJ-0415	WTJ-0416	WTJ-0418	WTJ-0418
Distribution Tie, C-Neck	UTC-1103	UTC-1104	UTC-1105	UTC-1106	UTC-1107	UTC-1108	UTC-1108	UTC-1109
Distribution Tie, F-Neck	UTF-1203	UTF-1204	UTF-1205	UTF-1206	UTF-1207	UTF-1208	UTF-1208	UTF-1209
Distribution Tie, J-Neck	UTJ-1303	UTJ-1304	UTJ-1305	UTJ-1306	UTJ-1307	UTJ-1308	UTJ-1308	UTJ-1309
Distribution Tie, K-Neck	N/A	UTK-1604	UTK-1605	UTK-1606	UTK-1607	UTK-1608	UTK-1608	UTK-1609
EZ-Wrap Twin Tie, C & F	TTCF-103	TTCF-104	TTCF-105	TTCF-106	TTCF-107	TTCF-108	TTCF-108	TTCF-109
EZ-Wrap Twin Tie, F & J	TTFJ-203	TTFJ-204	TTFJ-205	TTFJ-206	TTFJ-207	TTFJ-208	TTFJ-208	TTFJ-209
Double Support Tie, C & F	DST-0151	DST-0152	DST-0153	DST-0154	DST-0155	DST-0156	DST-0156	DST-0157
Double Support Tie, J-Neck	DST-0351	DST-0352	DST-0353	DST-0354	DST-0355	DST-0356	DST-0356	DST-0357
Side Tie, C-Neck	STC-1253-P	STC-1254-P	STC-1255-P	STC-1256-P	STC-1257-P	STC-1258-P	STC-1258-P	STC-1259-P
Side Tie, F-Neck	STF-1153-P	STF-1154-P	STF-1155-P	STF-1156-P	STF-1157-P	STF-1158-P	STF-1158-P	STF-1159-P
Side Tie, J-Neck	STJ-1503-P	STJ-1504-P	STJ-1505-P	STJ-1506-P	STJ-1507-P	STJ-1508-P	STJ-1508-P	STJ-1509-P
EZ-Wrap Side Tie, C-Neck	EZSTC-273	EZSTC-274	EZSTC-275	EZSTC-276	EZSTC-277	EZSTC-278	EZSTC-278	EZSTC-279
EZ-Wrap Side Tie, F-Neck	EZSTF-173	EZSTF-174	EZSTF-175	EZSTF-176	EZSTF-177	EZSTF-178	EZSTF-178	EZSTF-179
EZ-Wrap Side Tie, J-Neck	EZSTJ-573	EZSTJ-574	EZSTJ-575	EZSTJ-576	EZSTJ-577	EZSTJ-578	EZSTJ-578	EZSTJ-579
Double Side Tie, C & F	DBST-1101	DBST-1102	DBST-1103	DBST-1104	DBST-1105	DBST-1106	DBST-1106	DBST-1107
Double Side Tie, J-Neck	DBST-1301	DBST-1302	DBST-1303	DBST-1304	DBST-1305	DBST-1306	DBST-1306	DBST-1307
Spool Tie	SPL-1353-P	SPL-1354-P	SPL-1355-P	SPL-1356-P	SPL-1357-P	SPL-1358-P	SPL-1358-P	SPL-1359-P
EZ-Wrap Spool Tie	EZSP-4373	EZSP-4374	EZSP-4375	EZSP-4376	EZSP-4377	EZSP-4378	EZSP-4378	EZSP-4379
Line Guard, Single	MG-0130	MG-0132	MG-0134	MG-0136	MG-0138	MG-0140	MG-0142	MG-0142
Line Guard, Double	MG-0313	MG-0315	MG-0317	MG-0319	MG-0321	MG-0323	MG-0325	MG-0325

Distribution: Product Selection Charts

Distribution Line Tie Products for Popular All Aluminum (AAC) Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	**336.4 19str**	**350 19str**	**397.5 19str**	**450 19str**	**477 19str**	**477 37str**	**556.5 19str**	**556.5 37str**
Code Word	**Tulip**	**Daffodil**	**Canna**	**Goldentuft**	**Cosmos**	**Syringa**	**Dahlia**	**Mistletoe**
diameter (in.)	**0.666**	**0.679**	**0.724**	**0.770**	**0.793**	**0.795**	**0.856**	**0.858**
PRODUCT								
WRAPLOCK Tie, C-Neck	WTC-0121	WTC-0121	WTC-0122	WTC-0123	WTC-0123	WTC-0123	WTC-0125	WTC-0125
WRAPLOCK Tie, F-Neck	WTF-0221	WTF-0221	WTF-0222	WTF-0223	WTF-0223	WTF-0223	WTF-0225	WTF-0225
WRAPLOCK Tie, J-Neck	WTJ-0421	WTJ-0421	WTJ-0422	WTJ-0423	WTJ-0423	WTJ-0423	WTJ-0425	WTJ-0425
Distribution Tie, C-Neck	UTC-1110	UTC-1110	UTC-1110	UTC-1111	UTC-1111	UTC-1111	UTC-1111	UTC-1111
Distribution Tie, F-Neck	UTF-1210	UTF-1210	UTF-1210	UTF-1211	UTF-1211	UTF-1211	UTF-1211	UTF-1211
Distribution Tie, J-Neck	UTJ-1310	UTJ-1310	UTJ-1310	UTJ-1311	UTJ-1311	UTJ-1311	UTJ-1311	UTJ-1311
Distribution Tie, K-Neck	UTK-1610	UTK-1610	UTK-1610	UTK-1611	UTK-1611	UTK-1611	UTK-1611	UTK-1611
EZ-Wrap Twin Tie, C & F	TTCF-110	TTCF-110	TTCF-110	TTCF-111	TTCF-111	TTCF-111	TTCF-111	TTCF-111
EZ-Wrap Twin Tie, F & J	TTFJ-210	TTFJ-210	TTFJ-210	TTFJ-211	TTFJ-211	TTFJ-211	TTFJ-211	TTFJ-211
Double Support Tie, C & F	DST-0158	DST-0158	DST-0158	DST-0159	DST-0159	DST-0159	DST-0159	DST-0159
Double Support Tie, J-Neck	DST-0358	DST-0358	DST-0358	DST-0359	DST-0359	DST-0359	DST-0359	DST-0359
Side Tie, C-Neck	STC-1260-P	STC-1260-P	STC-1260-P	STC-1261-P	STC-1261-P	STC-1261-P	STC-1261-P	STC-1261-P
Side Tie, F-Neck	STF-1160-P	STF-1160-P	STF-1160-P	STF-1161-P	STF-1161-P	STF-1161-P	STF-1161-P	STF-1161-P
Side Tie, J-Neck	STJ-1510-P	STJ-1510-P	STJ-1510-P	STJ-1511-P	STJ-1511-P	STJ-1511-P	STJ-1511-P	STJ-1511-P
EZ-Wrap Side Tie, C-Neck	EZSTC-280	EZSTC-280	EZSTC-280	EZSTC-281	EZSTC-281	EZSTC-281	EZSTC-281	EZSTC-281
EZ-Wrap Side Tie, F-Neck	EZSTF-180	EZSTF-180	EZSTF-180	EZSTF-181	EZSTF-181	EZSTF-181	EZSTF-181	EZSTF-181
EZ-Wrap Side Tie, J-Neck	EZSTJ-580	EZSTJ-580	EZSTJ-580	EZSTJ-581	EZSTJ-581	EZSTJ-581	EZSTJ-581	EZSTJ-581
Double Side Tie, C & F	DBST-1108	DBST-1108	DBST-1108	DBST-1109	DBST-1109	DBST-1109	DBST-1109	DBST-1109
Double Side Tie, J-Neck	DBST-1308	DBST-1308	DBST-1308	DBST-1309	DBST-1309	DBST-1309	DBST-1309	DBST-1309
Spool Tie	SPL-1360-P	SPL-1360-P	SPL-1360-P	SPL-1361-P	SPL-1361-P	SPL-1361-P	SPL-l361-P	SPL-1361-P
EZ-Wrap Spool Tie	EZSP-4380	EZSP-4380	EZSP-4380	EZSP-4381	EZSP-4381	EZSP-4381	EZSP-4381	EZSP-4381
Line Guard, Single	MG-0145	MG-0145	MG-0147	MG-0148	MG-0149	MG-0149	MG-0150	MG-0150
Line Guard, Double	MG-0328	MG-0328	MG-0330	MG-0331	MG-0332	MG-0332	MG-0333	MG-0333

Distribution: Product Selection Charts

Distribution Line Tie Products for Popular All Aluminum (AAC) Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	600 37str	636 37str	650 37str	700 37str	715.5 37str	750 37str	750 61str	795 37str
Code Word	Meadowsw	Orchid	Heuchera	Verbena	Violet	Petunia	Cattail	Arbutus
diameter (in.)	0.891	0.918	0.928	0.963	0.974	0.997	0.998	1.026
PRODUCT								
WRAPLOCK Tie, C-Neck	WTC-0125	WTC-0126	WTC-0126	WTC-0127	WTC-0127	WTC-0127	WTC-0127	WTC-0128
WRAPLOCK Tie, F-Neck	WTF-0225	WTF-0226	WTF-0226	WTF-0227	WTF-0227	WTF-0227	WTF-0227	WTF-0228
WRAPLOCK Tie, J-Neck	WTJ-0425	WTJ-0426	WTJ-0426	WTJ-0427	WTJ-0427	WTJ-0427	WTJ-0427	WTJ-0428
Distribution Tie, C-Neck	UTC-1112	UTC-1112	UTC-1112	UTC-1112	UTC-1113	UTC-1113	UTC-1113	UTC-1113
Distribution Tie, F-Neck	UTF-1212	UTF-1212	UTF-1212	UTF-1212	UTF-1213	UTF-1213	UTF-1213	UTF-1213
Distribution Tie, J-Neck	UTJ-1312	UTJ-1312	UTJ-1312	UTJ-1312	UTJ-1313	UTJ-1313	UTJ-1313	UTJ-1313
Distribution Tie, K-Neck	UTK-1612	UTK-1612	UTK-1612	UTK-1612	UTK-1613	UTK-1613	UTK-1613	UTK-1613
EZ-Wrap Twin Tie, C & F	TTCF-112	TTCF-112	TTCF-112	TTCF-112	TTCF-113	TTCF-113	TTCF-113	TTCF-113
EZ-Wrap Twin Tie, F & J	TTFJ-212	TTFJ-212	TTFJ-212	TTFJ-212	TTFJ-213	TTFJ-213	TTFJ-213	TTFJ-213
Double Support Tie, C & F	DST-0160	DST-0160	DST-0160	DST-0160	DST-0161	DST-0161	DST-0161	DST-0161
Double Support Tie, J-Neck	DST-0360	DST-0360	DST-0360	DST-0360	DST-0361	DST-0361	DST-0361	DST-0361
Side Tie, C-Neck	STC-1262-P	STC-1262-P	STC-1262-P	STC-1262-P	STC-1263-P	STC-1263-P	STC-1263-P	STC-1263-P
Side Tie, F-Neck	STF-1162-P	STF-1162-P	STF-1162-P	STF-1162-P	STF-1163-P	STF-1163-P	STF-1163-P	STF-1163-P
Side Tie, J-Neck	STJ-1512-P	STJ-1512-P	STJ-1512-P	STJ-1512-P	STJ-1513-P	STJ-1513-P	STJ-1513-P	STJ-1513-P
EZ-Wrap Side Tie, C-Neck	EZSTC-282	EZSTC-282	EZSTC-282	EZSTC-282	EZSTC-283	EZSTC-283	EZSTC-283	EZSTC-283
EZ-Wrap Side Tie, F-Neck	EZSTF-182	EZSTF-182	EZSTF-182	EZSTF-182	EZSTF-183	EZSTF-183	EZSTF-183	EZSTF-183
EZ-Wrap Side Tie, J-Neck	EZSTJ-582	EZSTJ-582	EZSTJ-582	EZSTJ-582	EZSTJ-583	EZSTJ-583	EZSTJ-583	EZSTJ-583
Double Side Tie, C & F	DBST-1110	DBST-1110	DBST-1110	DBST-1110	DBST-1111	DBST-1111	DBST-1111	DBST-1111
Double Side Tie, J-Neck	DBST-1310	DBST-1310	DBST-1310	DBST-1310	DBST-1311	DBST-1311	DBST-1311	DBST-1311
Spool Tie	SPL-1362-P	SPL-1362-P	SPL-1362-P	SPL-1362-P	N/A	N/A	N/A	N/A
EZ-Wrap Spool Tie	EZSP-4382	EZSP-4382	EZSP-4382	EZSP-4382	N/A	N/A	N/A	N/A
Line Guard, Single	MG-0150	MG-0151	MG-0151	MG-0152	MG-0152	MG-0153	MG-0153	MG-0154
Line Guard, Double	MG-0333	MG-0334	MG-0334	MG-0335	MG-0335	MG-0336	MG-0336	MG-0337

Distribution Line Tie Products for Popular All Aluminum (AAC) Conductors (see Catalog Pages for Conductors Not Listed)						
kcmil	795 61str	954 37str	954 61str	1033.5 37str	1033.5 61str	1113 61str
Code Word	Lilac	Magnolia	Goldenrod	Bluebell	Larkspur	Marigold
diameter (in.)	1.028	1.124	1.126	1.170	1.172	1.216
PRODUCT						
WRAPLOCK Tie, C-Neck	WTC-0128	WTC-0129	WTC-0129	WTC-0129	WTC-0130	WTC-0130
WRAPLOCK Tie, F-Neck	WTF-0228	WTF-0229	WTF-0229	WTF-0229	WTF-0230	WTF-0230
WRAPLOCK Tie, J-Neck	WTJ-0428	WTJ-0429	WTJ-0429	WTJ-0429	WTJ-0430	WTJ-0430
Distribution Tie, C-Neck	UTC-1113	UTC-1114	UTC-1114	UTC-1114	UTC-1114	UTC-1114
Distribution Tie, F-Neck	UTF-1213	UTF-1214	UTF-1214	UTF-1214	UTF-1214	UTF-1214
Distribution Tie, J-Neck	UTJ-1313	UTJ-1314	UTJ-1314	UTJ-1314	UTJ-1314	UTJ-1314
Distribution Tie, K-Neck	UTK-1613	UTK-1614	UTK-1614	UTK-1614	UTK-1614	UTK-1614
EZ-Wrap Twin Tie, C & F	TTCF-113	TTCF-114	TTCF-114	TTCF-114	TTCF-114	TTCF-114
EZ-Wrap Twin Tie, F & J	TTFJ-213	TTFJ-214	TTFJ-214	TTFJ-214	TTFJ-214	TTFJ-214
Double Support Tie, C & F	DST-0161	DST-0164	DST-0162	DST-0162	DST-0162	DST-0162
Double Support Tie, J-Neck	DST-0361	DST-0364	DST-0362	DST-0362	DST-0362	DST-0362
Side Tie, C-Neck	STC-1263-P	STC-1264-P	STC-1264-P	STC-1264-P	STC-1264-P	STC-1264-P
Side Tie, F-Neck	STF-1163-P	STF-1164-P	STF-1164-P	STF-1164-P	STF-1164-P	STF-1164-P
Side Tie, J-Neck	STJ-1513-P	STJ-1514-P	STJ-1514-P	STJ-1514-P	STJ-1514-P	STJ-1514-P
EZ-Wrap Side Tie, C-Neck	EZSTC-283	EZSTC-284	EZSTC-284	EZSTC-284	EZSTC-284	EZSTC-284
EZ-Wrap Side Tie, F-Neck	EZSTF-183	EZSTF-184	EZSTF-184	EZSTF-184	EZSTF-184	EZSTF-184
EZ-Wrap Side Tie, J-Neck	EZSTJ-583	EZSTJ-584	EZSTJ-584	EZSTJ-584	EZSTJ-584	EZSTJ-584
Double Side Tie, C & F	DST-1111	DST-1112	DST-1112	DST-1112	DST-1112	DST-1112
Double Side Tie, J-Neck	DST-1311	DST-1312	DST-1312	DST-1312	DST-1312	DST-1312
Spool Tie	N/A	N/A	N/A	N/A	N/A	N/A
EZ-Wrap Spool Tie	N/A	N/A	N/A	N/A	N/A	N/A
Line Guard, Single	MG-0154	MG-0156	MG-0156	MG-0156	MG-0157	MG-0158
Line Guard, Double	MG-0337	MG-0339	MG-0339	MG-0339	MG-0340	MG-0341

Distribution: Product Selection Charts

Other Distribution Line Products for Popular All Aluminum (AAC) Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	**#2 7str**	**#1 7str**	**1/0 7str**	**2/0 7str**	**3/0 7str**	**4/0 7str**	**266.8 7str**	**266.8 16str**
Code Word	**Iris**	**Pansy**	**Poppy**	**Aster**	**Phlox**	**Oxlip**	**Daisy**	**Laurel**
diameter (in.)	**0.292**	**0.328**	**0.368**	**0.414**	**0.464**	**0.522**	**0.586**	**0.593**
DEAD-END PRODUCTS								
Distribution-Grip Dead-End	DG-4542	DG-4543	DG-4544	DG-4545	DG-4546	DG-4547	DG-4548	DG-4548
Overhead Dead-End	OHDE-9536	OHDE-9537	OHDE-9538	OHDE-9539	OHDE-9540	OHDE-4577	N/A	N/A
O-Grip Dead-End	OG-9361	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slack Span Dead-End, C & F	SSDE-9124	SSDE-9125	SSDE-9126	SSDE-9127	SSDE-9128	SSDE-9129	SSDE-9130	SSDE-9130
Slack Span Dead-End, J-Neck	SSDE-9144	SSDE-9145	SSDE-9146	SSDE-9147	SSDE-9148	SSDE-9149	SSDE-9150	SSDE-9150
Service-Grip Dead-End	SG-4504	SG-4505	SG-4506	SG-4507	SG-4508	SG-4509	N/A	N/A
SPLICE PRODUCTS								
Conductor Splice	LS-0118	LS-0121	LS-0124	LS-0127	LS-0130	LS-0133	LS-0135	LS-0135
MOTION CONTROL PRODUCTS								
Spiral Vibration Damper	5050103	5050104	5050104	5050104	5050105	5050105	5050106	5050106
VORTX Conductor damper	N/A	N/A	N/A	VSD-1012	VSD-1012	VSD-2016	VSD-2016	VSD-2016
Air Flow Spoiler	5058100	5058101	5058101	5058101	5058102	5058102	5058103	5058103

Other Distribution Line Products for Popular All Aluminum (AAC) Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	**336.4 19str**	**350 19str**	**397.5 19str**	**450 19str**	**477 19str**	**477 37str**	**556.5 19str**	**556.5 37str**
Code Word	**Tulip**	**Daffodil**	**Canna**	**Goldentuft**	**Cosmos**	**Syringa**	**Dahlia**	**Mistletoe**
diameter (in.)	**0.666**	**0.679**	**0.724**	**0.770**	**0.793**	**0.795**	**0.856**	**0.858**
DEAD-END PRODUCTS								
Distribution-Grip Dead-End	DG-4549	DG-4549	DG-4549	DG-4550	DG-4550	DG-4550	DG-4551	DG-4551
Slack Span Dead-End, C & F	SSDE-9131	SSDE-9131	SSDE-9131	SSDE-9131	SSDE-9132	SSDE-9132	SSDE-9132	SSDE-9132
Slack Span Dead-End, J-Neck	SSDE9151	SSDE9151	SSDE9151	SSDE9151	SSDE-9152	SSDE-9152	SSDE-9152	SSDE-9152
SPLICE PRODUCTS								
Conductor Splice	LS-0138	LS-0139	LS-0140	LS-0142	LS-0143	LS-0143	LS-0145	LS-0145
MOTION CONTROL PRODUCTS								
Spiral Vibration Damper	5050106	5050106	5050106	N/A	N/A	N/A	N/A	N/A
VORTX Conductor damper	VSD-2020	VSD-2020	VSD-2520	VSD-2520	VSD-2525	VSD-2525	VSD-2525	VSD-3525
Air Flow Spoiler	5058103	5058103	5058103	5058104	5058104	5058104	5058104	5058104

Distribution: Product Selection Charts

Other Distribution Line Products for Popular All Aluminum (AAC) Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	**600 37str**	**636 37str**	**650 37str**	**700 37str**	**715.5 37str**	**750 37str**	**750 61str**	**795 37str**
Code Word	**Meadowsw**	**Orchid**	**Heuchera**	**Verbena**	**Violet**	**Petunia**	**Cattail**	**Arbutus**
diameter (in.)	**0.891**	**0.918**	**0.928**	**0.963**	**0.974**	**0.997**	**0.998**	**1.026**
DEAD-END PRODUCTS								
Distribution-Grip Dead-End	DG-4551	DG-4551	DG-4551	DG-4552	DG-4552	DG-4552	DG-4552	DG-4552
Slack Span Dead-End, C & F	SSDE-9133	SSDE-9133	SSDE-9133	SSDE-9133	SSDE-9133	SSDE-9133	SSDE-9133	SSDE-9134
Slack Span Dead-End, J-Neck	SSDE-9153	SSDE-9153	SSDE-9153	SSDE-9153	SSDE-9153	SSDE-9153	SSDE-9153	SSDE-9154
SPLICE PRODUCTS								
Conductor Splice	LS-0146	LS-0146	LS-0146	LS-0147	LS-0148	LS-0148	LS-0148	LS-0149
MOTION CONTROL PRODUCTS								
VORTX Conductor damper	VSD-3525	VSD-3525	VSD-3525	VSD-3525	VSD-3525	VSD-4032	VSD-4032	VSD-4032
Air Flow Spoiler	5058104	5058104	5058105	5058105	5058105	5058105	5058105	5058106

Other Distribution Line Products for Popular All Aluminum (AAC) Conductors (see Catalog Pages for Conductors Not Listed)						
kcmil	**795 61str**	**954 37str**	**954 61str**	**1033.5 37str**	**1033.5 61str**	**1113 61str**
Code Word	**Lilac**	**Magnolia**	**Goldenrod**	**Bluebell**	**Larkspur**	**Marigold**
diameter (in.)	**1.028**	**1.124**	**1.126**	**1.170**	**1.172**	**1.216**
DEAD-END PRODUCTS						
Distribution-Grip Dead-End	DG-4552	DG-4553	DG-4553	DG-4553	DG-4553	N/A
Slack Span Dead-End, C & F	SSDE-9134	SSDE-9134	SSDE-9134	SSDE-9134	SSDE-9134	SSDE-9134
Slack Span Dead-End, J-Neck	SSDE-9154	SSDE-9154	SSDE-9154	SSDE-9154	SSDE-9154	SSDE-9154
SPLICE PRODUCTS						
Conductor Splice	LS-0149	LS-0151	LS-0151	LS-0152	LS-0152	LS-0153
MOTION CONTROL PRODUCTS						
VORTX Conductor damper	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032	VSD-4032
Air Flow Spoiler	5058106	5058106	5058106	5058107	5085107	5058107

Distribution: Product Selection Charts

Distribution Line Tie Products for Popular Aluminum Alloy Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	#6 7str	#4 7str	#2 7str	1/0 7str	2/0 7str	3/0 7str	4/0 7str	266.8 19str
Code Word	Akron	Alton	Ames	Azuza	Anaheim	Amherst	Alliance	Butte
diameter (in.)	0.198	0.250	0.316	0.398	0.447	0.502	0.563	0.642
PRODUCT								
WRAPLOCK Tie, C-Neck	N/A	WTC-0100	WTC-0106	WTC-0112	WTC-0114	WTC-0116	WTC-0118	WTC-0120
WRAPLOCK Tie, F-Neck	N/A	WTF-0200	WTF-0206	WTC-0212	WTC-0214	WTF-0216	WTF-0218	WTF-0220
WRAPLOCK Tie, J-Neck	N/A	WTJ-0400	WTJ-0406	WTJ-0412	WTJ-0414	WTJ-0416	WTJ-0418	WTJ-0420
Distribution Tie, C-Neck	UTC-1100	UTC-1102	UTC-1104	UTC-1105	UTC-1106	UTC-1107	UTC-1108	UTC-1109
Distribution Tie, F-Neck	UTF-1200	UTF-1202	UTF-1204	UTF-1205	UTF-1206	UTF-1207	UTF-1208	UTF-1209
Distribution Tie, J-Neck	UTJ-1300	UTJ-1302	UTJ-1304	UTJ-1305	UTJ-1306	UTJ-1307	UTJ-1308	UTJ-1309
Distribution Tie, K-Neck	UTK-1600	UTK-1602	UTK-1604	UTK-1605	UTK-1606	UTK-1607	UTK-1608	UTK-1609
EZ-Wrap Twin Tie, C & F	TTCF-0100	TTCF-102	TTCF-104	TTCF-105	TTCF-106	TTCF-107	TTCF-108	TTCF-109
EZ-Wrap Twin Tie, F & J	N/A	TTFJ-202	TTFJ-204	TTFJ-205	TTFJ-206	TTFJ-207	TTFJ-208	TTFJ-209
Double Support Tie, C & F	N/A	DST-0150	DST-0152	DST-0153	DST-0154	DST-0155	DST-0156	DST-0157
Double Support Tie, J-Neck	N/A	DST-0350	DST-0352	DST-0353	DST-0354	DST-0355	DST-0356	DST-0357
Side Tie, C-Neck	STC-1250-P	STC-1252-P	STC-1254-P	STC-1255-P	STC-1256-P	STC-1257-P	STC-1258-P	STC-1259-P
Side Tie, F-Neck	STF-1150-P	STF-1152-P	STF-1154-P	STF-1155-P	STF-1156-P	STF-1157-P	STF-1158-P	STF-1159-P
Side Tie, J-Neck	STJ-1500-P	STJ-1502-P	STJ-1504-P	STJ-1505-P	STJ-1506-P	STJ-1507-P	STJ-1508-P	STJ-1509-P
EZ-Wrap Side Tie, C-Neck	EZSTC-270	EZSTC-272	EZSTC-274	EZSTC-275	EZSTC-276	EZSTC-277	EZSTC-278	EZSTC-279
EZ-Wrap Side Tie, F-Neck	EZSTF-170	EZSTF-172	EZSTF-174	EZSTF-175	EZSTF-176	EZSTF-177	EZSTF-178	EZSTF-179
EZ-Wrap Side Tie, J-Neck	EZSTJ-570	EZSTJ-572	EZSTJ-574	EZSTJ-575	EZSTJ-576	EZSTJ-577	EZSTJ-578	EZSTJ-579
Double Side Tie, C & F	N/A	DBST-1100	DBST-1102	DBST-1103	DBST-1104	DBST-1105	DBST-1106	DBST-1107
Double Side Tie, J-Neck	N/A	DBST-1300	DBST-1302	DBST-1303	DBST-1304	DBST-1305	DBST-1306	DBST-1307
Spool Tie	SPL-1350-P	SPL-1352-P	SPL-1354-P	SPL-1355-P	SPL-1356-P	SPL-1357-P	SPL-1358-P	SPL-1359-P
EZ-Wrap Spool Tie	EZSP-4370	EZSP-4372	EZSP-4374	EZSP-4375	EZSP-4376	EZSP-4377	EZSP-4378	EZSP-4379
Line Guard, Single	MG-0123	MG-0127	MG-0131	MG-0135	MG-0137	MG-0139	MG-0141	MG-0144
Line Guard, Double	MG-0306	MG-0310	MG-0314	MG-0318	MG-0320	MG-0322	MG-0324	MG-0327

Distribution Line Tie Products for Popular Aluminum Alloy Conductors (see Catalog Pages for Conductors Not Listed)						
kcmil	336.4 19str	397.5 19str	477 19str	556.5 19str	636 37str	795 37str
Code Word	Canton	Cairo	Darien	Elgin	Flint	Greeley
diameter (in.)	0.721	0.783	0.858	0.927	0.991	1.108
PRODUCT						
WRAPLOCK Tie, C-Neck	WTC-0122	WTC-0123	WTC-0125	WTC-0126	WTC-0127	WTC-0129
WRAPLOCK Tie, F-Neck	WTF-0222	WTF-0223	WTF-0225	WTF-0226	WTF-0227	WTF-0229
WRAPLOCK Tie, J-Neck	WTJ-0422	WTJ-0423	WTJ-0425	WTJ-0426	WTJ-0427	WTJ-0429
Distribution Tie, C-Neck	UTC-1110	UTC-1111	UTC-1111	UTC-1112	UTC-1113	UTC-1114
Distribution Tie, F-Neck	UTF-1210	UTF-1211	UTF-1211	UTF-1212	UTF-1213	UTF-1214
Distribution Tie, J-Neck	UTJ-1310	UTJ-1311	UTJ-1311	UTJ-1312	UTJ-1313	UTJ-1314
Distribution Tie, K-Neck	UTK-1610	UTK-1611	UTK-1611	UTK-1612	UTK-1613	UTK-1614
EZ-Wrap Twin Tie, C & F	TTCF-110	TTCF-111	TTCF-111	TTCF-112	TTCF-113	TTCF-114
EZ-Wrap Twin Tie, F & J	TTFJ-210	TTFJ-211	TTFJ-211	TTFJ-212	TTFJ-213	TTFJ-214
Double Support Tie, C & F	DST-0158	DST-0159	DST-0159	DST-0160	DST-0161	DST-0162
Double Support Tie, J-Neck	DST-0358	DST-0359	DST-0359	DST-0360	DST-0361	DST-0362
Side Tie, C-Neck	STC-1260-P	STC-1261-P	STC-1261-P	STC-1262-P	STC-1263-P	STC-1264-P
Side Tie, F-Neck	STF-1160-P	STF-1161-P	STF-1161-P	STF-1162-P	STF-1163-P	STF-1164-P
Side Tie, J-Neck	STJ-1510-P	STJ-1511-P	STJ-1511-P	STJ-1512-P	STJ-1513-P	STJ-1514-P
EZ-Wrap Side Tie, C-Neck	EZSTC-280	EZSTC-281	EZSTC-281	EZSTC-282	EZSTC-283	EZSTC-284
EZ-Wrap Side Tie, F-Neck	EZSTF-180	EZSTF-181	EZSTF-181	EZSTF-182	EZSTF-183	EZSTF-184
EZ-Wrap Side Tie, J-Neck	EZSTJ-580	EZSTJ-581	EZSTJ-581	EZSTJ-582	EZSTJ-583	EZSTJ-584
Double Side Tie, C & F	DBST-1108	DBST-1109	DBST-1109	DBST-1110	DBST-1111	DST-1112
Double Side Tie, J-Neck	DBST-1308	DBST-1309	DBST-1309	DBST-1310	DBST-1311	DST-1312
Spool Tie	SPL-1360-P	SPL-1361-P	SPL-1361-P	SPL-1362-P	N/A	N/A
EZ-Wrap Spool Tie	EZSP-4380	EZSP-4381	EZSP-4381	EZSP-4382	N/A	N/A
Line Guard, Single	MG-0147	MG-0148	MG-0150	MG-0151	MG-0153	MG-0156
Line Guard, Double	MG-0330	MG-0331	MG-0333	MG-0334	MG-0336	MG-0339

Distribution: Product Selection Charts

Other Distribution Line Products for Popular Aluminum Alloy Conductors (see Catalog Pages for Conductors Not Listed)								
kcmil	**#6 7str**	**#4 7str**	**#2 7str**	**1/0 7str**	**2/0 7str**	**3/0 7str**	**4/0 7str**	**266.8 19str**
Code Word	**Akron**	**Alton**	**Ames**	**Azuza**	**Anaheim**	**Amherst**	**Alliance**	**Butte**
diameter (in.)	**0.198**	**0.250**	**0.316**	**0.398**	**0.447**	**0.502**	**0.563**	**0.642**
DEAD-END PRODUCTS								
Distribution-Grip Dead-End	DG-4554	DG-4541	DG-4542	DG-4544	DG-4545	DG-4546	DG-4547	DG-4548
Overhead Dead-End	N/A	OHDE-9534	OHDE-9536	OHDE-9538	OHDE-9539	OHDE-9540	OHDE-4577	N/A
O-Grip Dead-End	N/A	OG-9360	OG-9361	N/A	N/A	N/A	N/A	N/A
Slack Span Dead-End, C & F	N/A	SSDE-9122	SSDE-9124	SSDE-9126	SSDE-9127	SSDE-9128	SSDE-9129	SSDE-9130
Slack Span Dead-End, J-Neck	N/A	SSDE-9142	SSDE-9144	SSDE-9146	SSDE-9147	SSDE-9148	SSDE-9149	SSDE-9150
Service-Grip Dead-End	SG-4500	SG-4502	SG-4504	SG-4506	SG-4507	SG-4508	SG-4509	N/A
SPLICE PRODUCTS								
Conductor Splice	LS-0108	LS-0114	LS-0120	LS-0125	LS-0129	LS-0131	LS-0134	LS-0137
Full Tension Splice	N/A	FTS-5100	FTS-5102	FTS-5104	FTS-5105	FTS-5108	FTS-5110	FTS-5111
MOTION CONTROL PRODUCTS								
Spiral Vibration Damper	5050102	5050103	5050103	5050104	5050104	5050105	5050105	5050106
VORTX Conductor damper	N/A	N/A	N/A	VSD-1012	VSD-1012	VSD-2016	VSD-2016	VSD-2020
Air Flow Spoiler	N/A	5058100	5058100	5058101	5058101	5058102	5058102	5058103

Other Distribution Line Products for Popular Aluminum Alloy Conductors (see Catalog Pages for Conductors Not Listed)						
kcmil	**336.4 19str**	**397.5 19str**	**477 19str**	**556.5 19str**	**636 37str**	**795 37str**
Code Word	**Canton**	**Cairo**	**Darien**	**Elgin**	**Flint**	**Greeley**
diameter (in.)	**0.721**	**0.783**	**0.858**	**0.927**	**0.991**	**1.108**
DEAD-END PRODUCTS						
Distribution-Grip Dead-End	DG-4549	DG-4550	DG-4551	DG-4551	DG-4552	DG-4553
Slack Span Dead-End, C & F	SSDE-9131	SSDE-9131	SSDE-9132	SSDE-9133	SSDE-9133	SSDE-9134
Slack Span Dead-End, J-Neck	SSDE-9151	SSDE-9151	SSDE-9152	SSDE-9153	SSDE-9153	SSDE-9154
SPLICE PRODUCTS						
Conductor Splice	LS-0140	LS-0142	LS-0145	LS-0146	LS-0148	LS-0151
MOTION CONTROL PRODUCTS						
Spiral Vibration Damper	5050106	N/A	N/A	N/A	N/A	N/A
VORTX Conductor damper	VSD-2020	VSD-2520	VSD-3525	VSD-3525	VSD-4032	VSD-4032
Air Flow Spoiler	5058103	5058104	5058104	5058105	5058105	5058106

PREFORMED LINE PRODUCTS

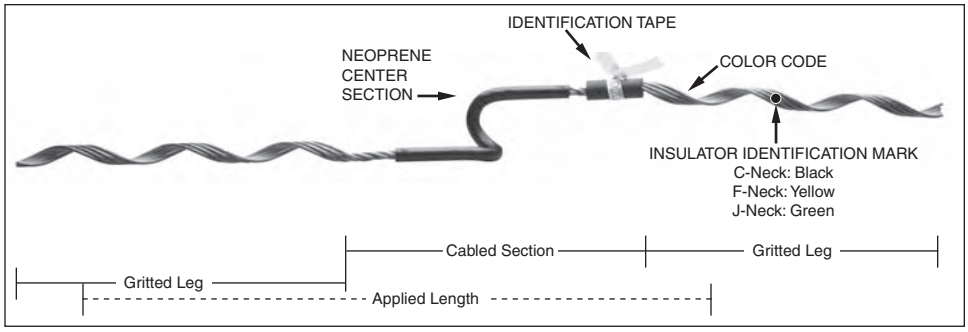
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WRAPLOCK® Tie

NOMENCLATURE



WRAPLOCK Tie Tube: Component is detached and placed in the saddle groove of the insulator.

Molded Center Section: Together with tubes, completely surrounds conductor with protective cushion.

Insulator Identification Mark: Identifies the correct insulator head-style by colors corresponding to information on Catalog Specification pages.

Color Code: Assists in identification of conductor diameter and indicates starting point for application, corresponding to tabular information appearing on Catalog pages.

Applied Length: Assists in identification of conductor size, corresponding to tabular information appearing on Catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

INTENDED USE: WRAPLOCK Ties secure conductors in the top groove of interchangeable head-style insulators.

WRAPLOCK Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties over Armor Rods.

WRAPLOCK TIE TUBE: WRAPLOCK Ties provide superior abrasion protection for the conductor under all types of motion, including low frequency sway oscillation, high frequency aeolian vibration, and galloping.

The elastomer components are recommended because they surround the bare conductor with a resilient cushion where the conductor would come into contact with the insulator and with the center section of the tie. The WRAPLOCK Tie provides superior protection by eliminating abrasion rather than sacrificing outside surfaces to abrasion.

VIBRATION DAMPERS: By using WRAPLOCK Ties, the vibration fatigue life is maximized to the extent that the original endurance limit of the conductor is not reduced by abrasion on its outside surface. However, on selected lines where experience indicates that prolonged periods of vibration might approach the fatigue life of the conductor, or cause inner wire fretting, it will be necessary to supplement with dampers.

The following are guideline definitions for vibration activity. They should be applied to a Utility's own experience on lines in a given area.

"Excessive" Vibration: Areas where abrasion damage has been known to require replacement of both hand tie wire and protective rods, or where fatigue has been found under clamps. Protective rods should be replaced when visual inspection shows approximately half or more of the rod diameter has been abraded.

"Severe" Vibration: Areas where abrasion has required replacement of hand tie wire, but damage to protective rods has not progressed to the point where replacement is necessary.

"Moderate" Vibration: Areas where replacement of hand tie wire has not been required, and damage is minor.

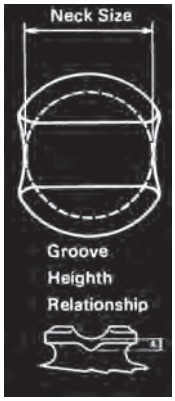
WRAPLOCK Ties provide protection on areas of **"severe"** or **"moderate"** vibration. For areas experiencing **"excessive"** vibration, supplemental use of dampers is recommended. Spiral Vibration Damper's single purpose is to prevent the unlimited accumulation of aeolian vibration.

(Continued)

WRAPLOCK® Tie

GENERAL RECOMMENDATIONS CONTD.

INTERCHANGEABLE HEAD-STYLE INSULATOR: To insure proper fit and service life, it is recommended that only insulators corresponding to C-neck, F-neck, or J-neck be used. These neck-diameter and groove-height dimensions appear on ANSI standards.



Over 100 individual insulators can be identified for neck size. The other method of identifying neck size is through markings manufacturers put on their insulators.

Consult the Factory for engineering recommendations on non-interchangeable head-style insulators. A sample of the insulator in question is desirable.

CONDUCTOR SIZE: Conductor sizes up to 1.240" O.D. can be accommodated depending on the insulator's top groove radius.

MECHANICAL STRENGTH: The WRAPLOCK tie is designed to provide longitudinal holding strength in excess of values required by the National Electric Safety Code. The maximum holding strength is usually sufficient to contain the broken conductor to a single span, however, the WRAPLOCK Tie is designed to relieve the load before severe damage is done to the pole's structural components.

The WRAPLOCK Tie is designed to permit controlled and limited movement of unbroken conductor, reducing cantilever loading at the base of the insulator or bracket, then restore itself. We refer to this unique feature as "resilience".

RADIO INTERFERENCE: The RIV characteristics of WRAPLOCK Ties are equivalent to those of a well-made hand tie when originally installed. During service life the precontoured tie assures continued fit, which would have better RIV than a loosened tie wire.

TAPPING: Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of Wraplock Ties cannot be recommended. Tapping over protective rods will remain permissible, however, there are now stirrups available that provide a superior method of making hot-line taps.

LINE ANGLES – GENERAL GUIDELINES:



On vertically-mounted insulators, WRAPLOCK Ties can normally accommodate line angles up to 10˚. Larger angles may be accommodated when the insulator is mounted at varying degrees of cant from the vertical, depending upon the actual cant of the insulator. Combining Side Ties with WRAPLOCK Ties on a single structure can also affect the acceptable line angles for that structure.

A technical report is available which describes these various permissible line angles of WRAPLOCK Ties as a function of the insulator cant.

In all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP for further guidance on line angle issues.

DOUBLE SUPPORTS: At double crossarms PREFORMED™ Double-Support Tie can be used to cross major highways and railroads, or turn angles where it is practical to hold the conductor in the top groove during installation.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size WRAPLOCK Tie before application.

5. WRAPLOCK Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

WRAPLOCK® Tie

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy
All-Aluminum, AWAC®
Compacted All-Aluminum

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin

2-1/4" Neck Diameter



Catalog Number	Diameter Range (inches) Min.	Max.	Nominal Conductor Size	Units Per Carton	Wt./lbs.	Applied Length (inches)	Insulator Identification Mark	Color Code
9/16" R Groove (See Note 3)								
WTC-0100	.248	.259	#4, 6/1-7/1 #4, 7W Alum. Alloy	100	21	19	Black	Orange
WTC-0101	.260	.269	#4, AWAC, 5/2 #3, 7W, All-Alum. #2, 7W, Comp.	100	21	19	Black	Green
WTC-0102	.270	.280	#3, 7W, Alum. Alloy #3, AWAC, 6/1	100	21	19	Black	Yellow
WTC-0103	.281	.291	#4, AWAC, 4/3 #3, 6/1 #2, 6/1, Comp.	100	24	20-1/2	Black	White
WTC-0104	.292	.303	#3, AWAC, 5/2 #2, 7W, All-Alum. #2, 7/1, Comp.	100	24	20-1/2	Black	Purple
WTC-0105	.304	.314	#4, AWAC, 3/4 #2, AWAC, 6/1	100	24	21-1/2	Black	Brown
WTC-0106	.315	.327	#2, 6/1-7/1 #2, 7W, Alum. Alloy	100	24	21-1/2	Black	Red
WTC-0107	.328	.340	#2, AWAC, 5/2 #1, 7W, All-Alum. 1/0, 7W, Comp.	100	25	22-1/2	Black	Blue
WTC-0108	.341	.353	#3, AWAC, 3/4 #1, 7W, Alum. Alloy	100	25	22-1/2	Black	Orange
WTC-0109	.354	.367	#2, AWAC, 4/3 #1, 6/1, 1/0, 6/1, Comp.	100	26	23-1/2	Black	Green
WTC-0110	.368	.381	1/0, 7W, All-Alum. 2/0, 7W, Comp.	100	26	20	Black	Black
WTC-0111	.382	.394	#2, AWAC, 3/4 1/0, AWAC, 6/1	100	27	21	Black	White

Right-hand lay standard

(Continued on next page)

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

WRAPLOCK® Tie

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy
All-Aluminum, AWAC®
Compacted All-Aluminum

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin

2-1/4" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	APPLIED LENGTH (INCHES)	INSULATOR IDENTIFICATION MARK	COLOR CODE
WTC-0112	.395	.411	1/0, 6/1 1/0, 7W, Alum. Alloy	100	27	21	Black	Yellow
WTC-0113	.412	.437	2/0, 7W-19W, All-Alum. 3/0, 7W-19W, Comp.	100	27	22	Black	Brown
WTC-0114	.438	.463	2/0, 6/1-7/1 2/0, 7W, Alum. Alloy	100	28	23	Black	Blue
WTC-0115	.464	.492	3/0, 7W-19W, All-Alum. 4/0, 7W-19W, Comp.	50	18	24-1/2	Black	Green
WTC-0116	.493	.522	3/0, 6/1 3/0, 7W, Alum. Alloy 4/0, 7W, All-Alum.	50	18	24-1/2	Black	Orange
WTC-0117	.523	.554	3/0, AWAC, 5/2 4/0, 19W, All-Alum. 266.8,7W-19W,Comp.	50	18	26-1/2	Black	Black
WTC-0118	.555	.594	4/0, 6/1 4/0, 7W, Alum. Alloy 266.8, 7W-19W, All-Alum.	50	19	27-1/2	Black	Red
WTC-0119	.595	.630	266.8, 18/1 300, 18W-37W, All-Alum.	50	21	28-1/2	Black	Purple
5/8", R. Groove (See Note 3)								
WTC-0120	.631	.664	266.8, 26/7 266.8, 19W, Alum. Alloy	50	21	28-1/2	Black	Yellow
WTC-0121	.665	.705	336.4, 18/1-36/1 336.4, 19W, All-Alum. 350, 19W-37W, All-Alum.	50	21	29-1/2	Black	Brown
WTC-0122	.706	.747	336.4, 26/7-30/7 397.5, 19W, All-Alum.	50	22	30-1/2	Black	Green

Right-hand lay standard

(Continued on next page)

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

WRAPLOCK® Tie

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSULATOR IDENTIFICATION MARK	COLOR CODE
3/4" R. Groove (See Note 3)								
WTC-0123	.748	.795	397.5, 24/7, 26/7 397.5, 19W, Alum. Alloy 477, 19W, 37W, All-Alum.	50	20	33	Black	Orange
WTC-0124	.796	.846	477, 18/1, 36/1 500, 19W, All-Alum.	50	21	37	Black	Purple
WTC-0125	.847	.900	556.5, 18/1, 36/1 556.5, 19W, 37W All-Alum.	50	21	39	Black	Blue
WTC-0126	.901	.958	636, 18/1, 36/1 636, 37W All-Alum. 556.5M, 19W Alum. Alloy	50	22	41	Black	Green
WTC-0127	.959	1.018	666.6, 24/7, 54/7 750, 37W All-Alum. 636, 37 Alum. Alloy	50	23	43	Black	White
13/16" R. Groove (See Note 3)								
WTC-0128	1.019	1.083	795, 36/1, 45/7 795, 37W Alum. Alloy	50	24	45	Black	Brown
7/8" or 1" R. Groove (See Note 3)								
WTC-0129	1.084	1.151	954, 36/1 954, 37W All-Alum. 795, 37W Alum. Alloy	50	25	47	Black	Orange
WTC-0130	1.152	1.223	954, 45/7, 54/7 1033.5, 37W All-Alum. 954, 37W Alum.Alloy	50	27	49	Black	Purple
WTC-0131	1.224	1.240		50	29	59	Black	Black

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

WRAPLOCK® Tie

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy
All-Aluminum, AWAC®
Compacted All-Aluminum

F-Neck Interchangeable Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-7/8" Neck Diameter



Catalog Number	Diameter Range (inches) Min.	Max.	Nominal Conductor Size	Units Per Carton	Wt./lbs.	Applied Length (inches)	Insulator Identification Mark	Color Code
9/16" R Groove (See Note 3)								
WTF-0200	.248	.259	#4, 6/1-7/1 #4, 7W, Alum. Alloy	100	24	20-3/4	Yellow	Orange
WTF-0201	.260	.269	#4, AWAC, 5/2 #3, 7W, All-Alum. #2, 7W, Comp.	100	24	20-3/4	Yellow	Green
WTF-0202	.270	.280	#3, 7W, Alum. Alloy #3, AWAC, 6/1	100	24	20-3/4	Yellow	Yellow
WTF-0203	.281	.291	#4, AWAC, 4/3 #3, 6/1 #2, 6/1, Comp.	100	26	21-3/4	Yellow	White
WTF-0204	.292	.303	#3, AWAC, 5/2 #3, 7W, All-Alum. #2, 7/1, Comp.	100	26	21-3/4	Yellow	Purple
WTF-0205	.304	.314	#4, AWAC, 3/4 #2, AWAC, 6/1	100	27	22-3/4	Yellow	Brown
WTF-0206	.315	.327	#2, 6/1-7/1 #2, 7W, Alum. Alloy	100	27	22-3/4	Yellow	Red
WTF-0207	.328	.340	#2, AWAC, 5/2 #1, 7W, All-Alum. 1/0, 7W, Comp.	100	27	23-3/4	Yellow	Blue
WTF-0208	.341	.353	#3, AWAC, 3/4 #1, 7W, Alum. Alloy	100	27	23-3/4	Yellow	Orange
WTF-0209	.354	.367	#2, AWAC, 4/3 #1, 6/1 1/0, 6/1, Comp.	100	28	24-3/4	Yellow	Green
WTF-0210	.368	.381	1/0, 7W, All-Alum. 2/0, 7W, Comp.	100	29	21-1/2	Yellow	Black
WTF-0211	.382	.394	#2, AWAC, 3/4 1/0, AWAC, 6/1	100	29	22-1/2	Yellow	White

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:
(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

WRAPLOCK® Tie

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	APPLIED LENGTH (INCHES)	INSULATOR IDENTIFICATION MARK	COLOR CODE
	MIN.	MAX.		PER CARTON				
WTF-0212	.395	.411	1/0, 6/1 1/0, 7W, Alum. Alloy	100	29	22-1/2	Yellow	Yellow
WTF-0213	.412	.437	2/0, 7W-19W, All-Alum. 3/0, 7W-19W, Comp.	100	30	23-1/2	Yellow	Brown
WTF-0214	.438	.463	2/0, 6/1-7/1 2/0, 7W, Alum. Alloy	100	31	24-1/2	Yellow	Blue
WTF-0215	.464	.492	3/0, 7W-19W, All-Alum. 4/0, 7W-19W, Comp.	50	20	25-1/2	Yellow	Green
WTF-0216	.493	.522	3/0, 6/1 3/0, 7W, Alum. Alloy 4/0, 7W, All-Alum.	50	20	25-1/2	Yellow	Orange
WTF-0217	.523	.554	3/0, AWAC, 5/2 4/0, 18/1 4/0, 19W, All-Alum. 266.8, 7W-19W, Comp.	50	20	25-1/2	Yellow	Black
WTF-0218	.555	.594	4/0, 6/1 4/0, 7W, Alum. Alloy 266.8, 7W-19W, All-Alum.	50	20	26-1/2	Yellow	Red
WTF-0219	.595	.630	266.8, 18/1 300,19W-37W,All-Alum.	50	22	28	Yellow	Purple
5/8", R. Groove (See Note 3)								
WTF-0220	.631	.664	266.8, 26/7 266.8, 19W, Alum. Alloy	50	22	29	Yellow	Yellow
WTF-0221	.665	.705	336.4, 18/1-36/1 336.4, 19W, All-Alum. 350,19W-37W,All-Alum.	50	22	29	Yellow	Brown
WTF-0222	.706	.747	336.4, 26/7-30/7 397.5, 19W, All-Alum.	50	23	30	Yellow	Green
3/4" R. Groove (See Note 3)								
WTF-0223	.748	.795	397.5, 24/7-26/7 397.5, 19W, Alum. Alloy 477,19W-37W,All-Alum.	50	24	32-1/2	Yellow	Orange

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.

(2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.

(3) AWAC is a registered trademark of the Copperweld Co.

WRAPLOCK® Tie

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy
All-Aluminum, AWAC®
Compacted All-Aluminum

F-Neck Interchangeable
Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-7/8"
Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSULATOR IDENTIFICATION MARK	COLOR CODE
WTF-0224	.796	.846	477, 18/1, 36/1 500, 19W, All-Alum.	50	20	37	Yellow	Purple
WTF-0225	.847	.900	556.5, 18/1, 36/1 556.5, 19W, 37W All-Alum	50	21	39	Yellow	Blue
WTF-0226	.901	.958	636, 18/1, 36/1 636, 37W All-Alum. 556.5, 19W Alum. Alloy	50	22	41	Yellow	Green
WTF-0227	.959	1.018	666.6, 24/7, 54/7 750, 37W, All-Alum. 636, 37W, Alum. Alloy	50	22	43	Yellow	White
13/16" R. Groove (See Note 3)								
WTF-0228	1.019	1.083	795, 36/1, 45/7 795, 37W, All-Alum.	50	23	45	Yellow	Brown
7/8" R. or 1" R. Groove (See Note 3)								
WTF-0229	1.084	1.151	954, 36/1 954, 37W, All-Alum. 795, 37W, Alum. Alloy	50	24	47	Yellow	Orange
WTF-0230	1.152	1.223	954, 45/7, 54/7 1033.5,37W,All-Alum. 954, 37W, Alum. Alloy	50	25	49	Yellow	Purple
WTF-0231	1.224	1.240		50	29	59	Yellow	Black

Right-hand lay standard

EXPLANATORY NOTES:
(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

WRAPLOCK® Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy All-Aluminum, AWAC®
Compacted All-Aluminum

J-Neck Interchangeable Headstyle Insulators

ANSI 55-6
Single Skirt Pin
ANSI 55-7
Single Skirt Pin
ANSI 56-1
Double Skirt Pin

3-1/2" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	DIAMETER RANGE (INCHES) MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSULATOR IDENTIFICATION MARK	COLOR CODE
9/16" R Groove (See Note 3)								
WTJ-0400	.248	.259	#4, 6/1-7/1 #4, 7W, Alum. Alloy	100	29	21	Green	Orange
WTJ-0401	.260	.269	#4, AWAC, 5/2 #3, 7W, All-Alum. #2, 7W, Comp.	100	29	21	Green	Green
WTJ-0402	.270	.280	#3, 7W, Alum. Alloy #3, AWAC, 6/1	100	29	21	Green	Yellow
WTJ-0403	.281	.291	#4, AWAC, 4/3 #3, 6/1 #2, 6/1Comp.	100	32	21	Green	White
WTJ-0404	.292	.303	#3, AWAC, 5/2 #2, 7W, All-Alum. #2, 7/1, Comp.	100	32	22	Green	Purple
WTJ-0405	.304	.314	#4, AWAC, 3/4 #2, AWAC, 6/1	100	33	22	Green	Brown
WTJ-0406	.315	.327	#2, 6/1-7/1 #2, 7W, Alum. Alloy	100	33	23	Green	Red
WTJ-0407	.328	.340	#2, AWAC, 5/2 #1, 7W, All-Alum. 1/0, 7W, Comp.	100	33	23	Green	Blue
WTJ-0408	.341	.353	#3, AWAC, 3/4 #1, 7W, Alum. Alloy	100	33	24	Green	Orange
WTJ-0409	.354	.367	#2, AWAC, 4/3 #1, 6/1 1/0, 6/1, Comp.	100	33	24	Green	Green
WTJ-0410	.368	.381	1/0, 7W, All-Alum. 2/0, 7W, Comp.	100	33	25	Green	Black
WTJ-0411	.382	.394	#2, AWAC, 3/4 1/0, AWAC, 6/1	100	34	23	Green	White

Right-hand lay standard

(Continued on next page)

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
(4) AWAC is a registered trademark of the Copperweld Co.

WRAPLOCK® Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy
All-Aluminum, AWAC®
Compacted All-Aluminum

J-Neck Interchangeable
Headstyle Insulators

ANSI 55-6
Single Skirt Pin
ANSI 55-7
Single Skirt Pin
ANSI 56-1
Double Skirt Pin

3-1/2" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSULATOR IDENTIFICATION MARK	COLOR CODE
WTJ-0412	.395	.411	1/0, 6/1 1/0, 7W, Alum. Alloy	100	34	24	Green	Yellow
WTJ-0413	.412	.437	2/0, 7W-19W, All-Alum. 3/0, 7W-19W, Comp.	100	35	25	Green	Brown
WTJ-0414	.438	.463	2/0, 6/1-7/1 2/0, 7W, Alum. Alloy	100	35	26	Green	Blue
WTJ-0415	.464	.492	3/0, 7W-19W, All-Alum. 4/0, 7W-19W, Comp.	50	21	28	Green	Green
WTJ-0416	.493	.522	3/0, 6/1 3/0, 7W, Alum. Alloy 4/0, 7W, All-Alum.	50	21	28	Green	Orange
WTJ-0417	.523	.554	3/0, AWAC, 5/2 4/0, 18/1 4/0, 19W, All-Alum. 266.8, 7W-19W,Comp.	50	21	28	Green	Black
WTJ-0418	.555	.594	4/0, 6/1 4/0, 7W, Alum. Alloy 266.8, 7W-19W, All-Alum.	50	22	29	Green	Red
WTJ-0419	.595	.630	266.8, 18/1 300, 19W-37W, All-Alum.	50	24	30	Green	Purple
5/8" R Groove (See Note 3)								
WTJ-0420	.631	.664	266.8, 26/7 266.8, 19W, Alum. Alloy	50	24	31	Green	Yellow
WTJ-0421	.665"	.705"	336.4, 18/1-36/1 336.4, 19W, All-Alum. 350, 19W-37W, All-Alum.	50	24	31	Green	Brown
WTJ-0422	.706"	.747"	336.4, 26/7-30/7 397.5, 19W, All-Alum.	50	25	32	Green	Green
3/4" R Groove (See Note 3)								
WTJ-0423	.748"	.795"	397.5,24/7-26/7 397.5, 19W, Alum. Alloy 477M, 19W-37W, All-Alum.	50	26	34	Green	Orange

Right-hand lay standard

(Continued on next page)

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
(4) AWAC is a registered trademark of the Copperweld Co.

WRAPLOCK® Tie

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	APPLIED LENGTH (INCHES)	INSULATOR IDENTIFICATION MARK	COLOR CODE
	MIN.	MAX.		PER CARTON				
WTJ-0424	.796	.846	477, 18/1, 36/1 500, 19W, All-Alum.	50	32	39-1/2	Green	Purple
WTJ-0425	.847	.900	556.5, 18/6, 36/1 556.5, 19W, 37W, All-Alum.	50	33	41	Green	Blue
WTJ-0426	.901	.958	636, 18/1, 36/1 636,37W, All-Alum. 556.5, 19W, Alum. Alloy	50	33	43	Green	Green
WTJ-0427	.959	1.018	666.6, 24/7, 54/7 750, 37W, All-Alum. 636, 37W, Alum. Alloy	50	35	45	Green	White
13/16" R Groove (See Note 3)								
WTJ-0428	1.019	1.083	795, 36/1, 45/7 795, 37W, All-Alum.	25	18	47	Green	Brown
7/8" or 1" Groove (See Note 3)								
WTJ-0429	1.084	1.151	954, 36/1 954, 37W, All-Alum. 795, 37W, Alum. Alloy	25	19	49	Green	Orange
WTJ-0430	1.152	1.223	954, 45/7, 54/7 1033.5, 37W,All-Alum.	25	19	51	Green	Purple
WTJ-0431	1.224	1.240		25	20	59-1/2	Green	Black

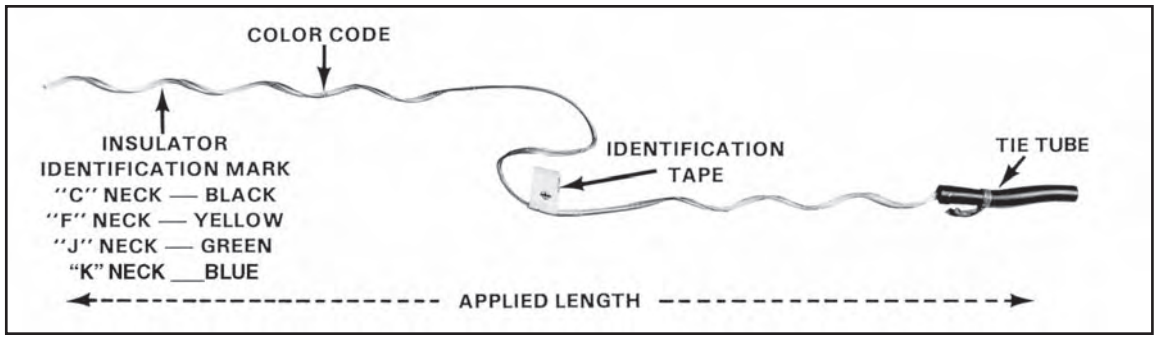
Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding conductors ranges, the insulator's top groove radius should be at least as large as shown above.
(4) AWAC is a registered trademark of the Copperweld Co.

Distribution Tie

NOMENCLATURE



Tie Tube: Each tie is furnished with Tie Tube Component. The Tie Tube is detached and applied over the conductor.

Identification Tape: Shows catalog number, nominal sizes.

Color Code: Identifies conductor diameter ranges.

Insulator Identification Mark: Identifies the correct insulator headstyle by colors corresponding to information on catalog pages.

Applied Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog pages.



GENERAL RECOMMENDATIONS

INTENDED USE: Distribution Ties manufactured of aluminum covered steel secure conductors in the top groove of interchangeable headstyle insulators.

Distribution Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties over Armor Rods. Distribution Ties provide superior abrasion protection for the conductor under all types of motion, including low frequency sway oscillation, high frequency aeolian vibration, and galloping. The tube component surrounds the bare conductor with a resilient cushion where the conductor would come into contact with the insulator and with the center section of the tie. In the case of Distribution Ties applied over plastic jacketed conductor, the tube can be disposed of because contact with the bare conductor is prevented by the jacketing itself.

PREFORMED™ Plastic Line Ties are also offered as an alternate to metal ties applied over plastic jacketed conductor.

INTERCHANGEABLE HEADSTYLE INSULATOR: To insure proper fit and service life, it is recommended that only insulators corresponding to C-neck, F-neck, J-neck, or K-neck be used. These neck-diameter and groove-height dimensions appear on ANSI standards.

Over 100 individual insulators can be identified for neck size. The other method of identifying neck size is through markings manufacturers put on their insulators.



Consult the Factory for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is desirable.

CONDUCTOR SIZE: Distribution Ties can accommodate conductor diameters from .190" to 1.585" for F neck insulators and .190" to 1.240" for other size insulators as long as the insulator top groove is large enough. Consult the tables in this section for minimum groove radii required for a specific tie and conductor diameter range.

RADIO INTERFERENCE: The RIV characteristics of Distribution Ties are equivalent to those of a well-made hand tie when originally installed. During service life the precontoured Tie assures continued fit, which would have better RIV than a loosened tie wire.

DOUBLE SUPPORTS: At double crossarms PREFORMED Double-Support Tie can be used to cross major highways and railroads, or turn angles where it is practical to hold the conductor in the top groove during installation.

(Continued)

Distribution Tie

GENERAL RECOMMENDATIONS CONTD.

LINE ANGLES -
GENERAL GUIDELINES: On vertically-mounted insulators, Distribution Ties can normally accommodate line angles up to **10˚**. Larger angles may be accommodated when the insulator is mounted at varying degrees of cant from the vertical, depending upon the actual cant of the insulator. Combining Side Ties with Distribution Ties on a single structure can also affect the acceptable line angles for that structure.



A technical report is available which describes these various permissible line angles of Distribution Ties as a function of the insulator cant.

In all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP for further guidance on line angle issues.

MECHANICAL STRENGTH: The Distribution Tie is designed to provide longitudinal holding strength in excess of values required by the National Electric Safety Code. The holding strengths are usually sufficient to contain broken conductors to a single span and minimize damage to the conductor and other structure components.

The Distribution Tie is designed to permit controlled and limited movement of unbroken conductor and, under certain conditions, return the conductor to its original position. The ability of the Tie to give and return under differential loading conditions is called "resiliency" and is designed into each Distribution Tie.

VIBRATION DAMPERS: By using Distribution Ties, abrasion can not reduce the fatigue life of the conductor. However, for lines where experience indicates that prolonged periods of vibration might lead to fatigue of the conductor, cause inner wire fretting, or score the insulator's glaze, SVD's are recommended.

The following are guideline definitions for vibration activity. Application of these guidelines should be based on a utility's field experience.

"Excessive" Vibration: Areas where abrasion damage has been known to require replacement of both hand tie wire and protective rods, or where fatigue has been found under clamps. Protective rods should be replaced when visual inspection shows approximately one-half or more of the rod diameter has been abraded.

"Severe" Vibration: Areas where abrasion has required replacement of hand tie wire, but damage to protective rods has not progressed to the point where replacement is necessary.
"Moderate" Vibration: Areas where replacement of hand tie wire has not been required, and damage is minor. Distribution Ties, with tubes, provide protection on areas of "moderate" vibration.

TAPPING: Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of Distribution Ties cannot be recommended. Tapping over protective rods will remain permissible, however, there are now stirrups available that provide a superior method of making hot-line taps.

APPLICATION-INSPECTION: The Distribution Tie can be installed parallel to the pole when pole or conductor clearance is critical. Application Procedures are available.



SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ Distribution Tie before application.

5. PREFORMED Distribution Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Distribution Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy, All-Aluminum, AWAC® Compacted All-Aluminum

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin

2-1/4" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
UTC-1100	.190	.215	#6, 6/1 #4, 7W Comp.	100	17	24	Black	Blue
UTC-1101	.216	.244	#4, 7W All Alum. #4, 6/1, 7/1 Comp.	100	18	25	Black	Brown
UTC-1102	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	18	26	Black	Orange
UTC-1103	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	100	18	26	Black	Purple
UTC-1104	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	100	19	28	Black	Red
UTC-1105	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	20	30	Black	Yellow
UTC-1106	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	17	25	Black	Blue
UTC-1107	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	17	25	Black	Orange
UTC-1108	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	18	28	Black	Red
UTC-1109	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	18	30	Black	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

Distribution Tie

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
UTC-1110	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	19	31	Black	Brown
UTC-1111	.756	.855	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	19	32	Black	Red
5/8" R. GROOVE (See Note 3)								
UTC-1112	.856	.968	556.5, 24/7 636, 18/1 700, 37W, 61W All Alum.	50	20	34	Black	Blue
3/4" R. GROOVE (See Note 3)								
UTC-1113	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	21	37	Black	Green
UTC-1114	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W All Alum.	50	22	40	Black	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

Distribution Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy, All-Aluminum, AWAC® Compacted All-Aluminum

F-Neck Interchangeable Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Pin **2-7/8" Neck Diameter**
ANSI 57-2 Pin
ANSI 57-3 Pin



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
UTF-1200	.190	.215	#6, 6/1 #4, 7W Comp.	100	18	25	Yellow	Blue
UTF-1201	.216	.244	#4, 7W All Alum. #4, 6/1, 7/1 Comp.	100	19	26	Yellow	Brown
UTF-1202	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	19	27	Yellow	Orange
UTF-1203	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	100	20	29	Yellow	Purple
UTF-1204	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	100	20	31	Yellow	Red
UTF-1205	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	21	32	Yellow	Yellow
UTF-1206	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	18	26	Yellow	Blue
UTF-1207	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	18	27	Yellow	Orange
UTF-1208	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	19	29	Yellow	Red
UTF-1209	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	19	32	Yellow	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above..
(3) AWAC is a registered trademark of the Copperweld Co.

Distribution Tie

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
UTF-1210	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	20	32	Yellow	Brown
UTF-1211	.756	.855	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	20	33	Yellow	Red
5/8" R. GROOVE (See Note 3)								
UTF-1212	.856	.968	556.5, 19W All Alum. 636, 18/1 700, 37W, 61W All Alum.	50	21	35	Yellow	Blue
3/4" R. GROOVE (See Note 3)								
UTF-1213	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	22	38	Yellow	Green
UTF-1214	1.097	1.240	954, 36/1 1033.5, 37W, 61W All Alum. 954, 54/7	50	23	41	Yellow	Yellow
1" R. GROOVE (See Note 3)								
UTF-1215	1.241	1.402	1033.5, 54/7 1272, 45/7	50	25	43	Yellow	Orange
UTF-1216	1.403	1.585	1351.5, 54/19 1590, 45/7	50	26	45	Yellow	Black

Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.

(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above..

(3) AWAC is a registered trademark of the Copperweld Co.

Distribution Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy, All-Aluminum, AWAC® Compacted All-Aluminum

J-Neck Interchangeable Headstyle Insulators

ANSI 55-6 Pin
ANSI 55-7 Pin **3-1/2" Neck Diameter**
ANSI 56-1 Pin



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
UTJ-1300	.190	.215	#6, 6/1 #4, 7W Comp.	100	24	26	Green	Blue
UTJ-1301	.216	.244	#4, 7W All Alum. #4, 6/1, 7/1 Comp.	100	24	27	Green	Brown
UTJ-1302	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	25	28	Green	Orange
UTJ-1303	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	100	27	30	Green	Purple
UTJ-1304	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	100	29	32	Green	Red
UTJ-1305	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	31	33	Green	Yellow
UTJ-1306	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	20	27	Green	Blue
UTJ-1307	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	21	28	Green	Orange
UTJ-1308	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	22	30	Green	Red
UTJ-1309	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	22	33	Green	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

Distribution Tie

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
UTJ-1310	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	23	33	Green	Brown
UTJ-1311	.756	.855	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	27	34	Green	Red
5/8" R. GROOVE (See Note 3)								
UTJ-1312	.856	.968	556.5, 24/7 636, 18/1 700, 37W, 61W All Alum.	50	27	36	Green	Blue
3/4" R. GROOVE (See Note 3)								
UTJ-1313	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	30	39	Green	Green
UTJ-1314	1.097	1.240	954, 36/1 954, 54/7 1033.5, 37W, 61W All Alum.	50	31	42	Green	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

Distribution Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy, All-Aluminum, AWAC® Compacted All-Aluminum

K-Neck Interchangeable Headstyle Insulators

ANSI 56-2 Pin
ANSI 56-3 Pin

4" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
UTK-1602	.245	.277	#4, 6/1 #4, 7W AAC	100	27	32	Blue	Orange
UTK-1604	.316	.357	#2, 6/1, 7/1 #2, 7W AAAC #1, 6/1	100	31	36	Blue	Red
UTK-1605	.358	.405	1/0, 7W AAC 1/0, 6/1 1/0, 7W AAAC	100	31	38	Blue	Yellow
UTK-1606	.406	.459	2/0, 7W AAC 2/0, 6/1 2/0, 7W AAAC	50	21	31	Blue	Blue
UTK-1607	.460	.520	3/0, 7W AAC 3/0, 6/1 3/0, 7W AAAC	50	22	32	Blue	Orange
UTK-1608	.521	.588	4/0, 7W AAC 4/0, 6/1 4/0, 7W AAAC	50	23	34	Blue	Red
UTK-1609	.589	.665	266.8, 37W AAC 266.8, 18/1	50	25	36	Blue	Purple
UTK-1610	.666	.755	336.4, 19W AAC 336.4, 18/1 397.5, 19W AAC	50	25	37	Blue	Brown
UTK-1611	.756	.855	477, 19W, 37W AAC 477, 18/1, 24/7, 26/7	50	27	38	Blue	Red
5/8", R. GROOVE (See Note 3)								
UTK-1612	.856	.968	556.5, 24/7 636, 18/1 700, 37W, 61W AAC	50	27	40	Blue	Blue
3/4", R. GROOVE (See Note 3)								
UTK-1613	.969	1.096	795, 37W, 61W AAC 715.5, 24/7 795, 54/7	50	29	43	Blue	Green
UTK-1614	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, AAC	50	30	46	Blue	Yellow

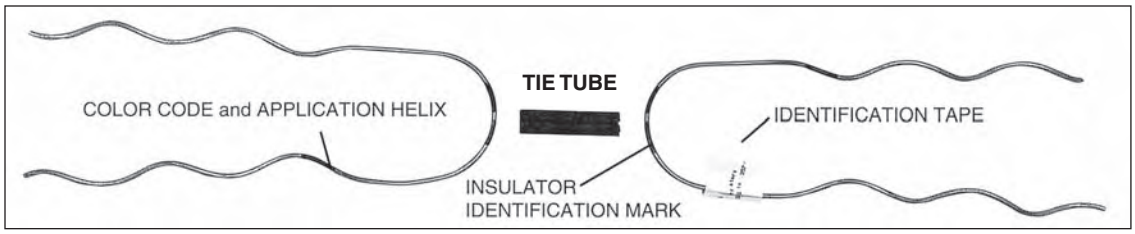
Right-hand lay standard

EXPLANATORY NOTES:

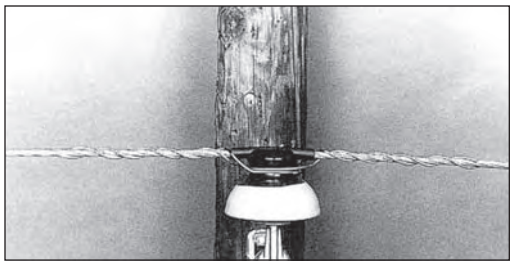
(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

EZ-WRAP® Twin Tie

NOMENCLATURE



Tie Tube: Each tie is furnished with Tie Tube Component. The Tie Tube is detached and applied over the conductor.
Insulator Identification Mark: Identifies the correct insulator(s) head style. Black/yellow are for C and F-neck insulators. Yellow is for F-neck insulators only. Yellow/green for F- and J-neck insulators. Green is for J-neck insulators only.
Color Code and Application Helix: Assists in identification of conductor diameter corresponding to tabular information on the catalog pages and indicates "top" of tie and starting point for leg application.
Identification Tape: Shows catalog number, nominal sizes.



GENERAL RECOMMENDATIONS

INTENDED USE: EZ-WRAP Twin Ties, manufactured of aluminum covered steel, secure conductors in the top groove of interchangeable headstyle insulators.

EZ-WRAP Twin Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties over Armor Rods.

The Twin Tie provides superior abrasion protection for the conductor under all types of motion, including low frequency sway oscillation, high frequency aeolian vibration, and galloping. The pad component surrounds the bare conductor with a resilient cushion where the conductor would come into contact with the insulator.

LOOP DESIGN: The loop of the EZ-WRAP Twin Tie has been designed so multiple insulators with dimensions consistent with ANSI C29 Insulator Standards can be accommodated by a single tie design for most conductors and insulators. One design will accommodate most C-neck to F-neck insulators while another will accommodate most F-neck to J-neck insulators. See note below for exceptions.

Note: Due to large conductor size and C-neck top groove space limitations, all C-neck/F-neck combination EZ-WRAP Twin Ties for conductors above .855" conductor OD can be recommended for F-neck insulators **only**. Refer to the catalog table for F-neck only ties for these large conductors.

In addition, it is recommended that **only** J-neck insulators be used with F-neck/J-neck combination EZ-WRAP Twin Ties for conductors above .855" conductor OD. Refer to catalog tables for J-neck only ties for these large conductors.

Consult PLP for recommendations when the application requires conductors larger than .855" conductor OD and C-neck insulators.

APPLICATION HELIX: Each metal component of the EZ-WRAP Twin Tie has an **Application Helix** formed on one side of the legs which aids application by identifying the "top" of each component and the first leg to install. This **Application Helix** must face "UP" during installation and should be the first leg applied to insure proper fit and service life.

INTERCHANGEABLE HEADSTYLE INSULATOR: To insure proper fit and service life, it is recommended that only insulators with dimensions consistent with ANSI C29 Insulator Standards, corresponding to C-neck, F-neck, and J-neck, be used with EZ-WRAP Twin Ties.

Consult PLP for engineering recommendations for non-interchangeable or other headstyle insulators. A sample of the insulator in question is desirable.

CONDUCTOR SIZE: EZ-WRAP Twin Ties for C and F-neck insulators can accommodate conductor diameters from .245" to 1.240" (F-neck only from .856 to 1.240") depending upon the insulator's top groove radius. EZ-WRAP Twin Ties for F and J-neck insulators can accommodate conductor diameters from .245"-1.240" (J-neck only for .856"/1.240") depending on the insulator's top groove radius.

(Continued)

EZ-WRAP® Twin Tie

GENERAL RECOMMENDATIONS CONTD.

In order for the tie to fit properly there must be enough room in the insulator's top groove. The minimum insulator top groove radius required for a particular EZ-WRAP Twin Tie and conductor diameter is shown on the catalog pages above the catalog numbers. Consult the insulator manufacturer or PLP when in doubt about proper insulator top groove radius.



LINE ANGLES–GENERAL GUIDELINES: On vertically mounted insulators, EZ-WRAP Twin Ties can normally accommodate line angles up to **10°**. Larger angles may be accommodated when the insulator is mounted at varying degrees of cant from the vertical, depending upon the actual cant of the insulator. Combining Side Ties with EZ-WRAP Twin Ties on a single structure can also affect the acceptable line angles for that structure.



A technical report is available which describes these various permissible line angles of EZ-WRAP Twin Ties as a function of the insulator cant.

In all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP for further guidance on line angle issues.

MECHANICAL STRENGTH: The EZ-WRAP Twin Tie is designed to provide longitudinal holding strength in excess of values required by the National Electric Safety Code. The holding strength is usually sufficient to contain the broken conductor to a single span.

VIBRATION DAMPERS: By using EZ-WRAP Twin Ties with the tube, the possibility of abrasion or fatigue during conductor movement is minimized. However, for lines with excessive **aeolian vibration,** the use of vibration dampers such as **Spiral Vibration Dampers** (SVD) may be required. Typically two SVDs per span on distribution construction (less than 800' spans) will reduce aeolian vibration to acceptable levels.

In addition, **conductor galloping** can produce extreme stress and damage to support points regardless of the tie device. Consequently, the use of galloping dampers such as the **Air Flow Spoiler** (AFS) is recommended where galloping has occurred or is expected.

Consult PLP for engineering recommendations for application of either the SVD or AFS.

RADIO INTERFERENCE: The RIV characteristics of EZ-WRAP Twin Ties are equivalent to those of a well-made hand tie when originally installed. During service life the precontoured tie assures continued fit, which would have better RIV than a loosened tie wire.

TAPPING: Tapping over the applied legs of the EZ-WRAP Twin Tie is not recommended.

DOUBLE SUPPORTS: At double crossarms PREFORMED™ Double-Support Tie can be used to cross major highways and railroads, or turn angles where it is practical to hold the conductor in the top groove during installation.

APPLICATION-INSPECTION: The EZ-WRAP Twin Tie is non-rotational and can be installed when pole or conductor clearance is critical. Application Procedures are available.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size EZ-WRAP Twin Tie before application.
5. EZ-WRAP Twin Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

EZ-WRAP® Twin Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy, All-Aluminum, AWAC® Compacted All-Aluminum

C-Neck & F-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin
ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-1/4" & 2-7/8" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 2)								
TTCF-102	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	50	15	21	Black/ Yellow	Orange
TTCF-103	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	50	16	22	Black/ Yellow	Purple
TTCF-104	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	50	16	23	Black/ Yellow	Red
TTCF-105	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	17	25	Black/ Yellow	Yellow
TTCF-106	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	18	26	Black/ Yellow	Blue
TTCF-107	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	18	27	Black/ Yellow	Orange
TTCF-108	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	19	28	Black/ Yellow	Red
TTCF-109	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	19	29	Black/ Yellow	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

EZ-WRAP® Twin Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy, All-Aluminum, AWAC® Compacted All-Aluminum

C-Neck & F-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin
ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-1/4" & 2-7/8" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
	MIN.	MAX.		PER CARTON				
9/16" R. GROOVE (See Note 2)								
TTCF-110	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	20	31	Black/ Yellow	Brown
TTCF-111	.756	.855	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	26	32	Black/ Yellow	Red
5/8" R. GROOVE (See Note 2)								
TTF-112*	.856	.968	556.5, 24/7 636, 18/1 700, 37W, 61W All Alum.	50	28	35	Yellow	Blue
3/4" R. GROOVE (See Note 2)								
TTF-113*	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	37	37	Yellow	Green
TTF-114*	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W All Alum.	50	39	39	Yellow	Yellow

*** These sizes are recommended for use with F-neck insulators only due to C-neck insulator top groove space limitations.**

Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

EZ-WRAP® Twin Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy, All-Aluminum, AWAC® Compacted All-Aluminum

F-Neck & J-Neck Interchangeable Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin — **2-7/8" & 3-1/2" Neck Diameter**
ANSI 57-1 Pin
ANSI 57-2 Pin
ANSI 57-3 Pin
ANSI 55-6 Single Skirt Pin
ANSI 55-7 Single Skirt Pin
ANSI 56-1 Double Skirt Pin



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 2)								
TTFJ-202	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	50	16	23	Yellow/ Green	Orange
TTFJ-203	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	50	17	24	Yellow/ Green	Purple
TTFJ-204	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	50	17	25	Yellow/ Green	Red
TTFJ-205	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	18	27	Yellow/ Green	Yellow
TTFJ-206	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	19	28	Yellow/ Green	Blue
TTFJ-207	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	19	29	Yellow/ Green	Orange
TTFJ-208	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	20	30	Yellow/ Green	Red
TTFJ-209	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	20	31	Yellow/ Green	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

EZ-WRAP® Twin Tie

For use on:
ACSR, Compacted ACSR, Aluminum Alloy, All-Aluminum, AWAC® Compacted All-Aluminum

F-Neck & J-Neck Interchangeable Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin **2-7/8" & 3-1/2"**
ANSI 57-1 Pin **Neck Diameter**
ANSI 57-2 Pin
ANSI 57-3 Pin
ANSI 55-6 Single Skirt Pin
ANSI 55-7 Single Skirt Pin
ANSI 56-1 Double Skirt Pin



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 2)								
TTFJ-210	.666	.755	336.4, 19W All Alum. 336.4, 18/1 397.5, 19W All Alum.	50	21	33	Yellow/ Green	Brown
TTFJ-211	.756	.855	477, 19W, 37W All Alum. 477, 18/1, 24/7, 26/7	50	28	34	Yellow/ Green	Red
5/8" R. GROOVE (See Note 2)								
TTJ-212*	.856	.968	556.5, 19W All Alum. 636, 18/1 700, 37W, 61W All Alum.	50	30	37	Green	Blue
3/4" R. GROOVE (See Note 2)								
TTJ-213*	.969	1.096	795, 37W All Alum. 795, 61W All Alum. 715.5, 24/7 795, 54/7	50	39	39	Green	Green
TTJ-214*	1.097	1.240	954, 36/1 1033.5, 37W, 61W All Alum. 954, 54/7	50	41	41	Green	Yellow

*** These sizes are recommended for use with J-neck insulators only. For F-neck insulator applications use F-neck catalog numbers on page 4.**

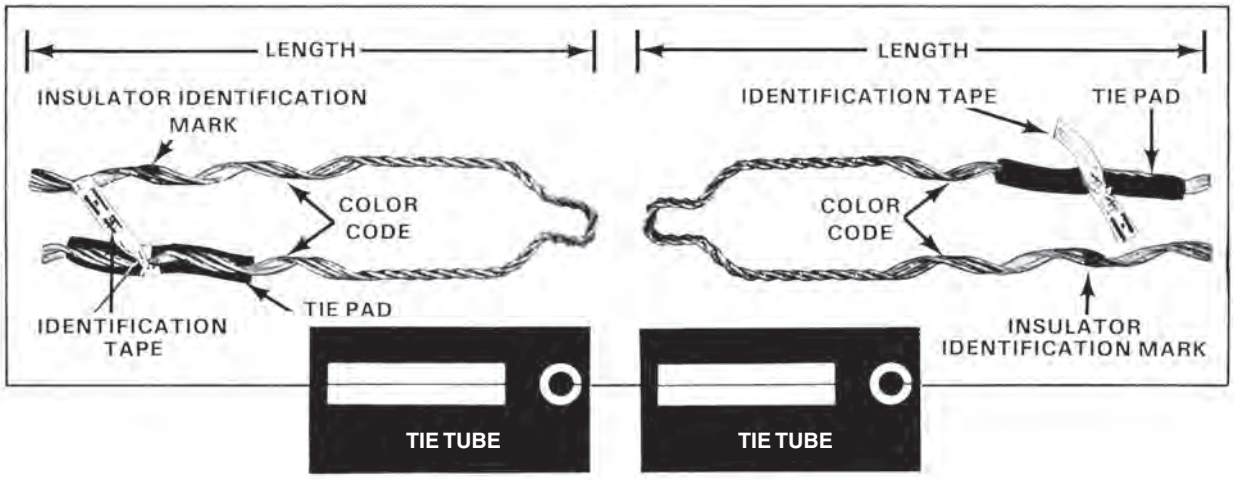
Right-hand lay standard

EXPLANATORY NOTES:

(1) "Nominal Conductor Size" indicates one or more of various conductors within each range.
(2) For the succeeding ranges the insulator's top groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

Double Support Tie

NOMENCLATURE



Tie Assembly: A Double Support Tie assembly consists of two metal tie components plus two tie tubes.

Tie Tube: Each Double Support Tie assembly is supplied with two elastomeric tie tubes, designed for abrasion protection.

Color Code: Identifies proper conductor size, corresponding to tabular information appearing in this section, and designates leg cross-over location.

Insulator Identification Mark: Identifies the correct insulator headstyle by color corresponding to information on Catalog Specification pages.

Identification Tape: Shows catalog number, proper insulator type, and nominal conductor sizes.

Applied Length: Describes length of each tie component after installation, plus assists in product identification.

GENERAL RECOMMENDATIONS

INTENDED USE: The Double Support Tie is intended for use on aluminum based conductors with diameters from .245" to 1.240". Each Double Support Tie covers a range of conductor diameters as outlined in the catalog tables of this section.

INTERCHANGEABLE Headstyle INSULATORS: Double Support Ties are designed for installation on double insulator construction in the top groove of interchangeable insulators. To insure proper fit and service life, it is recommended only insulators with uniform dimensions as described by the ANSI insulator standards be used. Consult PLP for application on nonstandard insulators.

TIE DESIGN: The loop of the Double Support Tie has been engineered so "C" and "F" insulators can be accommodated by a single tie design. A separate design is required for "J" neck insulators. Each Double Support Tie is supplied with elastomeric tie tubes designed to minimize abrasion to bare conductor and insulators. For applications on jacketed conductors, the tube may be discarded.

MECHANICAL STRENGTH: The Double Support Tie is designed to provide superior mechanical strength and resiliency during conductor motion and cyclic loading conditions. Longitudinal holding strengths consistently exceed the requirements of the National Electric Safety Code.

RADIO INTERFERENCE: The RIV/TVI characteristics of Double Support Ties are equivalent to those of a well made hand tie, as originally installed. The precontoured loop and formed legs of the Double Support Tie assures continued fit, which will provide better RIV/TVI performance than a loosened hand-tie wire.

VIBRATION DAMPERS: The Double Support Tie is designed to outperform other tie devices during conductor motion activity, such as aeolian vibration and galloping. However, on some lines the use of dampers may be required to prevent damage. Utilities that have experienced conductor motion or expect to, should consider adding dampers. Consult PLP® for general guidelines and advice concerning conductor motion and dampers. Also, consult the Motion Control Section in this catalog.

(Continued)

Double Support Tie

GENERAL RECOMMENDATIONS CONTD.

INSULATOR MOUNTING: The Double Support Tie is designed to be used when the conductor is located in the top groove of the insulators, regardless of insulator orientation, as long as the conductor will rest in the top groove by itself. If the conductor will not remain in the top groove by itself, it will be necessary to relocate it to the side groove, and will require an appropriate Side or Double Side Tie.

LINE ANGLES - GENERAL GUIDELINES: On vertically-mounted insulators at double crossarms or brackets, the Double Support Tie can normally accommodate line angles up to a total of **20**˚, with no more than a **10**˚ angle at each insulator. Larger angles may be accommodated when the insulators are mounted at varying degrees of cant from the vertical, depending upon the actual cant of the insulator.

A technical report is available which describes these permissible line angles for Double Support Ties as a function of the insulator's cant.

In all cases, the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues

TAPPING: Taps should not be made directly over the legs or loop of the Double Support Tie.

CONDUCTOR COMPATIBILITY: Double Support Ties should be used only on the size, type, and lay direction of conductor for which they are designed. When using conductors not mentioned in the T&D Catalog, consult PLP.

During installation and at all times, care should be taken to avoid gouging or damaging the wires of the Double Support Tie or conductor.

Double Support Ties should not be used as tools, i.e., come-alongs, pulling-grips, etc.

Consult the Double Support Tie Application Procedure for additional installation information.

When in doubt about usage of Double Support Ties, consult your PLP Sales Representative or Preformed Line Products.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size Double Support Tie before application.
5. Double Support Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

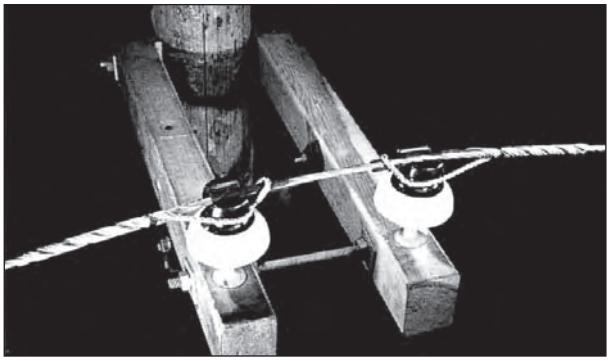
Double Support Tie

For use on:
ACSR, All-Aluminum,
AWAC®, Aluminum Alloy
Compacted All-Aluminum
Compacted ACSR

C-Neck & F-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin
ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-1/4" & 2-7/8" Neck Diameters



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT.LBS.	APPROX. APPLIED LENGTH-EACH TIE (INCHES)	INSUL. IDENT. MARK	COLOR CODE
C & F NECK	MIN.	MAX.		PER CARTON				
9/16" R. GROOVE (See Note 4)								
DST-0150	.245	.277	#4, 6/1-7/1 #4, 7W Alum. Alloy	50	11	13	Black/ Yellow	Orange
DST-0151	.278	.315	#3, 7W Alum.Alloy #2, 7W All Allum.	50	11	13	Black/ Yellow	Purple
DST-0152	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	50	15	14	Black/ Yellow	Red
DST-0153	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	16	14	Black/ Yellow	Yellow
DST-0154	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	16	15	Black/ Yellow	Blue
DST-0155	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	23	16	Black/ Yellow	Orange
DST-0156	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	23	17	Black/ Yellow	Red
DST-0157	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	50	26	17	Black/ Yellow	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:
(1) Diameter Range indicates the size of conductors that utilize the same tie.
(2) "Nominal Conductor Size" indicates one of various conductors within each range.
(3) The loop of the Double Support Ties on this page can accommodate either C or F neck insulators.
(4) For the succeeding ranges, the insulator's top groove radius should be at least as large as shown above.
(5) AWAC is a registered trademark of the Copperweld Co.

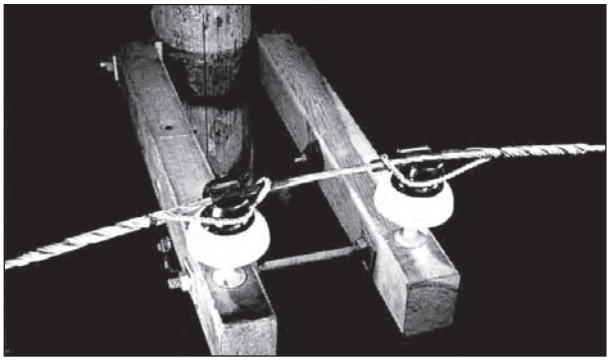
Double Support Tie

For use on:
ACSR, All-Aluminum,
AWAC®, Aluminum Alloy
Compacted All-Aluminum
Compacted ACSR

C-Neck & F-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin
ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-1/4" & 2-7/8" Neck Diameters



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	APPROX. APPLIED LENGTH-EACH TIE (INCHES)	INSUL. IDENT. MARK	COLOR CODE
C & F NECK	MIN.	MAX.		PER CARTON				
9/16" R. GROOVE (See Note 4)								
DST-0158	.666	.755	336.4, 18/1, 26/7 397.5, 19W, All Alum. 400, 19W, 37W All Alum.	50	28	18	Black/ Yellow	Brown
DST-0159	.756	.855	477, 19W, 37W All Alum. 477, 18/1, 24/7	50	30	20	Black/ Yellow	Red
5/8" R. GROOVE (See Note 4)								
DST-0160	.856	.968	556.5, 19W All Alum. 636, 18/1 477, 26/7, 30/7	50	30	21	Black/ Yellow	Blue
3/4" R. GROOVE (See Note 4)								
DST-0161	.969	1.096	795, 37W, 61W All Alum. 715.5, 24/7 795, 54/7	50	30	22	Black/ Yellow	Green
DST-0162	1.097	1.240	954, 54/7, 36/1 1033.5, 45/7 795, 26/7 954, 37W Alum. Alloy	50	30	23	Black/ Yellow	Yellow

Right-hand lay standard

EXPLANATORY NOTES:
(1) Diameter Range indicates the size of conductors that utilize the same tie.
(2) "Nominal Conductor Size" indicates one of various conductors within each range.
(3) The loop of the Double Support Ties on this page can accommodate either C or F neck insulators.
(4) For the succeeding ranges, the insulator's top groove radius should be at least as large as shown above.
(5) AWAC is a registered trademark of the Copperweld Co.

Double Support Tie

For use on:
ACSR, All-Aluminum,
AWAC®, Aluminum Alloy
Compacted All-Aluminum
Compacted ACSR

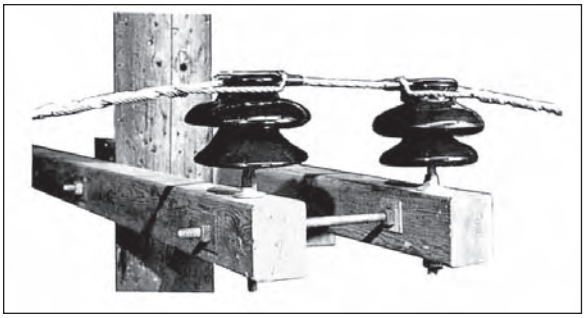
J-Neck Interchangeable Headstyle Insulators

ANSI 55-6
Single Skirt Pin

ANSI 55-7
Single Skirt Pin

ANSI 56-1
Double Skirt Pin

3-1/2"
Neck Diameters



CATALOG NUMBER J NECK	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	APPROX. APPLIED LENGTH-EACH TIE (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 4)								
DST-0350	.245	.277	#4, 6/1-7/1 #4, 7W Alum. Alloy	50	12	14	Green	Orange
DST-0351	.278	.315	#3, 7W Alum.Alloy #2, 7W All Allum.	50	12	14	Green	Purple
DST-0352	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	50	16	15	Green	Red
DST-0353	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	17	15	Green	Yellow
DST-0354	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	17	16	Green	Blue
DST-0355	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	25	16	Green	Orange
DST-0356	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	25	18	Green	Red
DST-0357	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	50	30	18	Green	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Diameter Range indicates the size of conductors that utilize the same tie.
(2) "Nominal Conductor Size" indicates one of various conductors within each range.
(3) The loop of the Double Support Ties on this page can accommodate J-neck insulators.
(4) For the succeeding ranges, the insulator's top groove radius should be at least as large as shown above.
(5) AWAC is a registered trademark of the Copperweld Co.

Double Support Tie

For use on:
ACSR, All-Aluminum,
AWAC®, Aluminum Alloy
Compacted All-Aluminum
Compacted ACSR

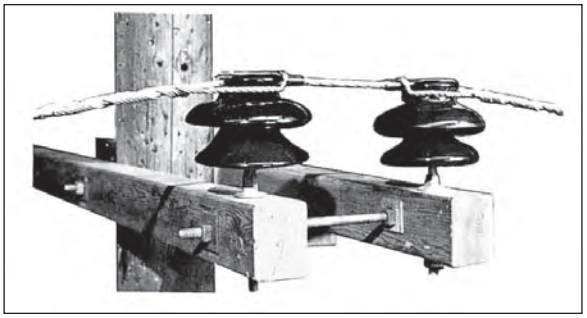
J-Neck Interchangeable Headstyle Insulators

ANSI 55-6
Single Skirt Pin

ANSI 55-7
Single Skirt Pin

ANSI 56-1
Double Skirt Pin

3-1/2"
Neck Diameter



CATALOG NUMBER J NECK	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPROX. APPLIED LENGTH-EACH TIE (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 4)								
DST-0358	.666	.755	336.4, 18/1, 26/7 397.5, 19W, All Alum. 400, 19W, 37W All Alum.	50	30	19	Green	Brown
DST-0359	.756	.855	477, 19W, 37W All Alum. 477, 18/1, 24/7	50	33	21	Green	Red
5/8" R. GROOVE (See Note 4)								
DST-0360	.856	.968	556.5, 19W All Alum. 636, 18/1 477, 26/7, 30/7	50	34	22	Green	Blue
3/4" R. GROOVE (See Note 4)								
DST-0361	.969	1.096	795, 37W, 61W All Alum. 715.5, 24/7 795, 54/7	50	37	23	Green	Green
DST-0362	1.097	1.240	954, 54/7, 36/1 1033.5, 45/7 795, 26/7 954, 37W Alum. Alloy	50	40	24	Green	Yellow

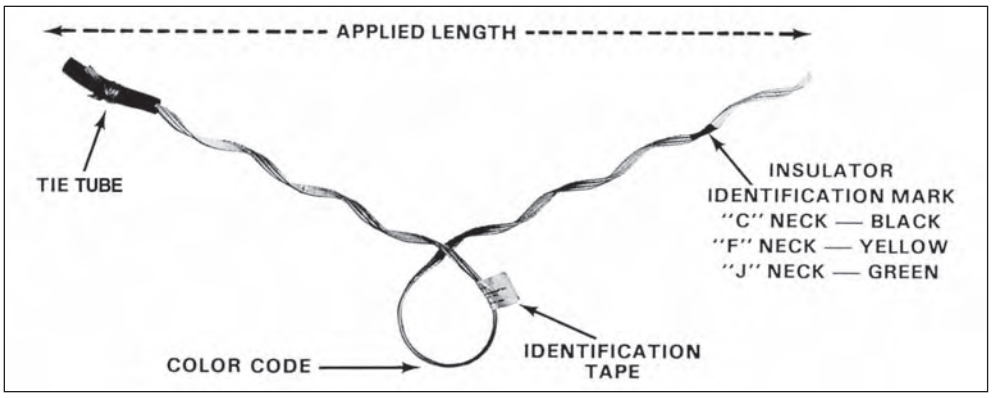
Right-hand lay standard

EXPLANATORY NOTES:

(1) Diameter Range indicates the size of conductors that utilize the same tie.
(2) "Nominal Conductor Size" indicates one of various conductors within each range.
(3) The loop of the Double Support Ties on this page can accommodate J-neck insulators.
(4) For the succeeding ranges, the insulator's top groove radius should be at least as large as shown above.
(5) AWAC is a registered trademark of the Copperweld Co.

Side Tie – Groove Formed

NOMENCLATURE

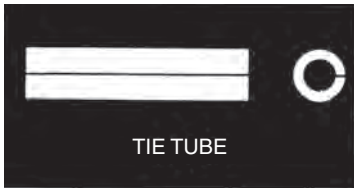


Tie Tube: For bare conductor, each tie is furnished with a Tie Tube Component. The Tie Tube is detached and applied over the bare conductor.

Identification Tape: Shows catalog number, nominal sizes.

Insulator Identification Mark: Identifies the correct insulator headstyle by colors corresponding to information on catalog pages.

Color Code and Applied Length: Assists in identification of conductor size, corresponding to tabular information appearing on catalog pages.



GENERAL RECOMMENDATIONS

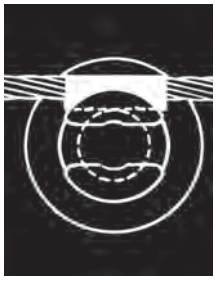
INTENDED USE: Side Ties manufactured of aluminum covered steel secure conductors in the side groove of interchangeable headstyle insulators.

Side Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties over Armor Rods.

GROOVE-FORMED: The Groove-Formed design broadens conductor diameter ranges, matching DISTRIBUTION Tie. The formed loop section permits better utilization of insulator groove space so that larger conductors can be accommodated on a given insulator.

SIDE TIE WITH TUBE: Side Ties provide superior abrasion protection for the conductor under all types of motion, including low frequency sway oscillation, high frequency aeolian vibration and galloping.

The tube component is recommended because it surrounds the bare conductor with a resilient cushion where the conductor would come into contact with the insulator and with the center section of the tie.



With the Tie Tube, the Side Tie not only replaces our original armoring product, but provides superior protection by eliminating abrasion rather than sacrificing outside surfaces to abrasion. In the case of Side Ties applied over plastic jacketed conductor, Side Ties can be used without tubes because contact with the bare conductor is prevented by the jacketing itself.

PREFORMED™ Plastic Side Ties are also offered as an alternate to metal ties applied over plastic jacketed conductor.

Side Ties used without tubes can replace hand tie wire in areas where abrasion damage has not been experienced.

VIBRATION DAMPERS: By using Side Ties with tubes abrasion cannot reduce the fatigue life of the conductor. However, for lines where experience indicates that prolonged periods of vibration might lead to fatigue of the conductor, cause inner wire fretting, or score the insulator's glaze, SVD's are recommended.

The following are guideline definitions for vibration activity. Application of these guidelines should be based on a Utility's field experience.

(Continued)

Side Tie – Groove Formed

GENERAL RECOMMENDATIONS CONTD.

"Excessive" Vibration: Areas where abrasion damage has been known to require replacement of both hand tie wire and protective rods, or where fatigue has been found under clamps. Protective rods should be replaced when visual inspection shows approximately one-half or more of the rod diameter has been abraded.

"Severe" Vibration: Areas where abrasion has required replacement of hand tie wire, but damage to protective rods has not progressed to the point where replacement is necessary.

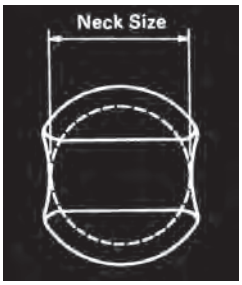
"Moderate" Vibration: Areas where replacement of hand tie wire has not been required, and damage is minor.

Side Ties, with pads, provide protection on areas of **"moderate"** vibration.

For areas experiencing "severe" or "excessive" vibration, supplemental use of SVD is recommended. Spiral Vibration Damper's purpose is to suppress aeolian vibration.

MECHANICAL STRENGTH: The Side Tie is designed to provide longitudinal holding strength in excess of values required by the National Electric Safety Code. The holding strength is usually sufficient to contain the broken conductor to a single span, however, the Side Tie is designed to relieve the load before severe damage is done to the pole's structural components.

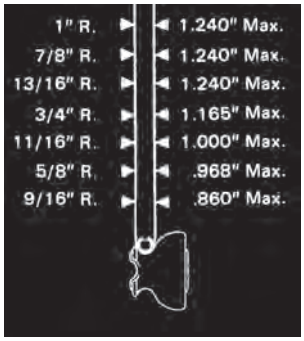
INTERCHANGEABLE HEADSTYLE INSULATOR: To insure proper fit and service life, it is recommended only insulators corresponding to C-Neck, F-Neck, or J-Neck be used. These neck-diameter and groove-height dimensions appear on ANSI standards.



Over 100 individual insulators can be identified for neck-size. The method of identifying neck size is through markings manufacturers put on their insulators.

Consult PLP for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is desirable.

CONDUCTOR SIZE: The Side Tie exactly matches the DISTRIBUTION Tie's ranges, which means identical color codes on armless construction. Conductor sizes up to 1.240" O.D. can be accommodated depending on the insulator's side groove radius.

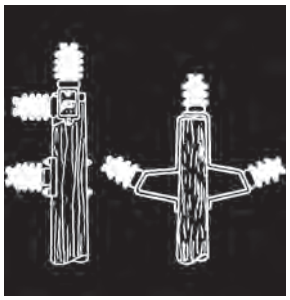


The Side Tie is designed to permit controlled movement of unbroken conductor, reducing cantilever loading at the base of the insulator or bracket, then restore itself. We refer to this unique feature as "resilience".

RADIO INTERFERENCE: The RIV/TVI characteristics of Side Ties are equivalent to those of a well-made hand tie when originally installed. During service life the precontoured Side Tie assures continued fit, which would have better RIV/TVI performance than a loosened hand tie wire.

TAPPING: Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of Side Ties cannot be recommended. Tapping over protective rods will remain permissible, however, there are now stirrups available that provide a superior method of making hot-line taps.

LINE ANGLES GENERAL GUIDELINES: On horizontally-mounted insulators, Side Ties can normally accommodate line angles up to **10**˚. On vertically-mounted insulators, line angles up to **40**˚ can normally be achieved. When insulators are mounted at various degrees of cant between the horizontal and the vertical, line angles between 0˚ and 40˚ may be accommodated depending upon the actual cant of the insulator.



A technical report is available which describes these permissible line angles for Side Ties as a function of the insulator's cant.

In all cases, the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove.

The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span

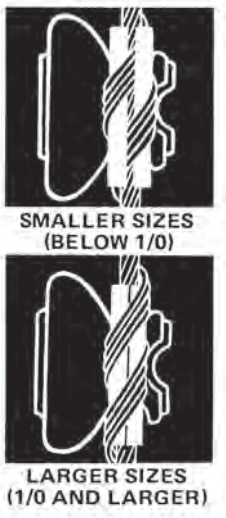
Side Tie – Groove Formed

lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues.

APPLICATION-INSPECTION: In the case of smaller sizes, the complete installation should show the applied leg tucked under the corner of the tube as shown.

On larger sizes of conductors, it is optional whether the legs go under or over the corner of the Tie Tube.

Because the clearance for application is the same whether or not the Tie Tube is installed, the maximum conductor O.D. is not affected by the Tube.



SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ Side Tie before application.

5. PREFORMED Side Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Side Tie – Groove Formed

For use on:
ACAR, ACSR,
All-Aluminum, AWAC®
Compacted ACSR,
Aluminum Alloy

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin

2-1/4" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN	MAX	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
STC-1250-P	.190	.215	#6, 6/1 #4, 7W Comp.	100	19	16	Black	Blue
STC-1251-P	.216	.244	#4, 7W All Alum. #4, 6/1, 7/1 Comp.	100	20	17	Black	Brown
STC-1252-P	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	22	19	Black	Orange
STC-1253-P	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	50	11	21	Black	Purple
STC-1254-P	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	50	16	24	Black	Red
STC-1255-P	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	17	26	Black	Yellow
STC-1256-P	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	20	28	Black	Blue
STC-1257-P	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	21	31	Black	Orange
STC-1258-P	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	22	32	Black	Red
STC-1259-P	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	50	24	23	Black	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:
(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(4) AWAC is a registered trademark of the Copperweld Co.

Side Tie – Groove Formed

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN	MAX	NOMINAL CONDUCTOR SIZE	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
STC-1260-P	.666	.755	336.4, 18/1 397.5, 19W All Alum. 400, 19W, 37W, All Alum.	25	Black	Brown
STC-1261-P	.756	.855	477, 19W, 37W, All Alum. 477, 18/1, 24/7	26	Black	Red
5/8" R. GROOVE (See Note 3)						
STC-1262-P	.856	.968	556.5, 19W All Alum. 636, 18/1 700, 37W, 61W, All Alum.	28	Black	Blue
11/16" R. GROOVE (See Note 3)						
STC-1263-P	.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7	29	Black	Green
3/4" R. GROOVE (See Note 3)						
STC-1264-P	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum.	33	Black	Yellow

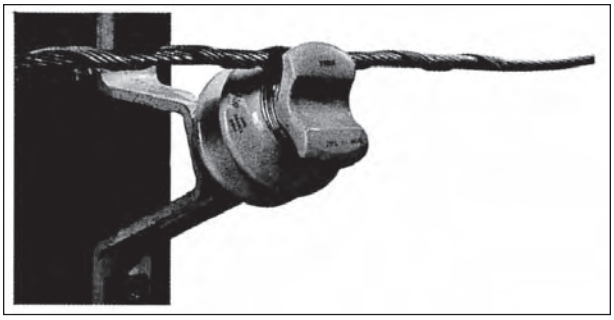
Right-hand lay standard

EXPLANATORY NOTES:
(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(4) AWAC is a registered trademark of the Copperweld Co.

Side Tie – Groove Formed

For use on:
ACAR, ACSR,
All-Aluminum, AWAC®
Compacted ASCR,
Aluminum Alloy

F-Neck Interchangeable
Headstyle Insulators



ANSI 55-4 Pin
ANSI 55-5 Pin **2-7/8"**
ANSI 57-1 Post **Neck Diameter**
ANSI 57-2 Post
ANSI 57-3 Post

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN	MAX	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
STF-1150-P	.190	.215	#6, 6/1 #4, 7W Comp.	100	16	16	Yellow	Blue
STF-1151-P	.216	.244	#4, 7W All Alum. #4, 6/1, 7/1 Comp.	100	17	17	Yellow	Brown
STF-1152-P	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	19	19	Yellow	Orange
STF-1153-P	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	50	12	21	Yellow	Purple
STF-1154-P	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	50	17	24	Yellow	Red
STF-1155-P	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	17	26	Yellow	Yellow
STF-1156-P	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	21	28	Yellow	Blue
STF-1157-P	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	22	30	Yellow	Orange
STF-1158-P	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	24	32	Yellow	Red
STF-1159-P	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	50	24	23	Yellow	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
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Side Tie – Groove Formed

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN	MAX	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
STF-1160-P	.666	.755	336.4, 37W All Alum. 336.4, 18/1 397.5, 19W All Alum. 400, 19W, 37W All Alum.	50	33	25	Yellow	Brown
STF-1161-P	.756	.855	477, 19W, 37W, All Alum. 477, 18/1, 24/7	50	30	26	Yellow	Red
5/8" R. GROOVE (See Note 3)								
STF-1162-P	.856	.968	556.6, 19W, All Alum. 636, 18/1 700, 37w, 61w, All Alum.	50	36	28	Yellow	Blue
11/16" R. GROOVE (See Note 3)								
STF-1163-P	.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7	50	36	29	Yellow	Green
3/4" R. GROOVE (See Note 3)								
STF-1164-P	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum.	50	39	33	Yellow	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
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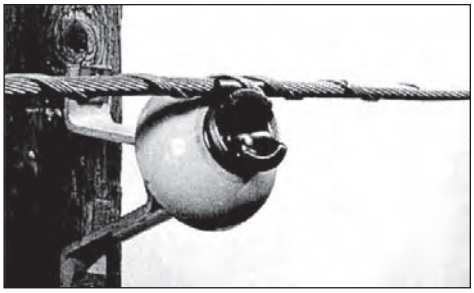
Side Tie – Groove Formed

For use on:
ACSR, ACAR,
All-Aluminum, AWAC®,
Compacted ACSR,
Aluminum Alloy

J-Neck Interchangeable Headstyle Insulators

ANSI 55-6
Single Skirt Pin
ANSI 55-7
Single Skirt Pin
ANSI 56-1
Double Skirt Pin

3-1/2"
Neck Diameter

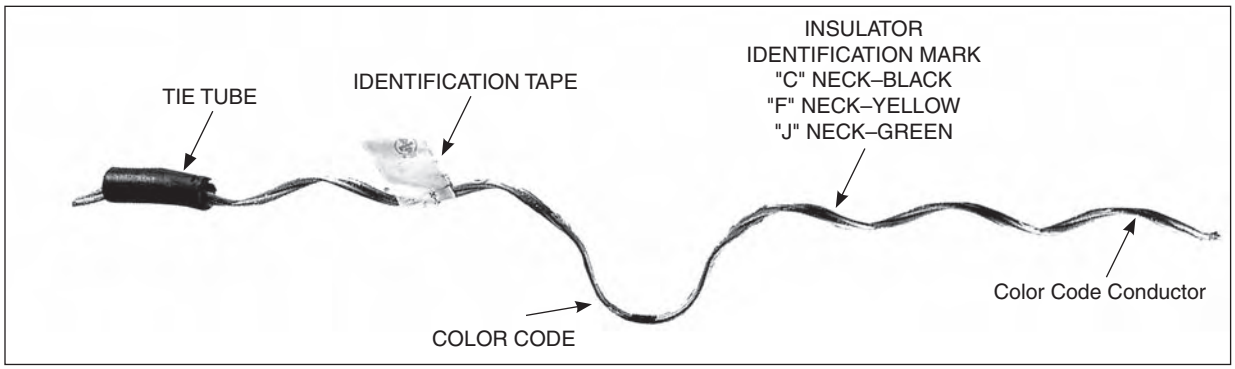


CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN	MAX	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 3)								
STJ-1500-P	.190	.215	#6, 6/1	100	19	16	Green	Blue
STJ-1501-P	.216	.244	#4, 7W, All Alum.	100	21	17	Green	Brown
STJ-1502-P	.245	.277	#4, 6/1 - 7/1 #3, 7W, All Alum.	100	23	19	Green	Orange
STJ-1503-P	.278	.315	#3, 7W, Alum. Alloy #2, 7W, All Alum.	100	28	21	Green	Purple
STJ-1504-P	.316	.357	#2, 6/1 - 7/1 #2, 7W, Alum. Alloy #1, 6/1	100	32	24	Green	Red
STJ-1505-P	.358	.405	1/0, 7W-19W All Alum. 1/0, 6/1 1/0, 7W, Alum. Alloy	100	33	26	Green	Yellow
STJ-1506-P	.406	.459	2/0, 7W-19W, All Alum. 2/0, 6/1	50	24	31	Green	Blue
STJ-1507-P	.460	.520	3/0, 7W-19W, All Alum. 3/0, 6/1 3/0, 7W, Alum. Alloy	50	24	32	Green	Orange
STJ-1508-P	.521	.588	4/0, 6/1 4/0, 7W, All Alum. 4/0, 7W, Alum Alloy 250, 19W-37W All Alum.	50	25	34	Green	Red
STJ-1509-P	.589	.665	266.8, 19W-37W All Alum. 300, 19W37W, All Alum. 266.8, 26/7	50	27	23	Green	Purple
5/8" R. GROOVE (See Note 3)								
STJ-1510-P	.666	.755	336.4, 37W, All Alum. 397.5, 19W-37W, All Alum.	50	33	25	Green	Brown
STJ-1511-P	.756	.855	397.5, 24/7, 26/7 500, 19W-37W, All Alum.	50	35	26	Green	Red
STJ-1512-P	.856	.968	556.5, 19W-37W-61W All Alum. 666.6, 36/1 700, 37W-61W All Alum.	25	19	28	Green	Blue
STJ-1513-P	.969	1.096	636, 24/7, 26/7, 30/19 715.5, 36/1, 24/7, 26/7	25	19	29	Green	Green
STJ-1514-P	1.097	1.240	954, 54/7 1033.5, 45/7 1113, 61W All Alum. 954, 37W Alum. Alloy	25	22	33	Green	Yellow

EXPLANATORY NOTES:
(1) Nominal Conductor size indicates one of various conductors within each range.
(3) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(4) AWAC is a registered trademark of the Copperweld Co.

EZ-WRAP® Side Tie

NOMENCLATURE



Tie Tube: For bare conductor, each tie is furnished with a Tie Tube Component. The Tie Tube is detached and applied over the bare conductor.

Identification Tape: Shows catalog number, nominal sizes.

Insulator Identification Mark: Identifies the correct insulator headstyle by colors corresponding to information on catalog pages.

Color Code: Assists in identification of conductor size, corresponding to tabular information appearing on catalog pages.

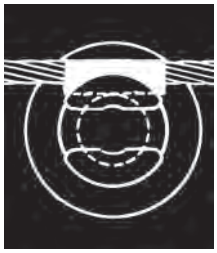
GENERAL RECOMMENDATIONS

INTENDED USE: EZ-WRAP Side Ties, manufactured of aluminum covered steel, secure conductors in the side groove of interchangeable headstyle insulators.

EZ-WRAP Side Ties provide an improved method of securing conductor compared to clamp-top insulators or hand ties over Armor Rods.

EZ-WRAP SIDE TIE: EZ-WRAP Side Ties provide superior abrasion protection over hand tie wire for the conductor under all types of motion, including low-frequency sway oscillation, high-frequency aeolian vibration and galloping.

The tube component surrounds the bare conductor with a resilient cushion where the conductor would come into contact with the insulator. In the case of EZ-WRAP Side Ties applied over plastic jacketed conductors, the tube can be discarded because contact with the bare conductor is prevented by the jacketing itself.



VIBRATION DAMPERS: While the EZ-WRAP Side Tie is superior to hand tie wire, there may be conditions where excessive conductor movement requires the use of supplemental dampers.

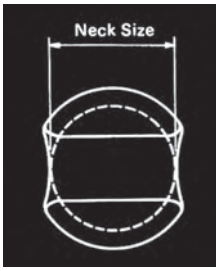
For excessive **aeolian vibration** on conductors up to .760" OD, the Spiral Vibration Damper is recommended. Typically 2 SVD/span on distribution construction is adequate for protection, although more may be required depending upon a number of factors.

For **conductor galloping**, the Air Flow Spoiler is recommended. Use of the proper size and quantity of AFS per span can eliminate or minimize the effects of galloping. Quantity per span is based upon total span length and other factors.

Review the Motion Control section and/or consult PLP for engineering recommendations for Air Flow Spoilers, and if necessary SVD's.

MECHANICAL STRENGTH: The EZ-WRAP Side Tie is designed to provide longitudinal holding strength in excess of values required by the National Electric Safety Code. The holding strength is usually sufficient to contain the broken conductor to a single span, however, the EZ-WRAP Side Tie is designed to relieve the load before severe damage is done to the pole's structural components.

INTERCHANGEABLE HEADSTYLE INSULATOR: To insure proper fit and service life, it is recommended that only insulators corresponding to C-Neck, F-Neck, or J-Neck be used. These neck-diameters and groove-height dimensions appear on ANSI standards.



(Continued)

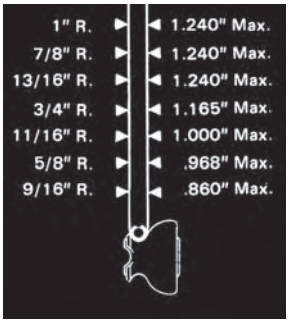
EZ-WRAP® Side Tie

GENERAL RECOMMENDATIONS CONTD.

Over 100 individual insulators can be identified for neck-size. The other method of identifying neck size is through markings manufacturers put on their insulators.

Consult PLP for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is desirable.

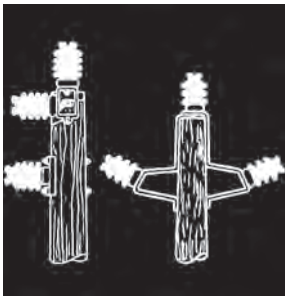
CONDUCTOR SIZE: The EZ-WRAP Side Tie exactly matches the DISTRIBUTION Ties' ranges, which means identical color codes on armless construction. Conductor sizes up to 1.240" O.D. can be accommodated depending on the insulator's side groove radius.



The EZ-WRAP Side Tie is designed to permit controlled movement of unbroken conductor, reducing cantilever loading at the base of the insulator or bracket, then restore itself. We refer to this unique feature as "resilience".

RADIO INTERFERENCE: The RIV/TVI characteristics of EZ-WRAP Side Ties are equivalent to those of a well-made hand tie when originally installed. During service life the precontoured EZ-WRAP Side Tie assures continued fit, which would have better RIV/TVI performance than a loosened tie wire.

TAPPING: Compared to the use of protective rods, placing hot-line clamps directly over the applied legs of EZ-WRAP Side Ties cannot be recommended. Tapping over protective rods will remain permissible, however, there are now stirrups available that provide a superior method of making hot-line taps.



LINE ANGLES GENERAL GUIDELINES: On horizontally-mounted insulators, EZ-WRAP Side Ties can normally accommodate line angles up to **10**˚. On vertically-mounted insulators, line angles up to **40**˚ can normally be achieved. When insulators are mounted at various degrees of cant between the horizontal and the vertical, line angles between 0˚ and 40˚ may be accommodated depending upon the actual cant of the insulator.

A technical report is available which describes these permissible line angles for EZ-WRAP Side Ties as a function of the insulator's cant.

In all cases, the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size EZ-WRAP Side Tie before application.

5. EZ-WRAP Side Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

EZ-WRAP® Side Tie

For use on:
ACAR, ACSR,
All-Aluminum, AWAC®
Compacted ACSR,
Aluminum Alloy

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 PIN
ANSI 55-3 PIN

2-1/4" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	DIAMETER RANGE (INCHES) MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 2)								
EZSTC-270	.190	.215	#6, 6/1 #4, 7W Comp.	100	16	21	Black	Blue
EZSTC-271	.216	.244	#4, 7W All Alum. #4, 6/1, 7/1 Comp.	100	17	22	Black	Brown
EZSTC-272	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	18	23	Black	Orange
EZSTC-273	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	100	18	24	Black	Purple
EZSTC-274	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	100	19	25	Black	Red
EZSTC-275	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	21	23	Black	Yellow
EZSTC-276	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	100	22	25	Black	Blue
EZSTC-277	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	100	24	27	Black	Orange
EZSTC-278	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	100	30	28	Black	Red
EZSTC-279	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	100	34	31	Black	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

EZ-WRAP® Side Tie

For use on:
ACAR, ACSR,
All-Aluminum, AWAC®
Compacted ASCR,
Aluminum Alloy

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 PIN
ANSI 55-3 PIN

2-1/4" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
EZSTC-280	.666	.755	336.4, 37W All Alum. 336.4, 18/1 397.5, 19W All Alum. 400, 19W, 37W All Alum.	100	35	33	Black	Brown
EZSTC-281	.756	.858	477, 19W, 37W, All Alum. 477, 18/1, 24/7	50	29	35	Black	Red
5/8" R. GROOVE (See Note 2)								
EZSTC-282	.859	.968	556.5, 19W All Alum. 636, 18/1 700, 37w, 61w, All Alum.	50	65	36	Black	Blue
11/16" R. GROOVE (See Note 2)								
EZSTC-283	.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7	50	38	38	Black	Green
3/4" R. GROOVE (See Note 2)								
EZSTC-284	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum.	50	38	39	Black	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

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(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
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EZ-WRAP® Side Tie

For use on:
ACAR, ACSR,
All-Aluminum, AWAC®
Compacted ASCR,
Aluminum Alloy

F-Neck Interchangeable
Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-4 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-7/8"
Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 2)								
EZSTF-170	.190	.215	#6, 6/1 #4, 7W Comp.	100	16	22	Yellow	Blue
EZSTF-171	.216	.244	#4, 7W All Alum. #4, 6/1, 7/1 Comp.	100	17	23	Yellow	Brown
EZSTF-172	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	18	24	Yellow	Orange
EZSTF-173	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	100	19	25	Yellow	Purple
EZSTF-174	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	100	20	26	Yellow	Red
EZSTF-175	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	100	21	24	Yellow	Yellow
EZSTF-176	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	100	24	26	Yellow	Blue
EZSTF-177	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	100	25	28	Yellow	Orange
EZSTF-178	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	100	30	29	Yellow	Red
EZSTF-179	.589	.665	266.8, 37W All Alum. 266.8, 18/1 336.4, 19W All Alum.	100	34	32	Yellow	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
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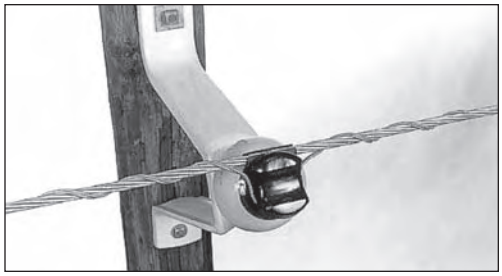
EZ-WRAP® Side Tie

For use on:
ACSR, ACAR,
All-Aluminum, AWAC®
Compacted ACSR,
Aluminum Alloy

F-Neck Interchangeable
Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-4 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-7/8"
Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
EZSTF-180	.666	.755	336.4, 37W All Alum. 336.4, 18/1 397.5, 19W All Alum. 400, 19W, 37W All Alum.	100	34	34	Yellow	Brown
EZSTF-181	.756	.858	477, 19W, 37W, All Alum. 477, 18/1, 24/7	50	54	36	Yellow	Red
5/8" R. GROOVE (See Note 2)								
EZSTF-182	.859	.968	556.5, 19W, All Alum. 636, 18/1 700, 37w, 61w, All Alum.	50	36	37	Yellow	Blue
11/16" R. GROOVE (See Note 2)								
EZSTF-183	.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7	50	39	39	Yellow	Green
3/4" R. GROOVE (See Note 2)								
EZSTF-184	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum.	50	40	40	Yellow	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

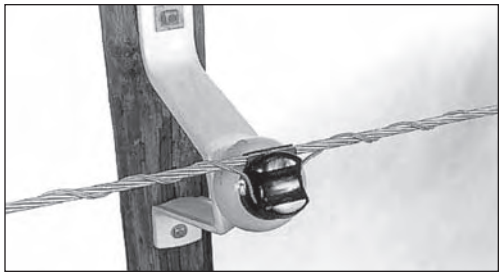
EZ-WRAP® Side Tie

For use on:
ACSR, ACAR, All-Aluminum, AWAC®, Compacted ACSR, Aluminum Alloy

J-Neck Interchangeable Headstyle Insulators

ANSI 55-6
Single Skirt Pin
ANSI 55-7
Single Skirt Pin
ANSI 56-1
Double Skirt Pin

3-1/2" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPROX. APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 2)								
EZSTJ-570	.190	.215	#6, 6/1	100	18	24	Green	Blue
EZSTJ-571	.216	.244	#4, 7W, All Alum.	100	19	25	Green	Brown
EZSTJ-572	.245	.277	#4, 6/1 - 7/1 #3, 7W, All Alum.	100	19	26	Green	Orange
EZSTJ-573	.278	.315	#3, 7W, Alum. Alloy #2, 7W, All Alum.	100	20	27	Green	Purple
EZSTJ-574	.316	.357	#2, 6/1 - 7/1 #2, 7W, Alum. Alloy #1, 6/1	100	21	28	Green	Red
EZSTJ-575	.358	.405	1/0, 7W-19W All Alum. 1/0, 6/1 1/0, 7W, Alum. Alloy	100	23	26	Green	Yellow
EZSTJ-576	.406	.459	2/0, 7W-19W, All Alum. 2/0, 6/1	100	25	28	Green	Blue
EZSTJ-577	.460	.520	3/0, 7W-19W, All Alum. 3/0, 6/1 3/0, 7W, Alum. Alloy	100	26	30	Green	Orange
EZSTJ-578	.521	.588	4/0, 6/1 4/0, 7W, All Alum. 4/0, 7W, Alum Alloy 250, 19W-37W All Alum.	100	35	31	Green	Red
EZSTJ-579	.589	.665	266.8, 19W-37W All Alum. 300, 19W37W, All Alum. 266.8, 26/7	100	38	34	Green	Purple
5/8" R. GROOVE (See Note 2)								
EZSTJ-580	.666	.755	336.4, 37W, All Alum. 397.5, 19W-37W, All Alum.	50	40	36	Green	Brown
EZSTJ-581	.756	.858	397.5, 24/7, 26/7 500, 19W-37W, All Alum.	50	31	38	Green	Red
EZSTJ-582	.859	.968	556.5, 19W-37W-61W All Alum. 666.6, 36/1 700, 37W-61W All Alum.	50	38	39	Green	Blue
EZSTJ-583	.969	1.096	636, 24/7, 26/7, 30/19 715.5, 36/1, 24/7, 26/7	50	40	41	Green	Green
EZSTJ-584	1.097	1.240	954, 54/7 1033.5, 45/7 1113, 61W All Alum. 954, 37W Alum. Alloy	50	43	42	Green	Yellow

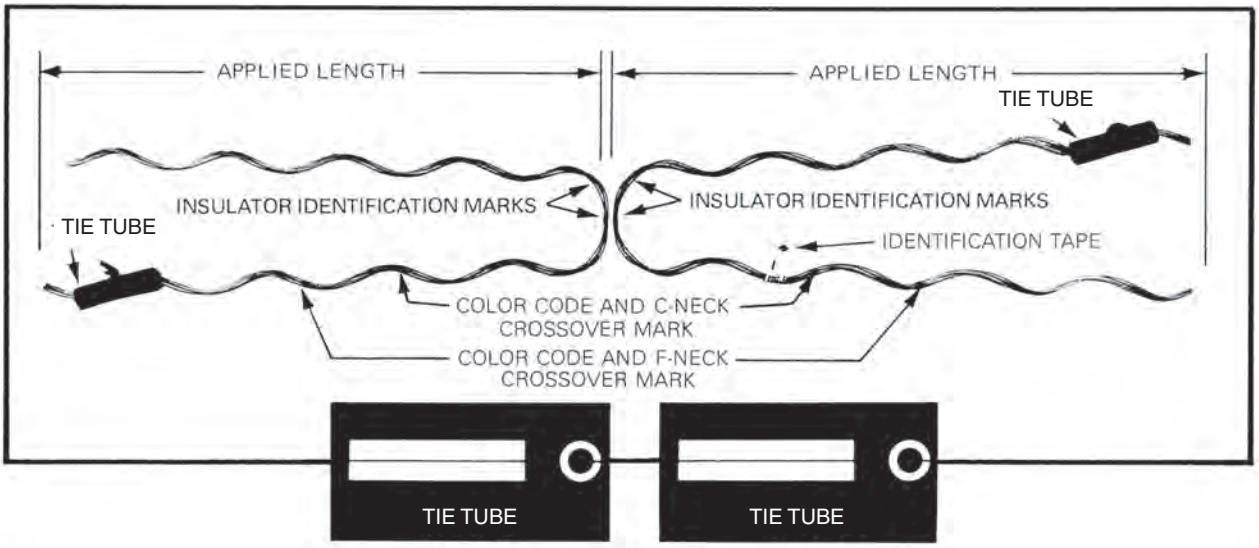
Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(3) AWAC is a registered trademark of the Copperweld Co.

Double Side Tie

NOMENCLATURE



Tie Assembly: A Double Side Tie assembly consists of two metal tie components plus two tie tubes.

Tie Tube: Each Double Side Tie assembly is supplied with two elastomeric tie tubes, designed for abrasion protection.

Cross-Over Marks: C-Neck indicates starting point for application on smaller diameter C-Neck insulators.

F-Neck indicates alternate starting point for application on larger diameter F-Neck insulators.

J-Neck has only one cross-over mark.

Insulator Identification Mark: Identifies the correct insulator headstyle by colors corresponding to information on catalog pages.

Color Code and Applied Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number and nominal conductor sizes.

GENERAL RECOMMENDATIONS

INTENDED USE: Double Side Tie, manufactured of aluminum-covered steel wire, is designed to secure conductors on double-arm construction in the side groove of interchangeable headstyle insulators. They are intended for larger line angles than top groove style ties, such as, Double-Support Ties.

LINE ANGLES - GENERAL GUIDELINES: On vertically-mounted insulators at double crossarms or brackets, the Double Side Tie can normally accommodate line angles of between **0**˚ and **80**˚, with no more than a **40**˚ angle at each insulator. When insulators are mounted at various degrees of cant from the vertical, various line angles may be accommodated, depending upon the actual cant of the insulators.

A technical report is available which describes these permissible line angles for Double Side Ties as a function of the insulator's cant.

In all cases, the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues.

INTERCHANGEABLE Headstyle INSULATORS: Double Side Ties are designed for installation on double insulator construction in the side groove of interchangeable insulators. To insure proper fit and service life, it is recommended only insulators with uniform dimensions as described by the ANSI insulator standards be used. Consult PLP for application on nonstandard insulators.

(Continued)

Double Side Tie

GENERAL RECOMMENDATIONS CONTD.

DOUBLE SIDETIE: Double Side Ties feature a elastomeric tube which surrounds the bare conductor with a resilient cushion. This tube provides superior abrasion protection for the conductor under all types of motion, including low frequency sway oscillation and high frequency aeolian vibration. As a result, Double Side Ties provide a vastly improved method of securing conductors compared to hand ties over protective rods, since they eliminate abrasion (and the need for protective rods) rather than sacrificing outside surfaces to abrasion. For applications on jacketed conductors, the tube may be discarded.

MECHANICAL STRENGTH: The Double Side Tie is designed to provide superior mechanical strength and resiliency during conductor motion and cyclic loading conditions. Longitudinal holding strengths consistently exceed the requirements of the National Electric Safety Code.

RADIO INTERFERENCE: The RIV/TVI characteristics of Double Side Ties are equivalent to those of a well made hand tie, as originally installed. The precontoured loop and formed legs of the Double Support Tie assures continued fit, which will provide better RIV/TVI performance than a loosened hand-tie wire.

VIBRATION DAMPERS: The Double Side Tie is designed to outperform other tie devices during conductor motion activity, such as aeolian vibration and galloping. However, on some lines the use of dampers may be required to prevent damage. Utilities that have experienced conductor motion or expect to, should consider adding dampers. Consult PLP® for general guidelines and advice concerning conductor motion and dampers. Also, consult the Motion Control section.

TAPPING: Taps should not be made directly over the legs or loop of the Double Side Tie.

CONDUCTOR COMPATIBILITY: Double Side Ties should be used only on the size, type, and lay direction for which they are designed. When using conductors not mentioned in the catalog, consult PLP.

During installation and at all times, care should be taken to avoid gouging or damaging the wires of the Double Side Tie or conductor.

Double Side Ties should not be used as tools, i.e., come-alongs, pulling-grips, etc.

Consult the Double Side Tie Application Procedure for additional installation information.

When in doubt about usage of Double Side Ties, consult your PREFORMED™ Sales Representative or Preformed Line Products.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED Double Side Tie before application.

5. PREFORMED Double Side Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

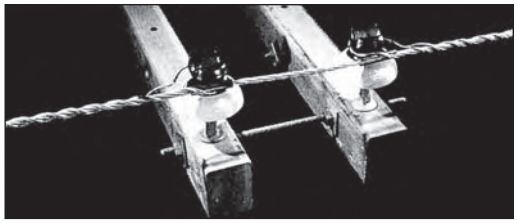
Double Side Tie

For use on:
ACSR, All-Aluminum,
AWAC®, Aluminum Alloy
Compacted ACSR, ACAR

C-Neck & F-Neck Interchangeable Headstyle Insulators

ANSI 55-2 PIN
ANSI 55-3 PIN
ANSI 55-4 PIN
ANSI 55-5 PIN
ANSI 57-1 POST
ANSI 57-2 POST
ANSI 57-3 POST

2-1/4" & 2-7/8" Neck Diameters



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 2)								
DBST-1100	.245	.277	#4, 6/1-7/1 #4, 7W Alum. Alloy	50	21	16	Black/ Yellow	Orange
DBST-1101	.278	.315	#3, 7W Alum.Alloy #2, 7W All Allum.	50	21	16	Black/ Yellow	Purple
DBST-1102	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	50	21	17	Black/ Yellow	Red
DBST-1103	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	21	16	Black/ Yellow	Yellow
DBST-1104	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	21	18	Black/ Yellow	Blue
DBST-1105	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	36	19	Black/ Yellow	Orange
DBST-1106	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	36	19	Black/ Yellow	Red
DBST-1107	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	38	20	Black/ Yellow	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:
(1) Diameter Range indicates the size of conductors that utilize the same tie.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(3) The loop of the Double Side Ties on this page can accommodate either C or F neck insulators.
(4) Nominal Conductor size indicates one of various conductors within each range.
(5) AWAC is a registered trademark of the Copperweld Co.

Double Side Tie

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
DBST-1108	.666	.755	336.4, 18/1 336.4, 19W All Alum. 397.5, 19W, All Alum.	50	39	20	Black & Yellow	Brown
DBST-1109	.756	.858	477, 19W, 37W, All Alum. 477, 18/1, 24/7, 26/7	50	39	20	Black & Yellow	Red
5/8" R. GROOVE (See Note 2)								
DBST-1110	.859	.968	556.5, 19W, All Alum. 636, 18/1 700, 37W, 61W, All Alum.	50	42	22	Black & Yellow	Blue
11/16" R. GROOVE (See Note 2)								
DBST-1111	.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7	50	44	24	Black & Yellow	Green
3/4" R. GROOVE (See Note 2)								
DBST-1112	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum.	50	44	24	Black & Yellow	Yellow

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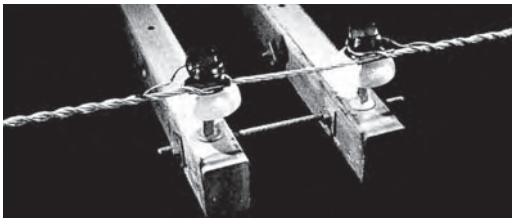
Right-hand lay standard

EXPLANATORY NOTES:
(1) Diameter Range indicates the size of conductors that utilize the same tie.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(3) The loop of the Double Side Ties on this page can accommodate either C or F neck insulators.
(4) Nominal Conductor size indicates one of various conductors within each range.
(5) AWAC is a registered trademark of the Copperweld Co.

Double Side Tie

For use on:
ACSR, All-Aluminum,
AWAC®, Aluminum Alloy
Compacted ASCR, ACAR

J-Neck Interchangeable
Headstyle Insulators



ANSI 55-6
Single Skirt Pin
ANSI 55-7 **3-1/2"**
Single Skirt Pin **Neck Diameter**
ANSI 56-1
Double Skirt Pin

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
9/16" R. GROOVE (See Note 2)								
DBST-1300	.245	.277	#4, 6/1-7/1 #4, 7W Alum. Alloy	50	24	19	Green	Orange
DBST-1301	.278	.315	#3, 7W Alum.Alloy #2, 7W All Allum.	50	21	17	Green	Purple
DBST-1302	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	50	27	22	Green	Red
DBST-1303	.358	.405	1/0, 7W - 19W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	50	26	21	Green	Yellow
DBST-1304	.406	.459	2/0, 7W - 19W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	50	36	19	Green	Blue
DBST-1305	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	50	37	20	Green	Orange
DBST-1306	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	50	39	21	Green	Red
DBST-1307	.589	.665	266.8, 37W All Alum. 266.8, 18/1	50	45	24	Green	Purple

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Diameter Range indicates the size of conductors that utilize the same tie.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(3) The loop of the Double Side Ties on this page can accommodate J-neck insulators.
(4) Nominal Conductor size indicates one of various conductors within each range.
(5) AWAC is a registered trademark of the Copperweld Co.

Double Side Tie

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	APPLIED LENGTH (INCHES)	INSUL. IDENT. MARK	COLOR CODE
DBST-1308	.666	.755	336.4, 18/1 336.4, 19W All Alum. 397.5, 19W, All Alum.	50	46	25	Green	Brown
DBST-1309	.756	.858	477, 19W, 37W, All Alum. 477, 18/1, 24/7, 26/7	50	44	24	Green	Red
5/8" R. GROOVE (See Note 2)								
DBST-1310	.859	.968	556.5, 19W, All Alum. 636, 18/1 700, 37W, 61W, All Alum.	50	43	23	Green	Blue
11/16" R. GROOVE (See Note 2)								
DBST-1311	.969	1.096	795, 37W, 61W, All Alum. 715.5, 24/7 795, 54/7	50	43	23	Green	Green
DBST-1312	1.097	1.240	954, 36/1, 54/7 1033.5, 37W, 61W, All Alum.	50	48	25	Green	Yellow

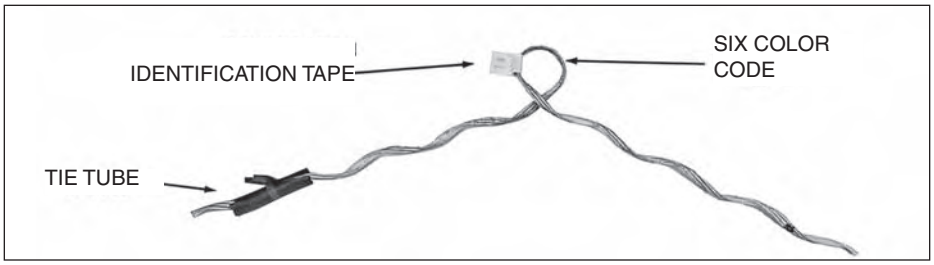
Right-hand lay standard

EXPLANATORY NOTES:

(1) Diameter Range indicates the size of conductors that utilize the same tie.
(2) For the succeeding ranges, the insulator's side groove radius should be at least as large as shown above.
(3) The loop of the Double Side Ties on this page can accommodate J-neck insulators.
(4) Nominal Conductor size indicates one of various conductors within each range.
(5) AWAC is a registered trademark of the Copperweld Co.

Spool Tie

NOMENCLATURE



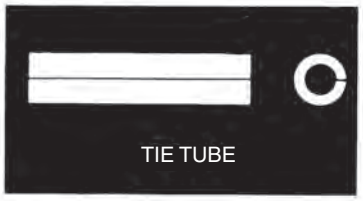
Tie Assembly: A Spool Tie Assembly consists of one metal tie component plus tie tube.

Tie Tube: Each Spool Tie is supplied with an elastomeric tie tube designed for abrasion protection with bare conductors.

Color Code: Identifies proper conductor size, corresponding to tabular information appearing in this section.

Identification Tape: Lists catalog numbers, proper insulator type, and nominal conductor sizes.

Applied Length: Describes length of tie after installation, plus assists in product identification.



GENERAL RECOMMENDATIONS

The Spool Tie is intended for use on aluminum based conductors with diameters from .190" to .968".

Interchangeable Neck-Style Insulators: Spool Ties listed in this section are designed to be applied to ANSI Class 53-1, 53-2, and 53-3 spool insulators which have 1-3/4" neck diameters. Consult PLP for specifics. "F" neck size Side Ties can be used for application on ANSI Class 53-4 and 53-5 which have 2-7/8" neck diameters.

To insure proper fit and service life of the Spool Tie, it is recommended only spool insulators with uniform dimensions, as described by the latest (C29.3) ANSI standards be used. A partial listing of acceptable insulators appears on the last page of this section. Consult PLP for applications on non-listed or non-standard insulators.

Each Spool Tie is supplied with an elastomeric tie tube designed to minimize abrasion to bare conductors and insulators. For application on jacketed conductors, the tube may be discarded. Spool Ties can also be applied to bare conductor without the tube where desired, although consideration of abrasion should be given.

The Spool Tie is designed to provide superior mechanical strength and resiliency during conductor motion and cyclic loading conditions. Longitudinal holding strengths consistently exceed the requirements of the National Electric Safety Code.

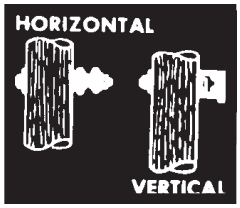
The RIV/TVI characteristics of Spool Ties are equivalent to those of a well made hand tie as originally installed. The precontoured loop and formed legs of the Spool Tie assure continued fit, which provide better RIV/TVI performance than a loosened tie wire.

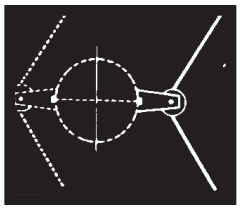
Vibration Dampers: The Spool Tie is designed to outperform the hand tie during conductor motion activity, such as aeolian vibration and galloping. However, on some lines, the use of dampers may be necessary to prevent damage. Utilities that have experienced conductor motion or expect to, should consider adding dampers. Consult PLP® for general guidelines and advice concerning conductor motion and dampers. Also consult the Motion Control catalog section.

Spool Tie

INSTALLATION GUIDELINES

1. **Insulator Mounting**: When installing a Spool Tie, the spool insulator may be mounted either horizontally or vertically. Whatever the construction style, the conductor should be positioned so it will bear, as much as possible, into the insulator. During vertical mounted installations, the insulator should be removed from the rack or clevis so the conductor may be positioned inside the insulator. However, when running angles turn *into* the pole, the conductor should be placed on the *outside* of the insulator so the conductor bears against the spool.





2. **Line Angles - General Guidelines:** On horizontally-mounted insulators, Spool Ties can normally accommodate line angles up to **10˚**. On vertically-mounted insulators, line angles up to **40˚** can normally be achieved.

   In all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues.

3. **Tapping:** Taps should not be made directly over the legs or loop of the Spool Tie.

4. **Conductor Compatibility:** Spool Ties should be used only on the size, type, and lay direction for which they are designed. When using conductors not mentioned in this catalog section, consult PLP.

5. During installation and at all times, care should be taken to avoid gouging or damaging the protective coating of the Spool Tie or the conductor.

6. Spool Ties should not be used as tools; i.e., come-alongs, pulling-in grips, etc.

7. Consult the Spool Tie Application Procedure for additional installation information.

8. When in doubt about usage of Spool Ties, consult your PLP representative or Preformed Line Products.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ Spool Tie before application.

5. PREFORMED Spool Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Spool Tie

For use on:
ACAR, All-Aluminum
ACSR, Aluminum Alloy
AWAC, Compacted ACSR

Spool Insulator

ANSI 53-1
ANSI 53-2 **1-3/4" Neck Diam.**
ANSI 53-3



Catalog Number	Diameter Range (Inches)		Nominal Conductor Size		Units	Wt./Lbs.	Applied Length (Inches)	Color Code
	Min.	Max.	Bare Conductor	Plastic Jacketed Conductor	Per Carton			
SPL-1352-P	.245	.277	#4, 6/1, 7/1 #4, 7W Alum. Alloy	#6, 7W, 2/64s #6, Solid, 3/64s #6, 6/1, 2/64s	100	16	19	Orange
SPL-1353-P	.278	.315	#3, 7W Alum. Alloy #2, 7W All Alum.	#6, 6/1, 3/64s #4, Solid, 3/64s #4, 6/1, 2/64s	100	17	21	Purple
SPL-1354-P	.316	.357	#2, 6/1, 7/1 #2, 7W Alum. Alloy #1, 6/1	#2, 7W, 3/64s #4, 6/1, 7/1, 3/64s	100	23	24	Red
SPL-1355-P	.358	.405	1/0, 7W All Alum. 1/0, 6/1 1/0, 7W Alum. Alloy	#3, 7W, 4/64s #2, 7W, 3/64s #4, 7W, 5/65s	100	24	26	Yellow

Right-hand lay standard

EXPLANATORY NOTES:
(1) "Diameter Range" indicates the size of conductors that utilize the same tie.
(2) "Nominal Conductor Size" indicates only a few conductors that have outside diameters within the ranges listed.
(3) Since all spool insulators do not have neck dimensions suitable for application of the Spool Tie, consult the Insulator Manufacturer's List on the last page in this section.
(4) AWAC is a registered trademark of the Copperweld Co.

Spool Tie

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy , ACAR
All-Aluminum, AWAC®
Compacted All-Aluminum

Spool Insulator

ANSI 53-1
ANSI 53-2 **1-3/4" Diameter**
ANSI 53-3

Catalog Number	Diameter Range (Inches)		Nominal Conductor Size		Units	Wt./Lbs.	Applied Length (Inches)	Color Code
	Min.	Max.	Bare Conductor	Plastic Jacketed Conductor	Per Carton			
SPL-1356-P	.406	.459	2/0, 7W All Alum. 2/0, 6/1 2/0, 7W Alum. Alloy	#2, 6/1, 3/64s #2, 7W, 4/64s #1, 7W, 4/64s	100	28	28	Blue
SPL-1357-P	.460	.520	3/0, 7W All Alum. 3/0, 6/1 3/0, 7W Alum. Alloy	#4, 7W, 8/64s #1, 6/1, 4/64s #1, 7W-19W, 5/64s 1/0, 7W, 4/64s	100	32	31	Orange
SPL-1358-P	.521	.588	4/0, 7W All Alum. 4/0, 6/1 4/0, 7W Alum. Alloy	1/0, 6/1, 4/64s 1/0, 7W, 5/64s 2/0, 7W, 4/64s 1/0, 6/1, 5/64s	50	18	32	Red
SPL-1359-P	.589	.665	266.8, 37W All Alum. 266.8, 18/1	3/0, 7W-19W, 4/64s 3/0, 6/1, 4/64s 4/0, 7W-19W, 4/64s 3/0, 6/1, 5/64s	50	19	23	Purple
SPL-1360-P	.666	.755	336.4, 18/1 336.4, 19W All Alum. 397.5, 19W All Alum. 400, 19W, 37W All Alum.	4/0, 7W, 5/64s 3/0, 6/1, 6/64s 4/0, 6/1, 5/64s 266.8, 19W, 5/64s	50	24	25	Brown
SPL-1361-P	.756	.858	477, 19W, 37W All Alum. 477, 18/1, 24/7 556.5, 19W All Alum.	266.8, 18/1, 5/64s 336.4, 19W, 4/64s 336.4, 37W, 6/64s	50	25	26	Red
SPL-1362-P	.859	.968	636, 18/1 700, 37W, 61W All Alum.	350, 37W, 6/64s 336.4, 19W, 8/64s 450, 37W, 5/64s 477, 37W, 5/64s	50	26	28	Blue

Right-hand lay standard
EXPLANATORY NOTES:

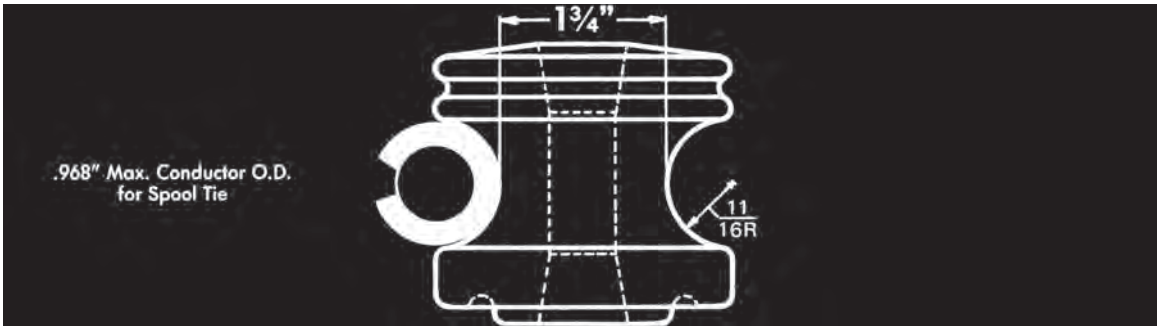
(1) "Diameter Range" indicates the size of conductors that utilize the same tie.
(2) "Nominal Conductor Size" indicates only a few conductors that have outside diameters within the ranges listed.
(3) Since all spool insulators do not have neck dimensions suitable for application of the Spool Tie, consult the Insulator Manufacturer's List on the last page in this section.
(4) AWAC is a registered trademark of the Copperweld Co.

Spool Tie

INSULATOR MANUFACTURER LIST:

Any given *Spool Tie* appearing in our catalog can be used interchangeably with any insulator of the same corresponding neck diameter appearing on this list. The diagramed neck dimensions, important to *Spool Ties*, are part of the ANSI Standard C-29.3 Specification.

ANSI 53-1
ANSI 53-2
ANSI 53-3
1-3/4" Neck Diameter



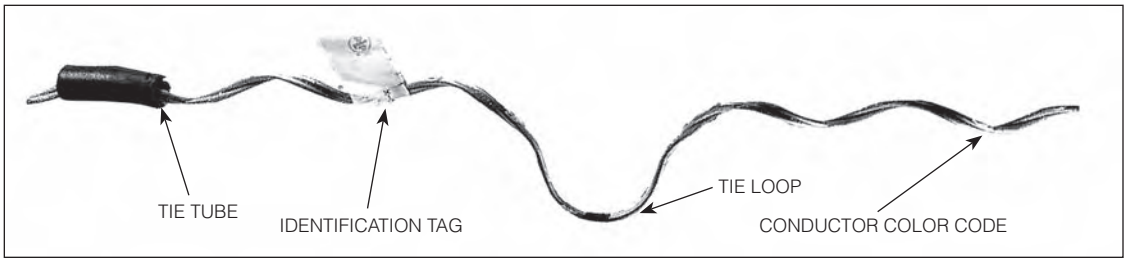
Chance	Joslyn	L.M.	Locke (G.E.)	Knox	Ohio Brass	Oliver	Utilities Serv.	ITE-Victor
C-909-0032	J-101 J-151	DE 453 DE 453 DE 453	#355	#310-W #310-D	#36361 #36368	#2000	#204 #204W #205 #205W	#2012

*Note: **ANSI 53-1 and 53-3 spool insulators** with 1-3/4" neck diameter will accept only a maximum conductor of .563" with a Spool Tie.*

EZ-WRAP® Spool Tie

FOR USE ON BARE OR PLASTIC JACKETED CONDUCTORS
AND 1-3/4" DIAMETER SPOOL INSULATORS
(ANSI CLASSES 53-1,53-2,53-3)

NOMENCLATURE



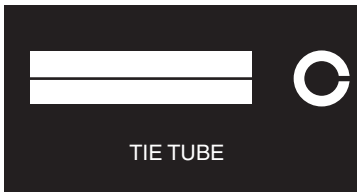
Tie Assembly: An EZ-WRAP Spool Tie Assembly consists of one metal tie component plus tie tube.

Tie Tube: Each EZ-WRAP Spool Tie is supplied with an elastomeric tie tube designed for abrasion protection with bare conductors.

Color Code: Identifies proper conductor size, corresponding to tabular information appearing in this section.

Identification Tape: Lists catalog numbers, proper insulator type, and nominal conductor sizes.

Applied Length: Describes length of tie after installation, plus assists in product identification.



GENERAL RECOMMENDATIONS

The EZ-WRAP Spool Tie is intended for use on aluminum based conductors with diameters from .190" to .968".

Interchangeable Neck-Style Insulators: EZ-WRAP Spool Ties listed in this section are designed to be applied to only ANSI Class 53-1, 53-2 and 53-3 spool insulators which have 1-3/4" neck diameters.

To insure proper fit and service life of the EZ-WRAP Spool Tie, it is recommended only spool insulators with uniform dimensions, as described by the latest (C29.3) ANSI standards, be used.

Each EZ-WRAP Spool Tie is supplied with an elastomeric tie tube designed to minimize abrasion to bare conductors and insulators. For application on jacketed conductors, the tube may be discarded. EZ-WRAP Spool Ties can also be applied to bare conductor without the tube where desired, although consideration of abrasion should be given.

The EZ-WRAP Spool Tie is designed to provide superior mechanical strength and resiliency during conductor motion and cyclic loading conditions. Longitudinal holding strengths consistently exceed the requirements of the National Electric Safety Code.

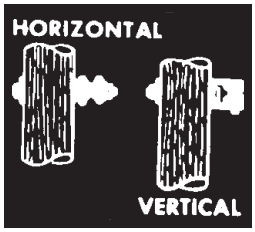
The RIV/TVI characteristics of EZ-WRAP Spool Ties are equivalent to those of a well made hand tie as originally installed. The precontoured loop and formed legs of the EZ-WRAP Spool Tie assure continued fit, which provide better RIV/TVI performance than a loosened hand tie wire.

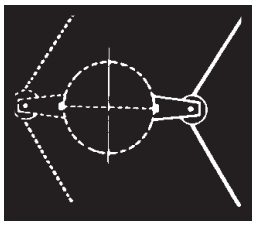
Vibration Dampers: The EZ-WRAP Spool Tie is designed to outperform the hand tie during conductor motion activity, such as aeolian vibration and galloping. However, on some lines, the use of dampers may be necessary to prevent damage. Utilities that have experienced conductor motion or expect to, should consider adding dampers. Consult PLP® for general guidelines and advice concerning conductor motion and dampers. Also consult the Motion Control section.

EZ-WRAP® Spool Tie

INSTALLATION GUIDELINES

1. **Insulator Mounting**: When installing an EZ-WRAP Spool Tie, the spool insulator may be mounted either horizontally or vertically. Whatever the construction style, the conductor should be positioned so it will bear, as much as possible, into the insulator. During vertical mounted installations, the insulator should be removed from the rack or clevis so the conductor may be positioned inside the insulator. However, when running angles turn *into* the pole, the conductor should be placed on the *outside* of the insulator so the conductor bears against the spool.





2. **Line Angles - General Guidelines:** On horizontally-mounted insulators, EZ-Wrap Spool Ties can accommodate line angles up to **10˚**. On vertically-mounted insulators, line angles up to **40˚** can be achieved.

   In all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP® for further guidance on line angle issues.

3. **Tapping:** Taps should not be made directly over the legs or loop of the EZ-WRAP Spool Tie.

4. **Conductor Compatibility:** EZ-WRAP Spool Ties should be used only on the size, type, and lay direction for which they are designed. When using conductors not mentioned in this catalog section, consult PLP.

5. During installation and at all times, care should be taken to avoid gouging or damaging the protective coating of the EZ-WRAP Spool Tie or the conductor.

6. EZ-WRAP Spool Ties should not be used as tools; i.e., come-alongs, pulling-in grips, etc.

7. Consult the EZ-WRAP Spool Tie Application Procedure for additional installation information.

8. When in doubt about usage of EZ-WRAP Spool Ties, consult your PLP representative or Preformed Line Products.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size EZ-WRAP Spool Tie before application.

5. EZ-WRAP Spool Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

EZ-WRAP® Spool Tie

For use on:
ACAR, All-Aluminum
ACSR, Aluminum Alloy
AWAC, Compacted ACSR

Spool Insulator

ANSI 53-1
ANSI 53-2
ANSI 53-3

1-3/4" Neck Diam.



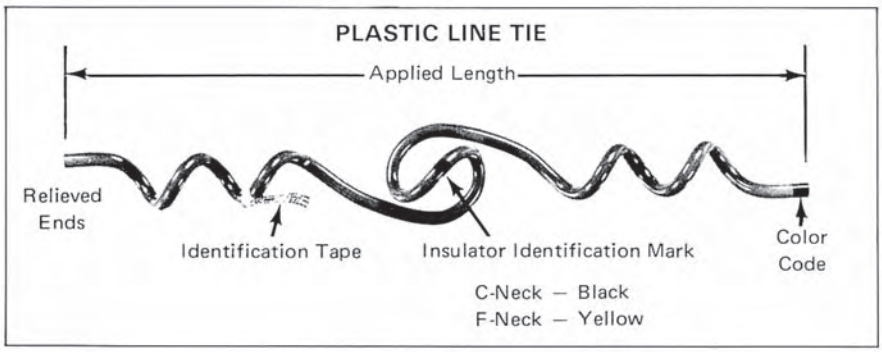
Catalog Number	Diameter Range (Inches)		Nominal Conductor Size		Units Per Carton	Wt./Lbs. Per Carton	Applied Length (Inches)	Color Code
	Min.	Max.	Bare Conductor	Plastic Jacket Conductor				
EZSP-4372	.245	.277	#4 (6/1, 7/1) #4 (7w alum. alloy)	#6 (7w, 2/64s) #6 (solid 3/64s) #6 (6/1, 2/64s)	100	13	20	Orange
EZSP-4374	.316	.357	#2 (6/1, 7/1) #2 (7w alum. alloy) #1 (6/1)	#4 (7w, 3/64s) #4 (6/1, 7/1, 3/64s)	100	14	23	Red
EZSP-4375	.358	.405	1/0 (7w all alum.) 1/0 (6/1) 1/0 (7w alum. alloy)	#3 (7w, 4/64s) #2 (7w, 3/64s) #4 (7w, 5/64s)	100	17	20	Yellow
EZSP-4376	.406	.459	2/0 (7w all alum.) 2/0 (6/1) 2/0 (7w alum. alloy)	#2 (6/1, 3/64s) #2 (7w, 4/64s) #1 (7w, 4/64s)	100	21	22	Blue
EZSP-4377	.460	.520	3/0 (7w all alum.) 3/0 (6/1) 3/0 (7w alum. alloy)	#4 (7w, 8/64s) #1 (6/1, 4/64s) #1 (7w-19w, 5/64s) 1/0 (7w, 4/64s)	100	21	24	Orange
EZSP-4378	.521	.588	4/0 (7w all alum.) 4/0 (6/1) 4/0 (7w alum. alloy)	1/0 (6/1, 4/64s) 1/0 (7w, 5/64s) 2/0 (7w, 4/64s) 1/0 (6/1, 5/64s)	100	27	25	Red
EZSP-4379	.589	.665	266.8 (37w all alum.) 266.8 (18/1) 336.4 (19w all alum.)	3/0 (7w-19w, 4/64s) 3/0 (6/1, 4/64s) 4/0 (7w-19w, 4/64s) 3/0 (6/1, 5/64s)	100	28	28	Purple
EZSP-4380	.666	.755	336.4 (18/1) 397.5 (19w all alum.) 400 (19w, 37w all alum.)	4/0 (7w, 5/64s) 3/0 (6/1, 6/64s) 4/0 (6/1, 5/64s) 266.8 (19w, 5/64s)	100	30	31	Brown
EZSP-4381	.756	.858	477 (19w, 37w all alum.) 477 (18/1, 24/7)	266.8 (18/1, 5/64s) 336.4 (19w, 4/64s) 336.4 (37w, 6/64s)	100	30	32	Red
EZSP-4382	.859	.968	556.5 (19w all alum.) 636 (18/1) 700 (37w, 61w all alum.)	350 (37w, 6/64s) 336.4 (19w, 8/64s) 450 (37w, 5/64s) 477 (37w, 5/64s)	100	40	33	Blue

EXPLANATORY NOTES:

(1) "Diameter Range" indicates the size of conductors that utilize the same tie.
(2) "Nominal Conductor Size" indicates only a few conductors that have outside diameters within the ranges listed.
(3) Since all spool insulators do not have neck dimensions suitable for application of the EZ-WRAP Spool Tie, consult the Insulator Manufacturer's List on the last page of the Spool Tie Section.
(4) AWAC is a registered trademark of the Copperweld Co.

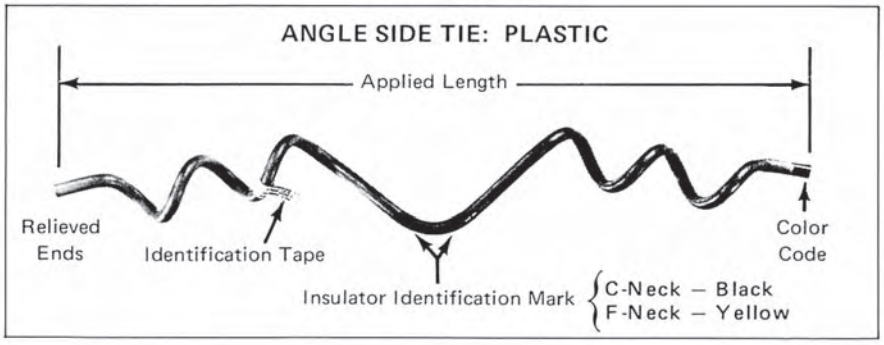
Plastic Ties

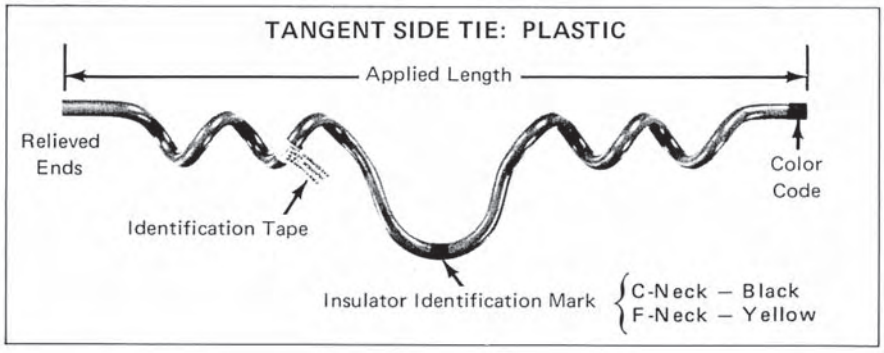
NOMENCLATURE



The Plastic Line Tie is used with pin-type or post-type insulators on crossarms, or with pole-top mounted insulators on armless construction. Running angles of up to 15˚ are recommended.

The Angle Side Tie is used with pin-type or post-type insulators on crossarms, or with pole-top mounted insulators and side-mounted insulators on armless construction for turning angles from 11˚ to 40˚.





The Tangent Side Tie is used with side-mounted insulators on armless construction. Running angles of up to 15˚ are recommended.

Relieved Ends: Assist in hot stick application.

Color Code and Applied Length: Assists in identification of conductor size, corresponding to tabular information appearing on catalog pages.

Insulator Identification Mark: Identifies the correct insulator head-style by colors corresponding to information on catalog pages.

Identification Tape: Shows catalog number, insulator head-style, and range of conductor diameters.

Plastic Ties

GENERAL RECOMMENDATIONS

INTENDED USE: Plastic Line Ties and Plastic Side Ties are intended for use with plastic jacketed conductors. **Consult PLP® about voltage limitations with Plastic Ties.**

Caution: Plastic Line Ties and Plastic Side Ties are intended for use on lines which have been designed electrically for jacketed conductors and insulated ties. Under certain field conditions, burning and tracking may occur on the tie; therefore, the product must be evaluated by the intended user to determine if it is suitable for use in a particular area.

Mechanical: Testing has shown Plastic Line Ties and Plastic Side Ties will develop unbalanced and lift-off loads equivalent to, or in excess of, a well-made hand tie over jacketed conductor.

Caution: The performance of plastic ties is significantly influenced by the line design and the environmental conditions; consequently, under certain situations tracking can occur. The individual utility must determine if the product is safe for their intended use.

Insulators: To insure proper fit, it is recommended that only Interchangeable Headstyle Insulators having neck diameters corresponding to 2-1/4" C-Neck and 2-7/8" F-Neck be used.

Material: A grey polyvinyl chloride was selected because of its tensile strength, impact strength, flexural strength, low moisture absorption and self-extinguishing properties.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size Plastic Tie before application.

5. Plastic Ties are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Plastic Line Tie

For use on:
Plastic Jacketed Conductor

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin

2-1/4" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	DIAMETER RANGE (INCHES) MAX.	NOMINAL CONDUCTOR SIZE	APPLIED LENGTH (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	INSUL. IDENT. MARK	COLOR CODE
TTC-1104	.296	.400	#4, 6/1, 2/64s	19	50	26	Black	White
TTC-1100	.401	.540	#2, 6/1, 3/64s #4, 7W, 8/64s	18	50	26	Black	Green
TTC-1101	.541	.730	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	19	50	28	Black	Blue
TTC-1102	.731	.920	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	20	50	31	Black	Orange
TTC-1103	.921	1.100	336.4, 18/1, 10/64s 447, 19W, 8/64s	21	50	34	Black	Red
TTC-1105	1.101	1.300	477, 37W, 10/64s 795, 61W, 6/64s	23	50	38	Black	Black

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For quantities less than 25 pieces, consult PLP.

Plastic Line Tie

For use on:
Plastic Jacketed Conductor

F-Neck Interchangeable Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-7/8" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	APPLIED LENGTH (INCHES)	UNITS PER CARTON	WT./LBS.	INSUL. IDENT. MARK	COLOR CODE
TTF-1205	.296	.400	#4, 6/1, 2/64s	20	50	23	Yellow	White
TTF-1200	.401	.540	#2, 6/1, 3/64s #4, 7W, 8/64s	19	50	28	Yellow	Green
TTF-1201	.541	.730	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	19	50	30	Yellow	Blue
TTF-1202	.731	.920	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	21	50	32	Yellow	Orange
TTF-1203	.921	1.100	336.4, 18/1, 10/64s 447, 19W, 8/64s	22	50	35	Yellow	Red
TTF-1204	1.101	1.300	477, 37W, 10/64s 397.5, 19W, 12/64s	24	50	38	Yellow	Black

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For quantities less than 25 pieces, consult PLP.

Angle Side Tie: Plastic

For use on:
Plastic Jacketed Conductor

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin
ANSI 55-3 Pin

2-1/4" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	APPLIED LENGTH (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	INSUL. IDENT. MARK	COLOR CODE
SSC-2105	.296	.400	#4, 6/1, 2/64s	18	50	22	Black	White
SSC-2100	.401	.540	#2, 6/1, 3/64s #4, 7W, 8/64s	17	50	21	Black	Green
SSC-2101	.541	.730	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	17	50	22	Black	Blue
SSC-2102	.731	.920	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	19	50	24	Black	Orange
SSC-2103	.921	1.100	336.4, 18/1, 10/64s 447, 19W, 8/64s	20	50	27	Black	Red
SSC-2104	1.101	1.300	477, 37W, 10/64s 397.5, 19W, 12/64s	22	50	30	Black	Black

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For quantities less than 25 pieces, consult PLP.

Angle Side Tie: Plastic

For use on:
Plastic Jacketed Conductor

F-Neck Interchangeable Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-7/8" Neck Diameter



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	APPLIED LENGTH (INCHES)	UNITS PER CARTON	WT./LBS.	INSUL. IDENT. MARK	COLOR CODE
	MIN.	MAX.						
SSF-2205	.296	.400	#4, 6/1, 2/64s	18	50	22	Yellow	White
SSF-2200	.401	.540	#2, 6/1, 3/64s #4, 7W, 8/64s	17	50	22	Yellow	Green
SSF-2201	.541	.730	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	17	50	23	Yellow	Blue
SSF-2202	.731	.920	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	19	50	25	Yellow	Orange
SSF-2203	.921	1.100	336.4, 18/1, 10/64s 447, 19W, 8/64s	20	50	27	Yellow	Red
SSF-2204	1.101	1.300	477, 37W, 10/64s 397.5, 19W, 12/64s	22	50	30	Yellow	Black

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For quantities less than 25 pieces, consult PLP.

Tangent Side Tie: Plastic

For use on:
Plastic Jacketed Conductor

C-Neck Interchangeable Headstyle Insulators

ANSI 55-2 Pin **2-1/4"**
ANSI 55-3 Pin **Neck Diameter**



CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	APPLIED LENGTH (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	INSUL. IDENT. MARK	COLOR CODE
SSC-2150	.296	.400	#4, 6/1, 2/64s	18	50	22	Black	White
SSC-2151	.401	.540	#2, 6/1, 3/64s #4, 7W, 8/64s	16	50	21	Black	Green
SSC-2152	.541	.730	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	16	50	23	Black	Blue
SSC-2153	.731	.920	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	18	50	24	Black	Orange
SSC-2154	.921	1.100	336.4, 18/1, 10/64s 447, 19W, 8/64s	19	50	27	Black	Red
SSC-2155	1.101	1.300	477, 37W, 10/64s 397.5, 19W, 12/64s	21	50	30	Black	Black

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For quantities less than 25 pieces, consult PLP.

Tangent Side Tie: Plastic

For use on:
Plastic Jacketed Conductor

F-Neck Interchangeable Headstyle Insulators

ANSI 55-4 Pin
ANSI 55-5 Pin
ANSI 57-1 Post
ANSI 57-2 Post
ANSI 57-3 Post

2-7/8" Neck Diameter



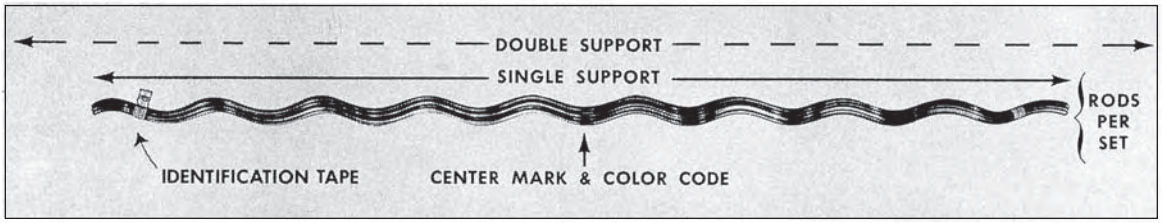
CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	APPLIED LENGTH (INCHES)	UNITS PER CARTON	WT./LBS.	INSUL. IDENT. MARK	COLOR CODE
SSF-2251	.401	.540	#2, 6/1, 3/64s #4, 7W, 8/64s	17	50	24	Yellow	Green
SSF-2252	.541	.730	1/0, 6/1, 10/64s 3/0, 6/1, 4/64s	17	50	24	Yellow	Blue
SSF-2253	.731	.920	4/0, 6/1, 10/64s 336.4, 18/1, 6/64s	19	50	25	Yellow	Orange
SSF-2254	.921	1.100	336.4, 18/1, 10/64s 447, 19W, 8/64s	20	50	29	Yellow	Red
SSF-2255	1.101	1.300	477, 37W, 10/64s 397.5, 19W, 12/64s	22	50	30	Yellow	Black

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) For quantities less than 25 pieces, consult PLP.

Line Guards

NOMENCLATURE



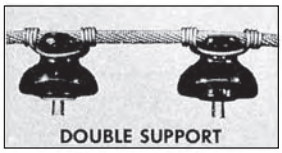
Single Support and Double Support Length: Identified by "S" and "D" appearing in the length column on the catalog page. Should the maximum distance between tied supports exceed 12 inches, consult the Factory.

Rod Diameter: Added to conductor O.D., assists in arriving at applied overall diameter.

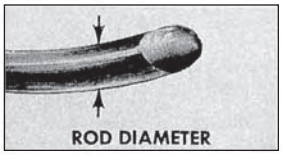
Rods Per Set: Indicates the proper number of rods for each application.

Center Mark: Establishes recommended alignment of rods during application.

Color Code and Length: Assists in identification of conductor size, corresponding to tabular information appearing on catalog page.



Identification Tape: Shows catalog number, nominal sizes.



GENERAL RECOMMENDATIONS

PROTECTION. PREFORMED™ *Line Guards* are intended to protect against abrasion and arc-over, and to provide limited repair. The degree of protection needed on a specific line depends upon a number of factors such as line design, temperature, tension, exposure to wind flow, and vibration history on similar construction in the same area. As a general guide, the following recommendations may be adopted to the specific conditions.

Line Guards are recommended as minimum protection for hand-tied spans.

***PLP® Factory Formed Ties* are recommended as improvements over *Line Guards* secured with hand tie wire. They protect against chafing or wear caused by wind sway or unbalanced loading. *PLP Ties* also provide a stronger material and greater uniformity than hand tie wire.**

Armor Rods are recommended as minimum protection for clamp-type supports or suspensions. The use of supplemental damping devices, such as Spiral Vibration Damper, should be considered when conductor vibration is present or expected.

LINE GUARDS RESTORATIVE-REPAIR. *Line Guards* may be used as patch rods designed to restore full conductance and strength to ACSR and aluminum conductors where damage is located outside the support area and does not exceed 25 percent of the outer strand layer. Consult Preformed Line Products for repair capability of specific strandings.

NOTE: When Line Guards are used to repair damaged aluminum-based conductors, the following application steps will produce optimum electrical repair:

Step 1: Thoroughly wire-brush damaged conductor for the full length of the Line Guard to be applied.

Step 2: Apply a gritted inhibitor to the full length of this area before applying the Line Guard.

TAPPING. *Line Guards* may be used as tap armor to protect conductors from wear and flash-over damage under hot line taps. Where it is known that tapping clamps will be installed over *Line Guards*, it is recommended that the conductor be thoroughly wire brushed clean, then an inhibitor be applied.

APPLICATION-INSPECTION. After application of the correct number of rods per set, a slight gap between rods should be present. Consult the General Information Section for detailed explanation.

Line Guards

GENERAL RECOMMENDATIONS CONTD.

Apply no more than one-half the number of rods per set at a time on smaller sizes. On conductors 4/0 and larger, do not attempt to apply more than 3 rods at a time. The alignment of the ends of the rods should be maintained within 2 inches.

Standard Line Guards are intended for non EHV applications (230Kv and lower). Contact PLP for Line Guards with Parrot-Bill® rod ends for EHV applications.

O.D. CALCULATIONS

Applied overall diameter computed as follows:

The rod diameter can be obtained from the catalog page tables.
Conductor/Strand O.D. can be found in the Conductor Chart, General Information Section.

Rod Diam.,	.102" x 2 = .204"
Conductor Diam.	+ .188"
Total Applied O.D.	.392"

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

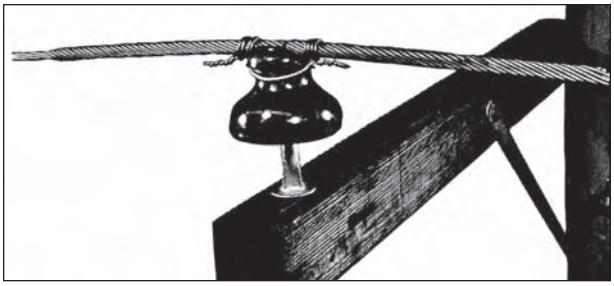
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ Line Guard before application.

5. PREFORMED Line Guards are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Line Guards: Aluminum

For use on:
ACSR, Compacted ACSR,
Aluminum Alloy
All-Aluminum, AWAC®
Compacted All-Aluminum, ACAR



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS	LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	COLOR CODE
	MIN.	MAX.							
MG-0122 MG-0305	.182	.193	#6, 7W All-Alum.	100	12 19	17(S) 29(D)	.102	7	Purple
MG-0123 MG-0306	.194	.207	#6, 6/1 #6, 7W Alum. Alloy	100	12 19	17(S) 29(D)	.102	7	Blue
MG-0125 MG-0308	.220	.228	#5, 6/1 #5, 7W Alum. Alloy	100	16 26	17(S) 29(D)	.121	7	White
MG-0126 MG-0309	.229	.243	#4, 7W All-Alum. #4, 6/1, 7/1 Comp.	100	20 32	19(S) 31(D)	.121	8	Brown
MG-0127 MG-0310	.244	.259	#4, 6/1, 7/1 #4, 7W Alum. Alloy	100	20 32	19(S) 31(D)	.121	8	Orange
MG-0128 MG-0311	.260	.273	#3, 7W All-Alum. #2, 7W Comp.	100	20 32	19(S) 31(D)	.121	8	Green
MG-0129 MG-0312	.274	.289	#3, 7W Alum. Alloy	100	25 38	21(S) 33(D)	.121	9	Yellow
MG-0130 MG-0313	.290	.308	#2, 7W All-Alum.	100	25 38	21(S) 33(D)	.121	9	Purple
MG-0131 MG-0314	.309	.326	#2, 6/1, 7/1 #2, 7W Alum. Alloy	100	25 38	21(S) 33(D)	.121	9	Red
MG-0132 MG-0315	.327	.346	#1, 7W All-Alum. 1/0, 7W-19W Comp.	100	28 42	21(S) 33(D)	.121	10	Blue
MG-0133 MG-0316	.347	.366	#1, 6/1 1/0, 6/1 Comp.	100	30 44	23(S) 35(D)	.121	10	Green
MG-0134 MG-0317	.367	.389	1/0, 7W All-Alum. 2/0, 7W-19W Comp.	100	32 46	23(S) 35(D)	.121	11	Black
MG-0135 MG-0318	.390	.413	1/0, 6/1 1/0, 7W Alum. Alloy	100	35 50	25(S) 37(D)	.121	11	Yellow
MG-0136 MG-0319	.414	.436	2/0, 7W All-Alum. 3/0, 7W-19W Comp.	50	20 29	25(S) 37(D)	.121	12	Brown
MG-0137 MG-0320	.437	.463	2/0, 6/1, 7/1 2/0, 7W Alum. Alloy	50	23 32	27(S) 39(D)	.121	13	Blue
MG-0138 MG-0321	.464	.490	3/0, 7W-19W All-Alum.	50	24 32	27(S) 39(D)	.121	13	Green
MG-0139 MG-0322	.491	.521	3/0, 6/1 3/0, 7W Alum. Alloy	50	26 36	29(S) 41(D)	.121	14	Orange
MG-0140 MG-0323	.522	.551	4/0, 7W-19W All-Alum.	50	26 36	29(S) 41(D)	.121	14	Black
MG-0141 MG-0324	.552	.585	4/0, 6/1 4/0, 7W Alum. Alloy	50	30 40	31(S) 43(D)	.121	15	Red
MG-0142 MG-0325	.586	.606	266.8, 7W-19W, 37W All-Alum.	50	40 54	31(S) 43(D)	.146	14	Black

(Continued on next page)

Right-hand lay standard
EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) Single Support Length (S) and Double Support Length (D) are described on the first page, this section.
(3) AWAC is a registered trademark of the Copperweld Co.

Line Guards: Aluminum

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT/LBS PER CARTON	LENGTH (INCHES)	ROD DIAMETER (INCHES)	RODS PER SET	COLOR CODE
	MIN.	MAX.							
MG-0143 MG-0326	.607	.630	266.8, 18/1 300, 19W-37 All-Alum.	50	42 57	33(S) 45(D)	.146	14	White
MG-0144 MG-0327	.631	.655	266.8, 19W Alum. Alloy (6201)	50	42 57	33(S) 45(D)	.146	14	Yellow
MG-0145 MG-0328	.656	.679	336.4, 19W-37W All-Alum.	50	48 62	35(S) 47(D)	.146	15	Brown
MG-0146 MG-0329	.680	.703	336.4, 18/1 350, 37W All-Alum.	50	48 62	35(S) 47(D)	.146	15	Blue
MG-0147 MG-0330	.704	.740	336.4, 19W Alum. Alloy (6201)	50	54 70	37(S) 49(D)	.146	16	Green
MG-0148 MG-0331	.741	.792	397.5, 18/1 26/7, 24/7	50	60 77	39(S) 51(D)	.146	17	Orange
MG-0149 MG-0332	.793	.840	477, 18/1 477, 19W-37W All-Alum.	50	64 82	39(S) 51(D)	.146	18	Purple
MG-0150 MG-0333	.841	.898	477, 24/7, 26/7 30/7	25	36 45	41(S) 53(D)	.146	19	Blue
MG-0151 MG-0334	.899	.954	556.5, 24/7, 26/7 30/7	25	46 58	43(S) 55(D)	.167	18	Green
MG-0152 MG-0335	.955	.986	605, 26/7 636, 24/7	25	54 68	45(S) 57(D)	.182	17	White
MG-0153 MG-0336	.987	1.016	636, 26/7 666.6, 24/7	25	58 72	45(S) 57(D)	.182	18	Yellow
MG-0154 MG-0337	1.017	1.064	715.5, 24/7 26/7	25	60 74	47(S) 59(D)	.182	18	Brown
MG-0155 MG-0338	1.065	1.098	874.5, 37W-61W All-Alum.	15	44 55	49(S) 61(D)	.204	17	Green
MG-0156 MG-0339	1.099	1.153	795, 26/7 30/19	15	58 72	49(S) 61(D)	.250	15	Orange
MG-0157 MG-0340	1.154	1.208	954, 45/7 54/7	15	62 75	51(S) 63(D)	.250	15	Purple
MG-0158 MG-0341	1.209	1.268	1192.5, 61W All-Alum.	15	68 82	53(S) 65(D)	.250	16	Black
MG-0159 MG-0342	1.269	1.327	1192.5, 45/7	10	48 58	53(S) 65(D)	.250	17	White
MG-0160 MG-0343	1.328	1.390	1351.5, 61W All-Alum.	10	50 60	55(S) 67(D)	.250	17	Yellow
MG-0161 MG-0344	1.391	1.440	1431, 45/7	5	36 44	57(S) 69(D)	.310	15	Brown
MG-0162 MG-0345	1.441	1.508	1431, 54/19	5	40 48	59(S) 71(D)	.310	16	Blue

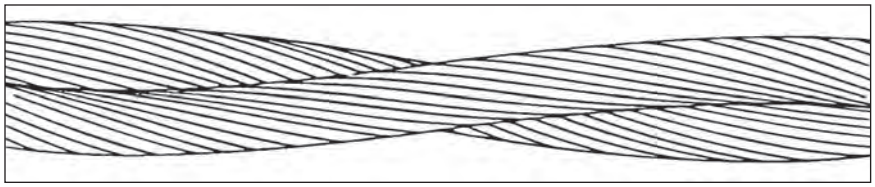
Right-hand lay standard
EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range.
(2) Single Support Length (S) and Double Support Length (D) are described on the first page, this section.
(3) AWAC is a registered trademark of the Copperweld Co.

Helical Ties for T-2 Conductor

CONSTRUCTION

T-2 conductor consists of two identical conductors twisted together in a left-hand lay direction at an approximate nine foot pitch length. Generally the conductors used are stanadrd ACSR, AAC or AAAC construction but can be conductors of any configuration.



THEORY

The spiral shape of the two conductors twisted together disrupts the forces created by the steady crosswinds that can cause cable motion. The forces are disrupted by the continuously changing profile exposed to the wind. This spiral shape, together with less torsional stiffness and varying bending stiffness also reduces or can minimize cable galloping due to ice and wind loads.

APPLICATION

T-2 conductor can be used in regions that are subject to galloping due to wind and ice. T-2 conductor is also designed to reduce the requirement for vibration protection when installed within accepted tension limits.

Helical Ties for T-2 Conductor

GENERAL RECOMMENDATIONS

T-2 conductor is designed to prevent "typical" conductor motion activity like aeolian vibration and galloping, however, the non-circular configuration and unusual cable movement of T-2 conductors requires special consideration of tie devices. When choosing products for T-2 conductor, it is important not to mistake standard concentric conductor products listed in the catalog for similarly name T-2 conductor. The T-2 conductor equivalents require substantially larger sized products for similarly named conductor sizes. If a desired product is not listed in the product table in this section, contact Preformed Line Products to determine if the product has been reviewed. In many cases, Preformed Line Products can recommend products for a particular installation.

INTENDED USE. Manufactured formed wire ties secure conductors in the grooves of interchangeable headstyle insulators.

PREFORMED™ ties provide an improved method of securing conductor compared to clamp-top or hand-ties over Armor Rods.

DEAD-ENDING. T-2 conductor can be terminated in the same manner as a single conductor except both of the elements of the T-2 conductor requires its own dead-end device. The two dead-end devices should be terminated on separate hardware on the structure.

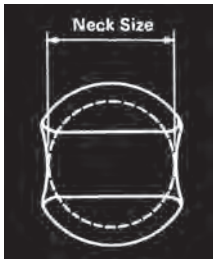
CONDUCTOR REPAIR. When repairing T-2 conductor, the individual elements of the span must be analyzed and repaired separately. To accomplish this, it is important to know the construction of the T-2 conductor so the correct repair components can be chosen.

ARMOR RODS/ARMOR-GRIP® SUSPENSION/SUPPORT. When using Armor Rods or ARMOR-GRIP Suspensions or Supports, the introduction of a third piece of conductor is advisable. This short section of conductor is equal to one of the conductor elements of the T-2 conductor. The additional piece of conductor is placed in the interstices of the two conductor elements of the T-2 conductor assembly in order to create an assembly that is closer to the shape of the circle. The appropriately sized Armor Rod or ARMOR-GRIP Suspensions or Supports can then be easily installed over this new assembly. The additional piece of conductor should be held in place by a few pieces of tape prior to the installation of the Armor Rods. For specific information on this installation including the length of the additional piece of conductor and the appropriate Armor Rods or ARMOR-GRIP Suspension or Supports catalog number, contact Preformed Line Products.

INTERCHANGEABLE HEADSTYLE INSULATOR. To insure proper fit and service life, it is recommended that only insulators corresponding to C-Neck, F-Neck, J-Neck, K-Neck, or spool insulators be used. These neck diameter and groove height dimensions appear in ANSI standards.

Over 100 individual insulators can be identified for neck size. The method of identifying neck size is through markings manufacturers put on their insulators.

Consult Preformed Line Products for engineering recommendations on non-interchangeable headstyle insulators. A sample of the insulator in question is desirable.



SAFETY CONSIDERATIONS

1. These products are intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THESE PRODUCTS UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED products before application.
5. PREFORMED products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Helical Ties for T-2 Conductor

PREFORMED™ TIES FOR T-2 CONDUCTOR



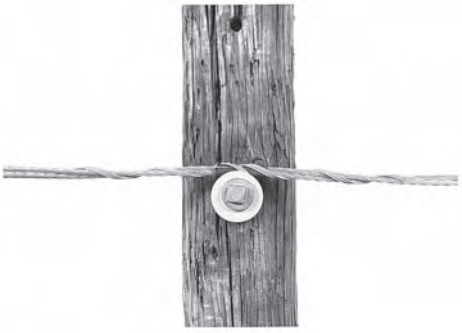
WRAPLOCK® Tie



Distribution Tie



EZ-WRAP® Spool Tie



Spool Tie



Double Support Tie



Side Tie

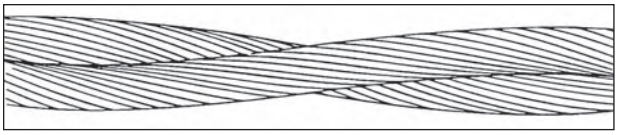


Double Side Tie

BENEFITS:
- Elastomeric tubes/pads cushion to protect T-2 conductor.
- No special equipment or installation techniques required.
- Reduces time required to tie in T-2 conductor
- Minimizes possibility of mistakes during tie installations.
- Complete line of ties readily available for popular T-2 conductors and insulators.
- Over 15 years successful experience with support devices on T-2 conductor
- Superior ability to hold T-2 conductor to insulator
- Meets NESC longitudinal holding requirement
- Provides resiliency under all potential motion conditions
- Provides stability during twisting motion

Helical Ties for T-2 Conductor

For use on:
ACSR, Compacted ACSR, Aluminum Alloy, All-Aluminum, AWAC®, Compacted All-Aluminum



T-2 CONDUCTORS	DISTRIBUTION TIE	WRAPLOCK TIE	SPOOL TIE	EZ WRAP SPOOL TIE	DOUBLE SUPPORT TIE	DOUBLE SIDE TIE	SIDE TIE
2 x #4 (6/1) ACSR (7/1) ACSR (7/W) AAAC	UTC-1106 UTF-1206 UTJ-1306 UTK-1606	WTC-0112 WTF-0212 WTJ-0412	SPL-1356-P	EZSP-4376	DST-0154 (C&F) DST-0354 (J)	DBST-1104 (C&F) DBST-1304 (J)	STC-1256-P STF-1156-P STJ-1506-P
2 x #3 (6/1) ACSR	UTC-1107 UTF-1207 UTJ-1307 UTK-1607	WTC-0114 WTF-0214 WTJ-0414	SPL-1357-P	EZSP-4376	DST-0155 (C&F) DST-0355 (J)	DBST-1105 (C&F) DBST-1305 (J)	STC-1257-P STF-1157-P STJ-1507-P
2 x #2 (6/1) ACSR (7/1) ACSR (7/W) AAAC	UTC-1108 UTF-1208 UTJ-1308 UTK-1608	WTC-0116 WTF-0216 WTJ-0416	SPL-1358-P	EZSP-4377	DST-0156 (C&F) DST-0356 (J)	DBST-1106 (C&F) DBST-1306 (J)	STC-1258-P STF-1158-P STJ-1508-P
2 x 1/0 (7/W) AAAC	UTC-1109 UTF-1209 UTJ-1309 UTK-1609	WTC-0118 WTF-0218 WTJ-0418	SPL-1359-P	EZSP-4378	DST-0157 (C&F) DST-0357 (J)	DBST-1107 (C&F) DBST-1307 (J)	STC-1259-P STF-1159-P STJ-1509-P
2 x 1/0 (6/1) ACSR (7/W) AAAC	UTC-1110 UTF-1210 UTJ-1310 UTK-1610	WTC-0119 WTF-0219 WTJ-0419	SPL-1360-P	EZSP-4379	DST-0158 (C&F) DST-0358 (J)	DBST-1108 (C&F) DBST-1308 (J)	STC-1260-P STF-1160-P STJ-1510-P
2 x 2/0 (6/1) ACSR (7/W) AAAC	UTC-1111 UTF-1211 UTJ-1311 UTK-1611	WTC-0122 WTF-0222 WTJ-0422	SPL-1361-P	EZSP-4380	DST-0159 (C&F) DST-0359 (J)	DBST-1109 (C&F) DBST-1309 (J)	STC-1261-P STF-1161-P STJ-1511-P
2 x 3/0 (6/1) ACSR (7/W) AAAC	UTC-1112 UTF-1212 UTJ-1312 UTK-1612	WTC-0124 WTF-0224 WTJ-0424	SPL-1362-P	EZSP-4381	DST-0160 (C&F) DST-0360 (J)	DBST-1110 (C&F) DBST-1310 (J)	STC-1262-P STF-1162-P STJ-1512-P
2 x 4/0 (6/1) ACSR	UTC-1112 UTF-1212 UTJ-1312 UTK-1612	WTC-0125 WTF-0225 WTJ-0425	SPL-1362-P	EZSP-4382	DST-0160 (C&F) DST-0360 (J)	DBST-1110 (C&F) DBST-1310 (J)	STC-1263-P STF-1163-P STJ-1513-P
2 x 266.8 (18/1) ACSR (26/7) ACSR	UTC-1113 UTF-1213 UTJ-1313 UTK-1613	WTC-0126 WTF-0226 WTJ-0426	*	*	DST-0161 (C&F) DST-0361 (J)	DBST-1111 (C&F) DBST-1311 (J)	STC-1263-P STF-1163-P STJ-1513-P
2 x 336.4 (18/1) ACSR	UTC-1113 UTF-1213 UTJ-1313 UTK-1613	WTC-0127 WTF-0227 WTJ-0427	*	*	DST-0161 (C&F) DST-0361 (J)	DBST-1111 (C&F) DBST-1311 (J)	STC-1264-P STF-1164-P STJ-1514-P
2 x 336.4 (26/7) ACSR 2 x 336.4 (19W) AAC	UTC-1114 UTF-1214 UTJ-1314 UTK-1614	WTC-0128 WTF-0228 WTJ-0428	*	*	DST-0161 (C&F) DST-0361 (J)	DBST-1112 (C&F) DBST-1312 (J)	STC-1264-P STF-1164-P STJ-1514-P

*Insulator groove not large enough for these T-2 sizes.

EXPLANATORY NOTES:

(1) User should make sure insulator groove radius is large enough for T-2 conductor and PLP tie with pad.
(2) This table represents application of the PLP ties on T-2 conductor only.
(3) Consideration should be made of the physical fit of the actual T-2 conductor plus PLP tie on a specific insulator because variances in individual insulators can affect application.
  a. Only insulators with ANSI accepted dimensions should be used with PLP ties.
  b. PLP suggests application trails be conducted on actual T-2 conductor, PLP ties and insulators prior to installation.
(4) Consult PLP for application with Armor Rod, ARMOR-GRIP® Suspensions or Supports, or T-2 conductor not shown.
(5) Information is effective March 1, 1999 and supersedes prior information.

Oval Conductor Products

CONSTRUCTION

Oval Conductor is composed of a combination of round and shaped wires of varying diameters and cross sections. The wires are stranded in such a way to give the cable a spiraling elliptical shape.



Courtesy of Southwire Company

THEORY

The spiraling elliptical shape of the Oval Conductor disrupts the forces created by steady cross winds which cause cable vibration. The spiral shape, together with less torsional stiffness and varying bending stiffness can also reduce cable galloping due to combined ice and wind loads.

APPLICATION

Oval conductor can be used in overhead applications that are primarily subject to galloping due to wind and ice. Oval conductor is designed to reduce the requirement for vibration protection when installed within accepted tension limits.

GENERAL RECOMMENDATIONS

When choosing products for Oval Conductor, it is important not to mistake products listed in the catalog for standard concentric conductors for use on Oval Conductor. The oval equivalents require different sized products in many cases. Always contact PLP to obtain a complete list of recommended products for a particular size of Oval Conductor.

INTENDED USE. Due to varying diameters and shapes of strands of the Oval Conductor, PREFORMED™ tie products and dead-end products are ideal because they minimize compression loads and distribute axial tension loads on the cable.

SUB TRANSMISSION/TRANSMISSION. The innovative profile of the Oval Conductor presents a unique set of circumstances when utilizing standard bolted clamps. The use of PREFORMED Armor Rods will reduce bending stresses and distribute compressive stresses on the cable.

It is important to follow all recommendations for the specific product to be used on the Oval Conductor. These recommendations can be found at the beginning of the catalog section that covers that product.

PRODUCT LIST. The following products have been reviewed for application on the Oval Conductor:

- ARMOR-GRIP® Suspension family of products
- Repair/Protective products
  - Armor Rods
  - Line Guards
  - Conductor Splices
  - Full-Tension Splices
- Tie products
  - WRAPLOCK® Tie
  - Distribution Tie
  - Double Support Tie
  - EZ-WRAP™ Twin Tie
  - Side Tie
  - EZ-WRAP™ Side Tie
  - Double Side Tie
  - Spool Tie
  - EZ-WRAP™ Spool Tie
- Dead-end products
  - Distribution-Grip dead-ends
  - Service Grip dead-ends
  - Overhead dead-ends
  - O-Grip dead-ends
  - Slack Span dead-ends

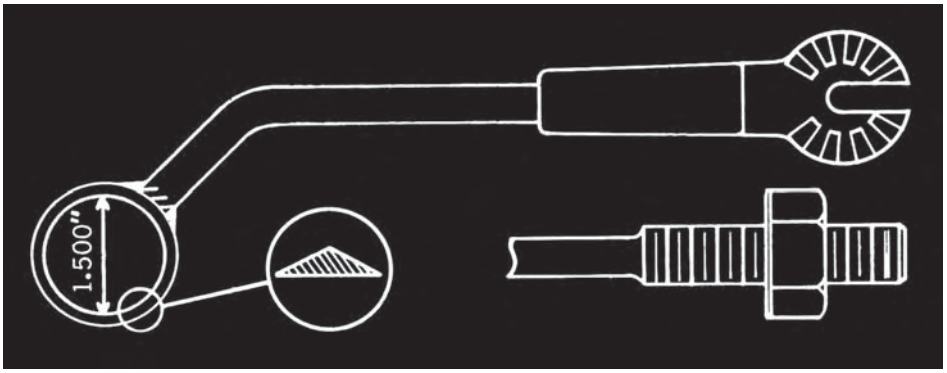
This is **not** a complete list of products offered by Preformed Line Products. Any product not listed can be reviewed upon request. Please contact PLP for specific recommendations for your application.

NOTE: Oval Conductor descriptions, diagrams, and explanations courtesy of Southwire Company.

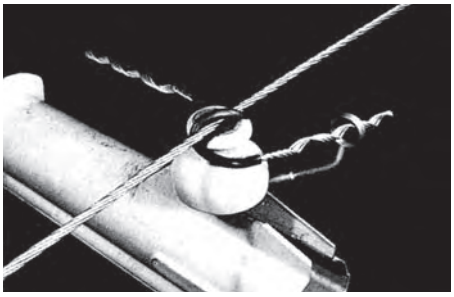
Applicator Ring

The PREFORMED™ Applicator Ring is a PLP®-designed tool which aids the lineman in making safe, fast, distortion-free applications of helically-formed products on energized conductors. The specially-beveled ring permits easy encirclement of the helical leg, and facilitates positioning and removal of the product. The angle-curved neck of the Applicator Ring allows the tool to be safely and easily maneuvered around conductors.

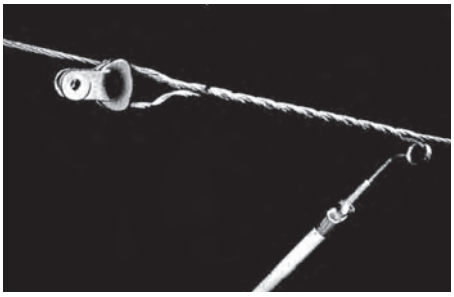
The Applicator Ring is available with a threaded base, or with a universal base, to secure it to either style of hot stick.



CATALOG NUMBER	DESCRIPTION
SH-0000	Applicator Ring-Threaded Base
SH-0001	Applicator Ring-Universal Base



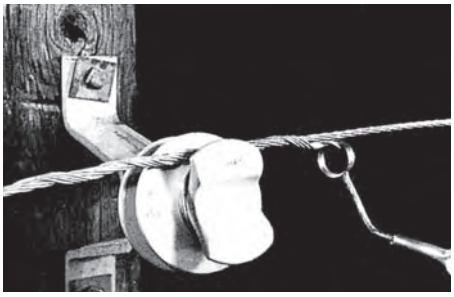
WRAPLOCK® TIE



DISTRIBUTION–GRIP DEAD-END



ARMOR RODS



SIDE TIE

PREFORMED LINE PRODUCTS

Section 10 – Distribution (Overhead): Conductor Dead-ends

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Thimble Clevis for Conductor Dead-ends

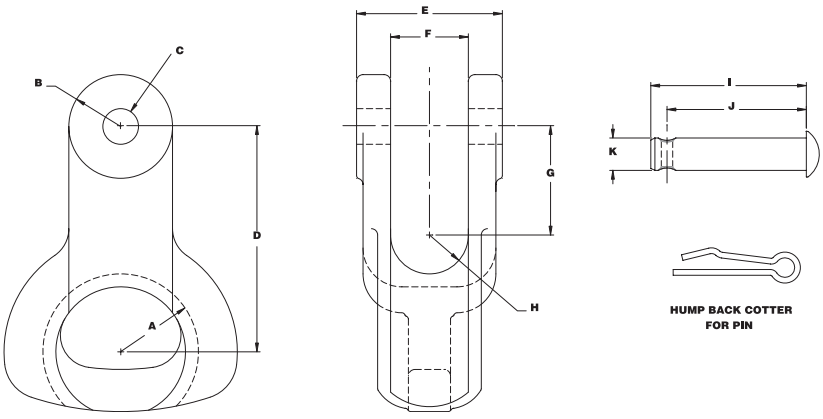
GENERAL RECOMMENDATIONS

Thimble Clevises are used in conjunction with PREFORMED Dead-ends on suspension-type or Dead-end insulators. The thimble is intended to provide a smooth internal contour to prevent stress concentration within the loop of a PREFORMED Dead-end. The Clevis includes a steel pin which links it through the eye of an insulator and secures it with a humpbacked cotter key.

If removal or replacement of an insulator, or similar maintenance, is required, only the cotter key and steel pin need to be removed to release the clevis.

The TC-17 Thimble Clevis can be used with all but the largest Distribution Grips, all Overhead Dead-ends and Coated Dead-ends for conductors up to 0.783". The balance of the Dead-ends and Dead-ends for optical cable can be covered by the other listed Thimble Clevises. Refer to the tables entitled "Recommended Fitting" in the individual Dead-end sections for the appropriate application recommendations.

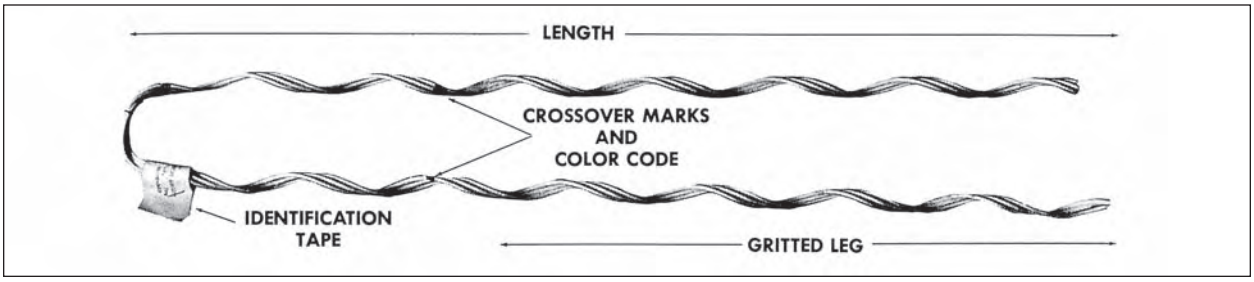
CATALOG NUMBER	WT PER UNIT	UNITS PER CARTON	RHS	MATERIAL
TC-5A	0.75 lb	25	12,000	Aluminum
ATC-20M	1.8 lb	25	20,000	Aluminum
TC-5F	1.6 lb	25	26,900	Iron
TC-17	1 lb	25	15,000	Iron
TC-6F	2.4 lb	25	42,400	Iron



CATALOG NUMBER	DIMENSIONS (INCHES)										
	A	B	C DIA	D	E	F	G	H	I	J	K
TC-5A	1-1/8	1-1/4	11/16	3	1-3/4	15/16	1-13/32	1/2	2-3/16	2-15/16	5/8
ATC-20M	1-1/2	1	11/16	4-11/32	2-13/16	1-1/2	2-3/32	3/4	3-3/8	3-1/16	5/8
TC-5F	1-1/8	1-1/4	11/16	3	1-5/8	15/16	1-13/32	1/2	2-3/16	2-15/16	5/8
TC-17	13/16	3/4	11/16	2-5/16	1-3/8	3/4	1-1/8	3/8	1-7/8	1-5/8	5/8
TC-6F	1-1/4	1-1/2	13/16	3-1/2	2-1/16	1-1/16	1-23/32	17/32	2-3/4	2-7/16	3/4

Distribution-Grip Dead-end

NOMENCLATURE



Crossover Marks: Indicate starting point for application.

Color Code and Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

Distribution-Grip dead-end, manufactured of aluminum-covered steel, is designed for single-pole distribution construction. Mechanical strength meets the requirements of primaries, secondaries, and substation feeders.

Distribution-Grip dead-end is recommended for direct application over plastic jacketed (not fabric covered) conductor. Coated dead-ends are also recommended for jacketed conductor.

The *Distribution-Grip* dead-end is designed to grip the conductor uniformly to prevent distortion of the conductor. It also offers a unique design that eliminates bolts, nuts, washers and other component parts that may become lost or damaged during installation or in service.

During installation, and at all times, care should be taken to avoid gouging or damaging the coating of the *Distribution-Grip* dead-end or the conductor itself.

***Distribution-Grip* dead-ends should not be used as tools; i.e., come-alongs, pulling-in grips, etc.**

Tools are not required nor recommended to install *Distribution-Grip* dead-ends, except for hot stick applications.

Service-Grip dead-ends are recommended for service drops.

RATED HOLDING STRENGTH. In arriving at "Rated Holding Strengths," actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed. These minimum values are conservative when compared to "typical" values, or, actual tests on conductor which has been in service.

TAPPING. Tapping over the applied legs of *Distribution-Grip dead-end* is **not** recommended. Taps can be made on the conductor, ahead of the dead-end, or, the conductor can continue through the crossover point of the grip with connectors applied to the continued tail.

VIBRATION DAMPERS. The use of *Spiral Vibration Dampers,* in Motion control section, should be considered for areas experiencing a history of vibration.

APPLICATION-INSPECTION. Dead-ends should not be re-used after original installation.

Lay direction of both the dead-end and the conductor should be the same. Most conductor is right-hand lay.

Not recommended for use on overhead shield wires.

(Continued)

Distribution-Grip Dead-end

GENERAL RECOMMENDATIONS CONTD.

CAT. NO.	ACSR SIZE	PRESSED STEEL	STANDARD THIMBLE CLEVIS	CAST	SPOOL INSULATOR	STRAIN INSULATOR	DROP-FORGED	THIMBLE GROOVE	THIMBLE DIAM.
DG-4554	#6	1" groove	1-3/4" Diam.	7/8" groove; 1-1/2" groove	53-1; 53-2; NEMA 53-3, 53-4, 53-5	54-2; NEMA 54-3, 54-4	3/8" groove	1/4" or more	1-1/4" to 2-3/8"
DG-4541	#4							3/8" or more	1-1/4" to 2-3/8"
DG-4542	#2							7/16" or more	1-1/2" to 2-3/8"
DG-4543	#1							1/2" or more	1-1/2" to 2-3/8"
DG-4544	1/0							5/8" or more	1-1/2" to 2-3/8"
DG-4545	2/0							3/4" or more	1-1/2" to 2-3/8"
DG-4546	3/0							7/8" or more	1-1/2" to 2-3/8"
DG-4547	4/0								
DG-4548	266.8								
DG-4549	336.4								
DG-4550	397.5, 19W 477, 19W 500, 37W								
DG-4551	556.5, 36/1 636, 37W 650, 61W								
DG-4552	666, 36/1 715.5, 36/1 795, 61W								
DG-4553	874.5, 36/1 954, 61W 1033.5, 61W								

Loops of the **Distribution-Grip dead-end** are designed for smoothly contoured fittings which have inside groove widths and diameters corresponding to the dimensions appearing in this table.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size Distribution-Grip dead-end before application.

5. Distribution-Grip dead-ends are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Distribution-Grip Dead-end

For use on:
ACSR, All-Aluminum
Aluminum Alloy, AWAC®
Compacted ACSR



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZES					UNITS WT./LBS. PER CARTON		LENGTH (INCHES)	COLOR CODE
	MIN.	MAX.	ACSR	ALL-ALUM.	ALUM. ALLOY	COMP. ACSR	AWAC 6/1				
DG-4554	.182	.203	#6, 6/1	#6, 7W	#6, 7W	#6, 6/1		100	14	16	Blue
DG-4541	.229	.257	#4, 6/1 #4, 7/1	#4, 7W	#4, 7W	#4, 6/1	#4	100	20	17	Orange
DG-4542	.290	.325	#2, 6/1 #2, 7/1	#2, 7W	#2, 7W	#2, 6/1	#2	100	33	24	Red
DG-4543	.326	.364	#1, 6/1	#1, 7W	#1, 7W	#1, 6/1	#1	100	44	26	Green
DG-4544	.365	.409	1/0, 6/1	1/0, 7W	1/0, 7W	1/0, 6/1	1/0	50	31	26	Yellow
DG-4545	.410	.460	2/0, 6/1	2/0, 7W	2/0, 7W	2/0, 6/1	2/0	50	31	28	Blue
DG-4546	.461	.516	3/0, 6/1	3/0, 7W	3/0, 7W	3/0, 6/1	3/0	25	22	32	Orange
DG-4547	.517	.577	4/0, 6/1	4/0, 7W	4/0, 7W	4/0, 6/1	4/0	25	60	34	Red
DG-4548	.578	.653	266.8, 18/1	266.8, 19W	266.8, 19W	336.4, 18/1	-	25	39	35	Black
DG-4549	.654	.739	336.4, 18/1	336.4, 19W	336.4, 19W	397.5, 18/1	-	25	53	39	Green

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal conductor size indicates a few of the various conductors within each range. Consult PLP for sizes or strandings not shown.

(2) AWAC is a registered trademark of the Copperweld Co.

Distribution-Grip Dead-end

RATED HOLDING STRENGTHS Holding strengths of the applied dead-ends are shown in pounds. Percentage of conductor RBS shown in parentheses.						
CATALOG NUMBER	SIZE	ACSR	ALL-ALUM.	ALUM. ALLOY	COMPACTED	AWAC
DG-4554	#6	#6, 6/1 971 lbs. (83%)	#6, 7W 555 lbs. (100%)	#6, 7W 1,050 lbs. (100%)	#6, 6/1 1,112 lbs. (95%)	
DG-4541	#4	#4, 6/1 1,519 lbs. (83%) #4, 7/1 1,899	#4, 7W 875 lbs. (100%)	#4, 7W 1,670 lbs. (100%)	#4, 6/1 1,739 lbs. (95%)	#4, 6/1 1,480 lbs. (83%)
DG-4542	#2	#2, 6/1 2,316 lbs. (83%) #2, 7/1 2,926 lbs. (83%)	#2, 7W 1,335 lbs. (100%)	#2, 7W 2,655 lbs. (100%)	#2, 6/1 2,651 lbs. (95%)	#2, 6/1 2,291 lbs. (83%)
	#3					#3, 5/2 3,196 lbs. (90%)
DG-4543	#1	#1, 6/1 2,888 lbs. (83%)	#1, 7W 1,625 lbs. (100%)	#1, 7W 3,420 lbs. (100%)	#1, 6/1 3,306 lbs. (95%)	#1, 6/1 2,864 lbs. (83%)
	#2					#2, 5/2 3,992 lbs. (90%)
DG-4544	1/0	1/0, 6/1 3,552 lbs. (83%)	1/0, 7W 1,970 lbs. (100%)	1/0, 7W 4,230 lbs. (100%)	1/0, 6/1 3,852 lbs. (90%)	1/0, 6/1 3,524 lbs. (83%)
	#1					#1, 5/2 4,708 lbs. (85%)
DG-4545	2/0	2/0, 6/1 4,062 lbs. (76%)	2/0, 7W 2,480 lbs. (100%)	2/0, 7W 5,055 lbs. (100%)	2/0, 6/1 4,009 lbs. (75%)	2/0, 6/1 3,903 lbs. (76%)
	1/0					1/0, 5/2 5,706 lbs. (85%)
DG-4546	3/0	3/0, 6/1 4,806 lbs. (72%)	3/0, 7W 3,005 lbs. (100%)	3/0, 7W 6,365 lbs. (100%)	3/0, 6/1 5,006 lbs. (75%)	3/0, 6/1 4,540 lbs. (72%)
	2/0					2/0, 5/2 6,834 lbs. (85%)
DG-4547	4/0	4/0, 6/1 5,557 lbs. (66%)	4/0, 7W 3,790 lbs. (100%)	4/0, 7W 8,025 lbs. (100%)	4/0, 6/1 6,315 lbs. (75%)	4/0, 6/1 5,072 lbs. (66%)
	3/0					3/0, 5/2 8,249 lbs. (85%)
DG-4548	266.8 mcm	266.8 mcm. 18/1 5,464 lbs. (80%) 266.8 mcm. 26/7 7,313 lbs. (65%)	266.8 mcm. 19W 4,800 lbs. (100%) 266.8 mcm. 37W 5,185 lbs. (100%)	266.8 mcm. 19W 9,549 lbs. (90%)		266.8 mcm. 18/1 5,534 lbs. (80%)
	300 mcm	300 mcm. 18/1 6,152 lbs. (80%)	300 mcm. 19W 5,300 lbs. (100%) 300 mcm. 37W 5,831 lbs. (100%)		300mcm. 18/1 6,392 lbs. (80%)	
	336.4 mcm				336.4 mcm. 18/1 6,900 lbs. (80%)	
DG-4549	300 mcm	300 mcm. 26/7 8,223 lbs. (65%) 300 mcm. 30/7 10,030 lbs. (65%)				
	336.4 mcm	336.4 mcm. 18/1 6,904 lbs. (80%) 336.4 mcm. 36/1 6,104 lbs. (80%) 336.4 mcm. 26/7 9,133 lbs. (65%)	336.4 mcm. 19W 5,940 lbs. (100%) 336.4 mcm. 37W 6,420 lbs. (100%)	336.4 mcm. 19W 11,547 lbs. (90%)		336.4 mcm. 18/1 6,920 lbs. (80%)
	350 mcm		350 mcm. 19W 6,180 lbs. (100%) 350 mcm. 37W 6,680 lbs. (100%)			
	397.5 mcm	397.5 mcm. 36/1 6,992 lbs. (80%)	397.5 mcm. 19W 6,880 lbs. (100%) 397.5 mcm. 37W 7,305 lbs. (100%)		397.5 mcm. 18/1 8,032 lbs. (80%)	
	400 mcm		400 mcm. 19W 6,925 lbs. (100%) 400 mcm. 37W 7,350 lbs. (100%)			

Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations for explanation of "Rated Holding Strength."

(2) Consult PLP for sizes or strandings not shown.

(3) AWAC is a registered trademarks of the Copperweld Co.

Distribution-Grip Dead-end

LARGE SIZES for use on:
ACSR, All-Aluminum
Aluminum Alloy, Compacted ACSR
Compacted All-Aluminum



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL SIZES				UNITS	WT./LBS.	LENGTH (INCHES)	COLOR CODE
	MIN.	MAX.	ACSR	ALL-ALUMINUM	ALUMINUM ALLOY	COMPACTED	PER CARTON			
DG-4550	.740	.837	397.5, 18/1 477, 36/1 477, 18/1	450, 19W 477, 19W 500, 37W	397.5, 19W	477, 18/1 556, 19W	10	43	50	Orange
DG-4551	.838	.947	556.5, 36/1 605, 36/1 636, 18/1	556.5, 37W 636, 37W 650, 61W	477, 19W 556.5, 19W	636, 18/1 795, 19W	10	50	55	Blue
DG-4552	.948	1.071	666.6, 36/1 715.5, 36/1 795, 36/1	715.5, 37W 750, 61W 795, 61W	636, 37W	874.5, 37W 954, 37W	10	67	62	Brown
DG-4553	1.072	1.212	874.5, 36/1 954, 36/1 1033.5, 36/1	874.5, 61W 954, 61W 1033.5, 61W	795, 37W	—	5	48	70	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) Distribution-Grip dead-ends, manufactured of aluminum covered steel, are designed to meet the requirements of primaries and sub-station feeders.
(2) Nominal conductor size indicates a few of the various conductors within each range. Consult PLP for sizes or strandings not shown.
(3) For quantities less than 25 pieces, consult PLP.

Distribution-Grip Dead-end

CATALOG NUMBER	SIZE	RATED HOLDING STRENGTHS Holding strengths of the applied dead-ends are shown in pounds. Percentage of conductor RBS shown in parentheses. ACSR	ALL-ALUMINUM	ALUMINUM ALLOY	COMPACTED
DG-4550	336.4	30/7 11,076 lbs. (65%)			
	397.5	18/1 8,024 lbs. (80%) 26/7 10,524 lbs. (65%) 30/7 12,987 lbs. (65%)		19W 13,617 lbs. (90%)	
	450		19W 7,630 lbs. (100%) 37W 8,110 lbs. (100%)		
	477	36/1 8,256 lbs. (80%) 18/1 9,496 lbs. (80%)	19W 8,090 lbs. (100%) 37W 8,600 lbs. (100%)		18/1 9,496 lbs. (80%)
	500		19W 8,480 lbs. (100%) 37W 9,010 lbs. (100%)		
	556.5				18/1 11,080 lbs. (80%) 19W 9,440 lbs. (100%)
	636				19W 10,790 lbs. (100%)
DG-4551	477	26/7 12,630 lbs. (65%) 30/7 15,145 lbs. (65%)		19W 16,371 lbs. (90%)	
	500	30/7 15,893 lbs. (65%)			
	550		37W 9,270 lbs. (100%) 61W 9,450 lbs. (90%)		
	556.5	36/1 9,440 lbs. (80%) 18/1 11,080 lbs. (80%) 26/7 14,560 lbs. (65%)	19W 9,440 lbs. (100%) 37W 9,830 lbs. (100%) 61W 9,558 lbs. (90%)	19W 19,080 lbs. (90%)	
	600		37W 10,600 lbs. (100%) 61W 10,305 lbs. (90%)		
	605	36/1 10,240 lbs. (80%)			
	636	36/1 12,112 lbs. (80%) 18/1 12,672 lbs. (80%)	37W 11,240 lbs. (100%) 61W 10,521 lbs. (90%)		18/1 12,664 lbs. (80%)
	650		37W 11,480 lbs. (100%) 61W 10,755 lbs. (90%)		
	795				36/1 13,232 lbs. (80%) 19W 13,200 lbs. (100%)

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Consult PLP before using Distribution-Grip dead-ends on conductor sizes and strandings not shown.

Distribution-Grip Dead-end

CATALOG NUMBER	SIZE	RATED HOLDING STRENGTHS Holding strengths of the applied dead-ends are shown in pounds. Percentage of conductor RBS shown in parentheses. ACSR	ALL-ALUMINUM	ALUMINUM ALLOY	COMPACTED
DG-4552	556.5	30/7 17,680 lbs. (65%)			
	605	54/7 13,500 lbs. (60%) 26/7 15,665 lbs. (60%)			
	636	54/7 14,160 lbs. (60%) 26/7 16,250 lbs. (65%)		37W 21,690 lbs. (90%)	
	666.6	36/1 11,280 lbs. (80%) 54/7 14,700 lbs. (60%)			
	700		37W 12,370 lbs. (100%) 61W 11,574 lbs. (90%)		
	715.5	36/1 11,920 lbs. (80%) 26/7 18,265 lbs. (65%)	37W 12,640 lbs. (100%) 61W 11,835 lbs. (90%)		
	750		37W 12,990 lbs. (100%) 61W 12,168 lbs. (90%)		
	795	36/1 13,232 lbs. (80%) 45/7 13,740 lbs. (60%)	37W 13,770 lbs. (100%) 61W 12,897 lbs. (90%)		
	800		37W 13,850 lbs. (100%) 61W 12,978 lbs. (90%)		
	874.5				36/1 14,320 lbs. (80%) 37W 14,830 lbs. (100%)
	954				36/1 15,616 lbs. (80%) 37W 16,180 lbs. (100%)
DG-4553	795	54/7 17,100 lbs. (60%) 26/7 20,280 lbs. (65%)		37W 27,135 lbs. (90%)	
	874.5	36/1 14,320 lbs. (80%) 54/7 18,840 lbs. (60%)	37W 14,830 lbs. (100%) 61W 14,184 lbs. (90%)		
	900	45/7 15,240 lbs. (80%) 54/7 19,380 lbs. (60%)	37W 15,260 lbs. (100%) 61W 14,310 lbs. (90%)		
	954	36/1 15,608 lbs. (80%) 45/7 16,140 lbs. (60%) 54/7 20,520 lbs. (60%)	37W 16,180 lbs. (100%) 61W 15,174 lbs. (90%)	37W 32,778 lbs. (90%)	
	1000		37W 16,960 lbs. (100%) 61W 15,903 lbs. (90%)		
	1033.5	36/1 16,904 lbs. (80%)	37W 17,530 lbs. (100%) 61W 16,434 lbs. (90%)		

Right-hand lay standard

EXPLANATORY NOTES:

(1) Consult PLP before using Distribution-Grip dead-ends on conductor sizes and strandings not shown.

Distribution-Grip Dead-end

For use on:
AWAC®, Aluminum/Aluminum-Clad Steel

CATALOG NUMBER	CONDUCTOR SIZE AWAC	OUTSIDE DIAM. (INCHES)	UNITS PER CARTON	WT./LBS.	LENGTH (INCHES)	COLOR CODE
DG-4560	#4 AWAC 5/2 #4 AWAC 4/3	.261 .281	100	44	25	Green
DG-4561	#3 AWAC 5/2 #4 AWAC 3/4 #3 AWAC 4/3	.293 .307 .316	100	46	26	Brown
DG-4562	#2 AWAC 5/2 #4 AWAC 2/5 #3 AWAC 3/4 #2 AWAC 4/3	.330 .340 .344 .355	50	33	29	Orange
DG-4563	#1 AWAC 5/2 #3 AWAC 2/5 #2 AWAC 3/4	.370 .382 .386	50	44	31	Green
DG-4564	#1 AWAC 4/3 1/0 AWAC 5/2	.398 .416	50	45	32	Brown
DG-4565	#2 AWAC 2/5 #1 AWAC 3/4 1/0 AWAC 4/3	.429 .434 .447	50	58	33	Green
DG-4566	2/0 AWAC 5/2 #1 AWAC 2/5 1/0 AWAC 3/4	.467 .482 .487	50	60	35	Blue
DG-4567	2/0 AWAC 4/3 3/0 AWAC 5/2	.502 .524	50	62	36	Green
DG-4568	1/0 AWAC 2/5 2/0 AWAC 3/4 3/0 AWAC 4/3	.541 .547 .564	25	42	37	Purple
DG-4100	4/0 AWAC 15/4	.575	25	42	38	Orange

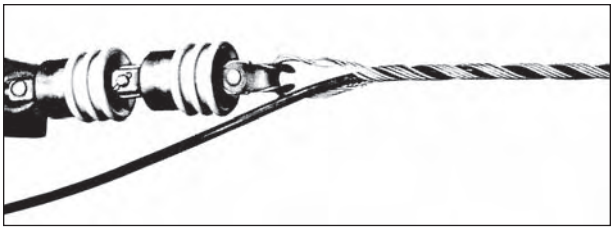
Right-hand lay standard
EXPLANATORY NOTES:
(1) AWAC is a registered trademark of the Copperweld Co.

CATALOG NUMBER	RATED HOLDING STRENGTHS AWAC SIZES #4	#3	#2	#1	1/0	2/0	3/0	4/0
DG-4560	#4, 5/2 2,790 lbs. (100%)							
	#4, 4/3 4,190 lbs. (100%)							
DG-4561	#4, 3/4 6,130 lbs. (100%)	#3, 5/2 3,500 lbs. (100%)						
		#3, 4/3 5,260 lbs. (100%)						
DG-4562	#4, 2/5 8,960 lbs. (100%)	#3, 3/4 7,700 lbs. (100%)	#2, 5/2 4,370 lbs. (100%)					
			#2, 4/3 6,600 lbs. (100%)					
DG-4563		#3, 2/5 11,300 lbs. (100%)	#2, 3/4 9,690 lbs. (100%)	#1, 5/2 5,450 lbs. (100%)				
DG-4564				#1, 4/3 8,100 lbs. (100%)	1/0, 5/2 6,580 lbs. (100%)			
DG-4565			#2, 2/5 13,500 lbs. (100%)	#1, 3/4 11,200 lbs. (100%)	1/0, 4/3 9,680 lbs. (100%)			
DG-4566				#1, 2/5 16,500 lbs. (100%)	1/0, 4/3 13,800 lbs. (100%)	2/0, 5/2 8,030 lbs. (100%)		
DG-4567						2/0, 4/3 11,900 lbs. (100%)	3/0, 5/2 9,660 lbs. (100%)	
DG-4568					1/0, 2/5 19,500 lbs. (100%)	2/0, 3/4 16,400 lbs. (100%)	3/0, 4/3 14,200 lbs. (100%)	
DG-4100								4/0, 15/4 7,560 lbs. (70%)

Right-hand lay standard
EXPLANATORY NOTES:
(1) Refer to General Recommendations for explanation of "Rated Holding Strength."
(2) Consult PLP for sizes or strandings not shown.
(3) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Distribution-Grip Dead-end (GALVANIZED STEEL)

For use on:
Plastic Jacketed Conductors, Polyethylene, Neoprene, Vinyl, Rubber



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	LENGTH (INCHES)	COLOR CODE
	MIN.	MAX.		PER CARTON			
DG-2510	.229	.257	#6, 7W, 2/64s #6, Solid, 3/64s	100	20	18	Orange
DG-2511	.258	.289	#4, Solid, 2/64s #6, 7W, 3/64s	100	35	21	Yellow
DG-2512	.290	.325	#6, 7W, 4/64s #4, 7W, 2/64s	100	40	26	Red
DG-2513	.326	.364	#4, 7W, 3/64s #4, 7W, 4/64s	100	60	27	Green
DG-2514	.365	.409	#2, 7W, 3/64s #4, 7W, 5/64s	100	60	27	Yellow
DG-2515	.410	.460	#2, 7W, 5/64s #2, 7W, 4/64s	50	45	29	Blue
DG-2516	.461	.516	#1, 19W, 5/64s 1/0, 7W, 4/64s	50	45	31	Orange
DG-2517	.517	.577	1/0, 19W, 5/64s 1/0, 19W, 6/64s	50	65	34	Purple

(Continued on next page)

Conductor may be right-hand lay or left-hand lay.

EXPLANATORY NOTES:

(1) Nominal conductor size indicates one of various combinations of conductor sizes and jacket thickness within each range.
(2) Rated holding strengths for all sizes are not practical to publish, due to the multiple combinations of conductor, jacket thickness and type. As a general guide, Distribution Grip dead-ends are expected to approximate the typical test results for coated dead-ends.

Distribution-Grip Dead-end (GALVANIZED STEEL)

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	LENGTH (INCHES)	COLOR CODE
	MIN.	MAX.		PER CARTON			
DG-2100	.578	.653	3/0, 7W, 4/64s 4/0, 7W, 4/64s	25	45	35	Blue
DG-2101	.654	.739	250, 19W, 4/64s 266.8, 19W, 4/64s	25	60	38	Red
DG-2102	.740	.837	300, 19W, 5/64s 336.4, 19W, 8/64s	10	40	40	Brown
DG-2103	.838	.947	336.4, 19W, 8/64s 397.5, 19W, 6/64s	10	45	40	Green
DG-2104	.948	1.071	477, 37W, 5/64s 500, 37W, 8/64s	10	50	40	Black
DG-2105	1.072	1.212	350, 19W, 12/64s 500, 37W, 12/64s	10	70	40	Purple

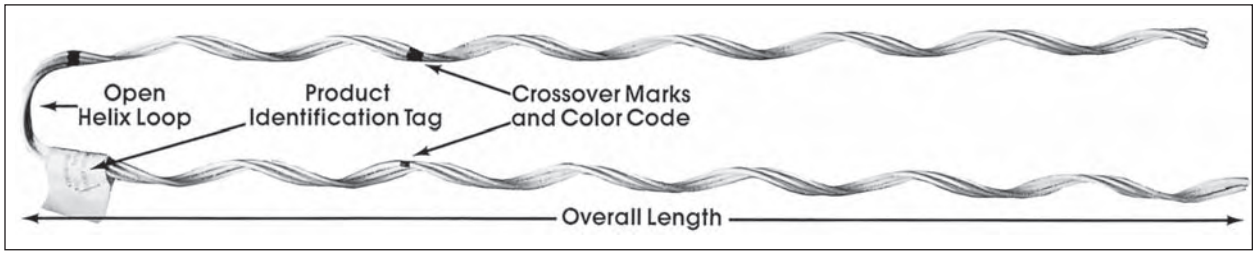
Conductor may be right-hand lay or left-hand lay.

EXPLANATORY NOTES:

(1) Nominal conductor size indicates one of various combinations of conductor sizes and jacket thickness within each range.
(2) Rated holding strengths for all sizes are not practical to publish, due to the multiple combinations of conductor, jacket thickness and type. As a general guide, Distribution Grip dead-ends are expected to approximate the typical test results for coated dead-ends.

Overhead Dead-end

NOMENCLATURE



RUS Listed

Overhead dead-end Material: Aluminum covered steel.

Crossover Marks: Indicate starting point for application on conductor.

Color Code and Length: Assist in identification of conductor diameter range.

Identification Tape: Identifies catalog number, conductor type, and diameter range.

GENERAL RECOMMENDATIONS

The Overhead dead-end, intended for use on aluminum-based conductor, with a diameter range of .229" to .577", is designed to terminate primary, secondary and neutral wire conductors.

The Overhead dead-end is designed to grip the conductor uniformly to prevent distortion of the conductor. It also offers a unique design that eliminates bolts, nuts, washers and other component parts that may become lost or damaged during installation or in service.

During installation, and at all times, care should be taken to avoid gouging or damaging the aluminum coating of the Overhead dead-end or the conductor itself.

Overhead dead-ends should not be used as tools; i.e., come-alongs, pulling-in grips, etc.

Tools are not required nor recommended to install Overhead dead-ends, except for hot stick applications.

Overhead dead-ends should be installed on smoothly contoured fittings that have acceptable groove dimensions and diameters to minimize abrasion and fatigue of the loop area. Refer to Tables 1 and 2 in this section, for acceptable dimensions and examples of acceptable fittings. Fittings other than those shown may be used if they have acceptable dimensions.

Overhead dead-ends should not be used on overhead shield wires.

RATED HOLDING STRENGTH. Each of the Overhead dead-ends will hold 90% of the appropriate ACSR 6/1 conductor's Rated Breaking Strength listed within each conductor diameter range.

When used on aluminum based conductors other than ACSR 6/1, they will develop in excess of 90% of the conductors' Rated Breaking Strength. Holding strengths ratings were established in conjunction with RUS testing requirements for ACSR 6/1 conductor.

When requirements call for dead-ending conductors larger than .577", holding strengths less than 90% of ACSR (6/1) conductors, use the Distribution Grip dead-end listed in the previous section. Also refer to the Dead-end: Coated for applications on jacketed conductors.

When requirements call for dead-ending conductors associated with bare neutral messengers of self-supported cable used in making service drops, use the Service-Grip dead-end.

MATERIAL SELECTION. The Overhead dead-end is made from aluminum covered steel wire for compatibility with aluminum based conductors. They also have the same right hand lay direction as most conductors.

VIBRATION DAMPERS. On some lines, excessive vibration may require the use of vibration dampers. Utilities that have experienced vibration, or expect to, should consider adding dampers. Consult Preformed Line Products for general guidelines and advice concerning vibration and dampers. Also consult the Motion Control Section.

(Continued)

Overhead Dead-end

GENERAL RECOMMENDATIONS CONTD.

CONDUCTOR COMPATIBILITY. Overhead dead-ends should be used only on the size and type of conductor for which they are designed. They must have the same lay as the conductor to which they are being applied. When ordering Overhead dead-ends, make sure to specify the conductor size and type they are to be used on. When using types and/or sizes of conductors not mentioned in these catalog pages, consult Preformed Line Products Company.

TAPPING. Tapping over the legs of the Overhead dead-end is **not** recommended. Taps can be made beyond the dead-end on the conductor or on the tail of the conductor that extends through the dead-end.

RURAL UTILITY SERVICE. On June 26, 1979, the Overhead dead-end was listed for use on RUS accepted conductors used by RUS fund borrowers. The holding strengths of the Overhead dead-end has been reviewed and accepted by RUS.

The Overhead dead-end is listed on page by-1 of the RUS accepted List of Materials.

When in doubt about dimensions, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ product before application.

5. PREFORMED™ products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

ACCEPTABLE FITTINGS

The Overhead dead-end is designed to be installed on smoothly contoured fittings. Minimum groove widths, minimum and maximum seat diameters for each size are listed in Table 1.

PREFORMED™ Pressed Steel Thimble Clevis (TC-17). The TC-17 is suggested for use with all sizes of the Overhead dead-end. The dimensions of the TC-17 are consistent with the minimum groove widths and seat diameters acceptable for use with the Overhead dead-end.

A working load of 8500 lbs. has been established for rigging purposes.

The TC-17 has been accepted by RUS for usage with the Overhead dead-end and is listed on page (by-1) of the RUS approved list of materials.

PREFORMED™ Aluminum Thimble Clevis. The ATC 20M, listed in this section, is suggested for use with the Overhead dead-end sizes from .326" to .577". The dimensions of the ATC 20M are consistent with the minimum groove widths and seat dimensions acceptable for use with those sizes of the Overhead dead-end.

A working load of 3500 lbs. has been established for rigging purposes.

Overhead Dead-end

Table 1. Acceptable Fitting Dimensions

CATALOG NUMBER	CONDUCTOR RANGE (INCHES)	ACCEPTABLE FITTING DIMENSIONS (INCHES)		
		GROOVE WIDTH*	SEAT DIAMETER**	
		MINIMUM	MIN.	MAX.
OHDE-9534	.229-.257	1/4	1-1/4	2-3/8
OHDE-9536	.290-.325	3/8	1-1/4	2-3/8
OHDE-9537	.326-.364	3/8	1-1/2	3
OHDE-9538	.365-.409	7/16	1-1/2	3
OHDE-9539	.410-.460	7/16	1-1/2	3
OHDE-9540	.461-.516	1/2	1-1/2	3
OHDE-4577	.517-.577	5/8	1-1/2	3

NOTE: The Overhead dead-end is designed to be installed on smoothly contoured fittings. Minimum groove widths and minimum and maximum seat diameters are shown above.

Figure 1. Groove Width

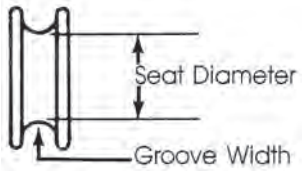


Figure 2. Seat Diameter

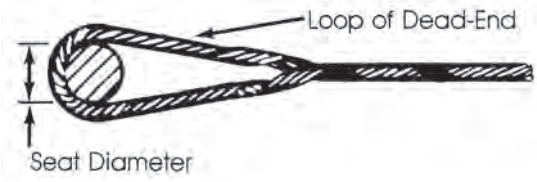


Table 2. Examples of Acceptable Fittings

1. Cast Iron Thimble Clevis TC-17
   For all sizes listed
   RUS Accepted



2. Cast Aluminum ATC-20M
   For sizes .326" to .577"



3. Spool Insulators
   ANSI
   53-1, 53-2, 53-3 } For all sizes
   53-4, 53-4 } For sizes .326"-.577"



NOTE: Fittings other than those shown may be used provided they have dimensions shown on Table 1.

Overhead Dead-end

For use on:
ACSR, Aluminum Alloy
All Aluminum, AWAC (6/1)
Compacted ACSR



CATALOG NUMBER	CONDUCTOR (INCHES)		PER CARTON		LENGTH (INCHES)	COLOR CODE
	RANGE	NOMINAL SIZE	UNITS	WT./LBS.		
OHDE-9534	.229-.257	#4	100	31	24	Orange
OHDE-9536	.290-.325	#2	100	59	30	Red
OHDE-9537	.326-.364	#1	75	60	34	Green
OHDE-9538	.365-.409	1/0	50	47	38	Yellow
OHDE-9539	.410-.460	2/0	50	60	38	Blue
OHDE-9540	.461-.516	3/0	50	71	45	Orange
OHDE-4577	.517-.577	4/0	25	57	52	Red

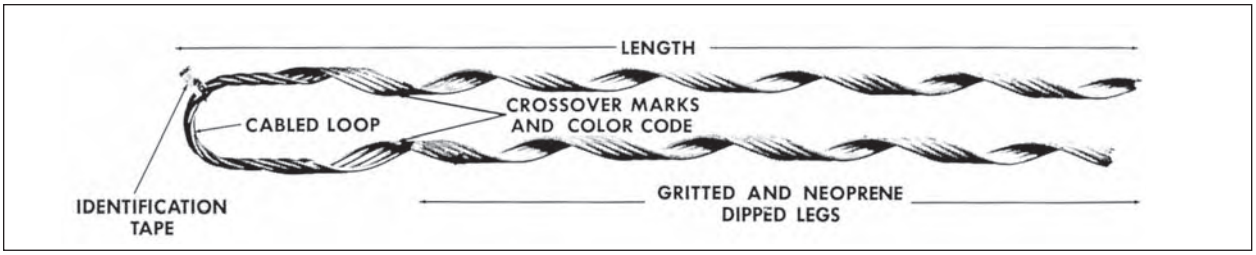
Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal conductor size indicates one of various combinations of conductor sizes and jacket thickness within each range.
(2) When in doubt about dimensions, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.

Coated Dead-end

NOMENCLATURE



Crossover Marks: Indicate starting point for application.

Gritted and Neoprene Dipped Legs: Grit is permanently embedded in a coating of neoprene.

Color Code and Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number and range of outside diameters.

GENERAL RECOMMENDATIONS

Dead-end: Coated, manufactured of aluminum alloy wire, is designed for direct application over conductors jacketed with neoprene, polyethylene, vinyl, or rubber. The sub-setted rods in each leg, bonded together with neoprene, exert a low radial pressure without damaging the jacket. Becasue it is not necessary to skin the plastic covering, the same dead-end can be used for either aluminum-base or copper-base conductors.

Coated dead-ends should not be used over fabric braided conductor. In this case, the fabric should be skinned and a *Distribution-Grip dead-end* applied.

RATED HOLDING STRENGTH. Holding values of coated dead-ends are dependent on a combination of several factors:

- Conductor size, type, stranding
- Thickness of jacket
- Type of jacket
- Specific density of various polyethylenes

The multiplicity of combinations makes it impractical to publish a table of "Rated Holding Strengths." As a general guide, the following considerations may be adapted for a certain conductor and construction practice.

When tested under static tension (ram speed of two inches per minute), Coated dead-ends will hold the full rated breaking strength of all-aluminum and copper conductors, jacketed with neoprene or medium density polyethylene. Static tension results on ACSR approximates the full strength of the aluminum strands plus 10% of the steel core strength.

When Coated dead-ends are tested under sustained (24 hours) loading generally lower holding strengths are recorded. This is attributed to the cold-flow characteristics and frictional coefficient of various plastics. The graphs appearing on the back of each catalog page are based on long-term sustained load tests and may be considered representative of the cables described.

This data indicates the highest percentage of rated breaking strength is held on medium density polyethylene and vinyl. High density (linear) polyethylene has the lowest percent of RBS.

In addition to the specific densities, the data indicates the percent of RBS will also be reduced by increased jacket thickness.

The test results, expressed in actual pounds of sustained load capacity, make it apparent that values between 500 and 1,000 lbs. should be sufficient to meet field requirements on industrial or commercial service drops and messengered aerial spacer cables. Values exceeding 1,000 lbs. are sufficient for primaries and secondaries in urban distribution.

TAPPING. Coated dead-end allows the plastic jacket to remain intact and the conductor continues through the crossover point of the grip. Connectors are applied to the continued tail, with minimum stripping and exposure to corrosion.

RADIO INTERFERENCE. R.I.V. readings and flashover tests indicate Coated dead-ends, applied over plastic jacketed conductors, have the same satisfactory electrical performance as dead-ends applied over bare conductors. This statement does not apply to fabric covered conductor.

Coated Dead-end

GENERAL RECOMMENDATIONS CONTD.

ACCEPTABLE FITTINGS								SIZE
PRESSED STEEL	STANDARD THIMBLE CLEVIS	CAST	SPOOL INSULATOR	STRAIN INSULATOR	DROP-FORGED	THIMBLES DIAMETERS	THIMBLES GROOVE WIDTH	CONDUCTOR OUTSIDE DIAMETERS
						Diameters 1¼" to 2⅜"	Groove Width 5/16" Min.	Sizes up to .310" O.D.
						Diameters 1¼" to 2⅜"	Groove Width ⅜" Min.	Sizes up to .374" O.D.
						Diameters 1¼" to 2⅜"	Groove Width 7/16" Min.	Sizes up to .428" O.D.
						Diameters 1¼" to 2⅜"	Groove Width ½" Min.	Sizes up to .507" O.D.
				NEMA 54-1 ⅝" Groove Width		Diameters 1¼" to 2⅜"	Groove Width ⅜" Min.	Sizes up to .608" O.D.
	¾" Groove Width	¾" Groove Width			¾" Groove Width	Diameters 1¼" to 2⅜"	Groove Width ¾" Min.	Sizes up to .783" O.D.
		⅞" Groove Width		NEMA 54-2 ⅞" Groove Width		Diameters 1½" to 2⅜"	Groove Width ⅞" Min.	Sizes up to .888" O.D.
1" Groove Width	1" Groove Width			NEMA 54-3 NEMA 54-4 1" Groove Width		Diameters 1½" to 2⅜"	Groove Width 1" Min.	Sizes up to 1.005" O.D.
1⅛" Groove Width						Diameters 1½" to 2⅜"	Groove Width 1⅛" Min.	Sizes up to 1.138" O.D.
		1½" Groove Width	NEMA 53-1 NEMA 53-2 NEMA 53-3 Diameters 1½" to 2¾"			Diameters 1½" to 2⅜"	Groove Width 1½" Min.	Sizes up to 1.550" O.D.

Loops are designed for use with a variety of thimble-clevises, insulators, and thimbles. The fittings appearing in this table have smoothly contoured diameters and adequate groove widths.

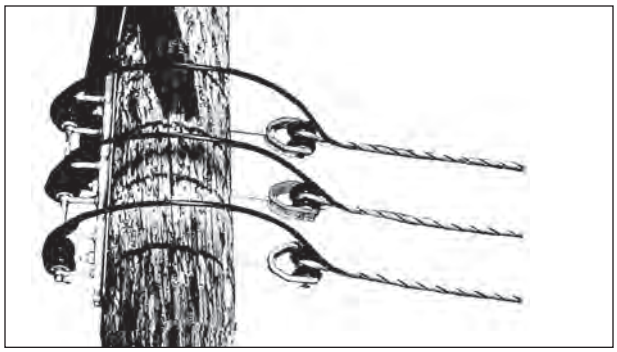
(1) Consult Factory for spool insulators ANSI Class 53-4 and 53-5.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for re-tensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ product before application.
5. PREFORMED™ products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Coated Dead-end

For use on:
Plastic Jacketed Conductors
Polyethylene, Neoprene
Vinyl, Rubber



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	LENGTH (INCHES)	COLOR CODE
	MIN.	MAX.	AWG or MCM	PER CARTON			
ND-0500	.243	.253	#6, 7W, 2/64s	100	13	16	Green
ND-0501	.254	.264	#6, Solid, 3/64s #6, 6/1, 2/64s	100	14	17	Red
ND-0502	.265	.272	#4, Solid, 2/64s	100	14	17	Blue
ND-0503	.273	.284	#6, 7W, 3/64s	100	14	18	Orange
ND-0100	.285	.297	#6, 6/1, 3/64s #4, 7W, 2/64s	100	15	19	Black
ND-0101	.298	.310	#4, Solid, 3/64s #6, 7W, 4/64s	100	17	19	Yellow
ND-0102	.311	.323	#4, 7W, 2/64s Al. Alloy #4, 6/1, 2/64s	100	18	20	Blue
ND-0103	.324	.338	#6, 7W, 4/64s, Al. Alloy #4, 7W, 3/64s	100	18	20	Orange
ND-0104	.339	.354	#4, 7W, 3/64s, Al. Alloy #4, 6/1, 3/64s	100	20	21	Black
ND-0105	.355	.374	#4, 7W, 4/64s	100	20	22	Yellow
ND-0106	.375	.397	#4, 7W, 4/64s #4, 7W, 5/64s	100	25	23	Red
ND-0107	.398	.420	#2, 6/1, 3/64s #2, 7/1, 3/64s	100	26	24	Green
ND-0108	.421	.445	#2, 7W, 4/64s, Al. Alloy #1, 7W, 3/64s	50	20	27	Black
ND-0109	.446	.475	#1, 7W, 4/64s #4, 7W, 8/64s	50	22	28	Orange

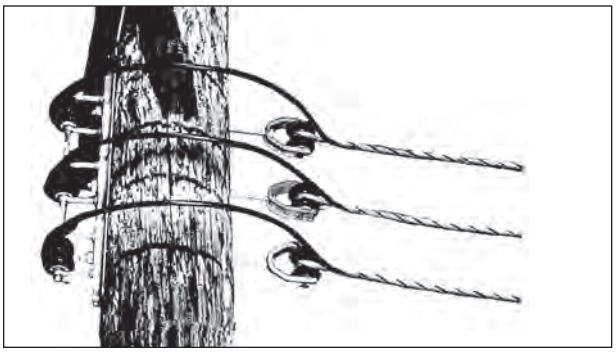
Conductor may be right-hand lay or left-hand lay.

EXPLANATORY NOTES:

(1) Nominal conductor size indicates one of various combinations of conductor sizes and jacket thickness within each range.
(2) Holding strength values for representative sizes appear on the reverse side of this page.

Coated Dead-end

For use on:
Plastic Jacketed Conductors
Polyethylene, Neoprene
Vinyl, Rubber



CATALOG NUMBER	SIZE	JACKETING	OUTSIDE DIAMETER (INCHES)	SUSTAINED LOAD TEST RESULTS (LBS.)	PERCENT OF BREAKING STRENGTH
ND-0500	#6, 7W, 2/64s	Poly.*	.246	450	89%
ND-0100	#4, 7W, 2/64s	Poly.*	.294	750	95%
ND-0102	#4, 6/1, 2/64s	Poly.*	.313	800	46%
	#4, 7/1, 2/64s	Poly. (.929)	.320	850	39%
ND-0103	#4, 7W, 3/64s	Neoprene	.326	800	108%
ND-0104	#4, 6/1, 3/64s	Neoprene	.344	750	43%
ND-0106	#2, 7W, 3/64s	Neoprene	.386	600	52%
	#2, 7W, 3/64s	Poly.*	.386	750	62%
ND-0107	#2, 6/1, 3/64s	Poly.*	.410	900	34%
	#2, 6/1, 3/64s	Neoprene	.410	900	34%
	#2, 7/1, 3/64s	Poly.*	.419	1,200	35%
	#2, 7/1, 3/64s	Neoprene	.419	1,000	30%

** Low density or medium density polyethylene per ASTM D-1243-58T.*

This table is based on actual results of long term sustained load tests and may be considered representative of the cables described. Refer earlier in this section for an explanation of the multiple factors affecting holding strength of Dead-end: Coated.

Coated Dead-end

For use on:
Plastic Jacketed Conductors
Polyethylene, Neoprene
Vinyl, Rubber

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	LENGTH (INCHES)	COLOR CODE
	MIN.	MAX.		PER CARTON			
ND-0110	.476	.507	#1, 19W, 5/64s 1/0, 7W, 4/64s	50	30	30	Blue
ND-0111	.508	.536	1/0, 19W, 6/64s 1/0, 19W, 5/64s	50	29	30	Red
ND-0112	.537	.571	2/0, 7W, 4/64s 2/0, 19W, 6/64s, Comp.	50	34	31	Black
ND-0113	.572	.608	3/0, 19W, 4/64s 2/0, 19W, 5/64s	50	36	33	Yellow
ND-0114	.609	.648	1/0, 7W, 8/64s 4/0, 7W, 4/64s	25	24	33	Red
ND-0115	.649	.690	1/0, 7W, 10/64s 4/0, 19W, 4/64s	25	26	34	Green
ND-0116	.691	.735	250, 19W, 4/64s 266.8, 18/1, 4/64s	25	30	35	Black
ND-0117	.736	.783	3/0, 7W, 10/64s	25	32	36	Orange
ND-0118	.784	.834	300, 19W, 5/64s 336.4, 19W, 5/64s	25	34	38	Blue
ND-0119	.835	.888	350, 19W, 5/64s 300, 19W, 10/64s Comp.	25	40	40	Black
ND-0120	.889	.945	250, 19W, 10/64s 300, 19W, 10/64s	25	44	42	Yellow
ND-0121	.946	1.005	450, 37W, 6/64s 500, 37W, 6/64s	25	52	44	Green
ND-0122	1.006	1.070	450, 37W, 8/64s 336.4, 19W, 12/64s	10	24	45	Red
ND-0123	1.071	1.138	350, 19W, 12/64s 500, 37W, 10/64s	10	24	47	Blue
ND-0124	1.139	1.212	636, 37W, 10/64s Comp. 500, 37W, 12/64s	10	30	48	Orange
ND-0125	1.213	1.288	795, 61W, 6/64s 795, 37W, 10/64s Comp.	10	30	49	Black
ND-0126	1.289	1.372	1033.5, 61W, 6/64s	10	32	51	Yellow
ND-0127	1.373	1.458	715, 37W, 14/64s	10	38	53	Green
ND-0128	1.459	1.550	795, 37W, 14/64s	10	40	56	Red

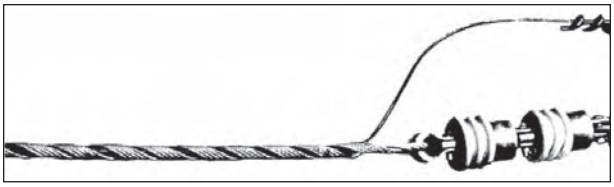
Right-hand or left-hand lay standard

EXPLANATORY NOTES:

(1) Nominal conductor size indicates one of various combinations of conductor sizes and jacket thickness within each range.
(2) Cabled loop design furnished for all sizes on this page. See reference chart in this section for acceptable fittings.
(3) Holding strength values for representative sizes appear on the reverse side of this page.

Coated Dead-end

For use on:
Plastic Jacketed Conductors
Polyethylene, Neoprene
Vinyl, Rubber



SIZE	JACKETING (SPECIFIC GRAVITY)	OUTSIDE DIAMETER (INCHES)	SUSTAINED LOAD TEST RESULTS (LBS.)	PERCENT OF BREAKING STRENGTH
2/0, 7W, 4/64s	Poly. (.928)	.539	1,800	104%
1/0, 7W, 4/64s	Poly. (.931)	.493	2,200	101%
1/0, 7W, 4/64s	Neoprene	.493	1,650	98%
2/0, 7W, 4/64s	Neoprene	.539	2,100	99%
366.4, 19W, 4/64s	Poly. (.933)	.791	4,500	79%
400, 19W, 6/64s	Neoprene	.913	5,000	80%
250, 19W, 5/64s	Neoprene	.732	3,200	79%
397.5, 19W, 6/64s	Poly. (.928)	.912	4,700	72%
3/0, 7W, 8/64s	Poly. (.927)	.706	1,900	70%
336.4, 19W, 5/64s	Neoprene	.824	3,600	67%
500, 37W, 6/64s	Poly. (.926)	1.001	5,600	65%
336.4, 19W, 4/64s	Poly. (.920)	.791	3,600	63%
1/0, 7W, 4/64s	Poly. (.918)	.493	1,100	62%
#4, 6/1, 8/64s	Poly. (.929)	.502	950	54%
4/0, 7W, 10/64s	Poly. (.920)	.830	3,000	49%
4/0, 7W, .078	Vinyl	.695	1,600	47%
336.4, 19W, .150" Compacted	Poly. (.943)	.910	2,600	46%
266.8, 19W, 10/64s	Poly. (.966)	.885	1,800	40%
4/0, 6/1, 4/64s	Neoprene	.688	2,900	36%
1/0, 7W, 10/64s	Poly. (.982)	.678	600	33%
1/0, 7W, 10/64s	Poly. (.949)	.692	500	28%

This table is based on actual results of long term sustained load tests and may be considered representative of the cables described.

Refer to reference charts in this section for additional information on Holding Strengths.

Specific gravity of various polyethylenes:
ASTM Designation D-1248-58T

Low Density (g/cu. cm.)	0.910-0.925
Medium Density (g/cu. cm.)	0.926-0.940
High Density (g/cu. cm.)	0.941-0.965

Slack Span Dead-end

NOMENCLATURE

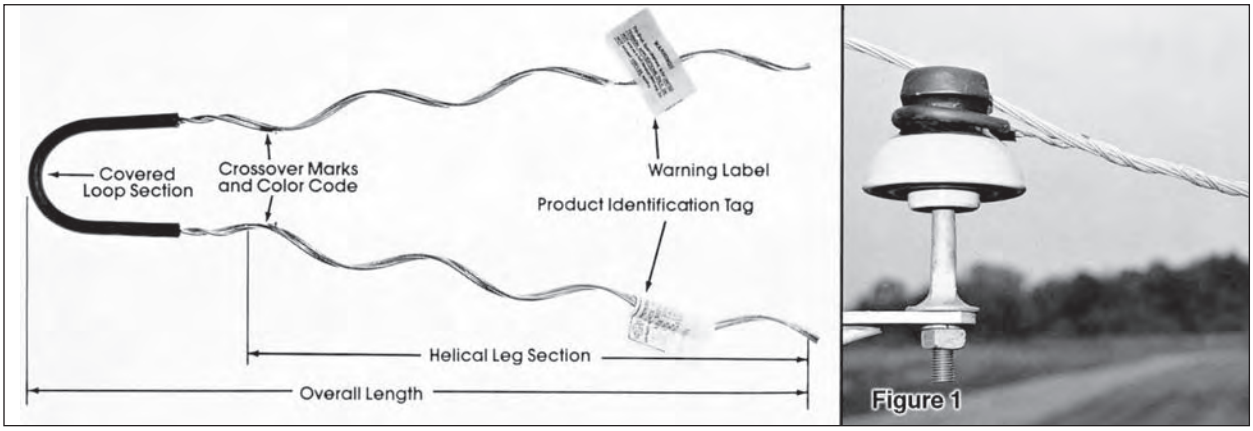


Figure 1

Dead-end Material Helical Leg Section: Aluminum covered steel.

Crossover Marks: Indicates starting point for application on conductor.

Color Code & Length: Assists in identification of conductor diameter range, corresponding to tabular information listed on catalog pages.

Covered Loop Section: Elastomeric compound specifically formulated for resistance to ozone attack, weathering and abrasion.

Product Identification Tag/Warning Label: Identifies catalog number, appropriate conductor types and sizes and product usage limitations.

GENERAL RECOMMENDATIONS

Slack Span Dead-end is intended for use on aluminum based conductors with diameter ranges from .229" to 1.216". It is specifically designed to terminate primary, secondary and neutral conductors.

Each Slack Span Dead-end covers a range of conductor diameters as outlined on catalog pages.

Conductor Tension Limitations: The Slack Span Dead-end is specifically designed for LIMITED TENSION APPLICATIONS. IT SHOULD NOT BE USED AS A FULL TENSION DEAD-END.

The Slack Span Dead-end is intended for use where guying (or other) restrictions prevent full tension spans. While individual utility construction and safety practices should dictate actual installations, each Slack Span Dead-end has a warning label attached suggesting a maximum allowable loaded tension of 1000 lbs. This value does not indicate a holding strength rating for Slack Span Dead-ends; rather, it suggests a practical limit for tensions in this type of construction.

The Slack Span Dead-end replaces conventional dead-ending equipment used in slack span construction.

Dead-end insulators, clamps, and associated hardware when used in this way normally do not offer tight, solid electrical connections between each other. This "looseness" can allow intermittent contact and ultimately produce troublesome RFI (RIV) and TVI. Construction practices utilizing the Slack Span Dead-end can minimize this problem.

The Slack Span Dead-end is specifically designed to be installed on pin, line post or spool insulators when used in limited tension construction. Refer to Figure 1 for a typical installation. Refer to Illustrations 1 and 2 and Acceptable Fitting Section for acceptable types and sizes of insulators and fittings.

Covered Loop Section: The loop of the dead-end is covered with an elastomer to provide protection against abrasion and damage to the glaze of the insulator. It also helps minimize RFI, TVI, etc.

The Slack Span Dead-end is designed to grip the conductor uniformly to prevent distortion. It also offers a unique design that eliminates bolts, nuts, washers and other component parts that may become lost or damaged during installation or in service.

Where requirements call for increased tension applications, use either the Distribution Grip dead-end or the Overhead dead-end. On jacketed conductors, use either coated dead-ends or Distribution Grip dead-ends.

Where requirements call for dead-ending conductors associated with bare neutral messengers or self-supporting cable used in making service drops, use Service Grip Dead-ends.

Slack Span Dead-end

INSTALLATION GUIDELINES

Conductor Compatibility: Slack Span dead-ends should be used only on the size and type of conductor for which they are designed. They must have the same lay as the conductor to which they are being applied. When ordering Slack Span dead-ends, make sure to specify the conductor size and type they are to be used on. When using types and/or sizes of conductors **not** mentioned in these catalog pages, consult Preformed Line Products Company.

During installation, and at all times, care should be taken to avoid gouging or damaging the protective coating of the Slack Span dead-end or the conductor itself.

Slack Span dead-ends should not be used as tools; i.e., come-alongs, pulling-in grips, etc.

Tools are not required to install Slack Span dead-ends, except for hot stick applications.

Tapping: Tapping over the legs of the Slack Span dead-end is NOT recommended. Taps can be made beyond the ends of the dead-end on the conductor or on the conductor tail that extends through the loop.

Slack Span dead-ends should not be used on overhead shield wires.

FOR ADDITIONAL INFORMATION REGARDING INSTALLATION, REFER TO THE Slack Span dead-end APPLICATION PROCEDURE.

When in doubt about dimensions, fittings, installations, or unusual applications, consult your PREFORMED™ Sales Representative or Preformed Line Products Company.

ACCEPTABLE FITTINGS

Slack Span dead-ends are specifically designed to be applied around the necks of certain pin, line post and spool insulators.

Slack Span dead-ends can be applied to either:
a. ANSI "C" and "F" neck insulators and ANSI class 53-1 to 53-5 spool insulators, or
b. ANSI "J" neck insulators.

Refer to Illustration 1. for nominal insulator neck sizes and appropriate size Slack Span dead-end.

Application of Slack Span dead-ends to non-insulator fittings is acceptable as long as the fitting:
a. has smoothly contoured dimensions,
b. has a seat diameter (Illustration 2, Figure 1) consistent with the insulator neck diameters shown in Illustration 1.,
c. has a minimum groove width (Illustration 2, Figure 2) of 9/16".

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.

2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ product before application.

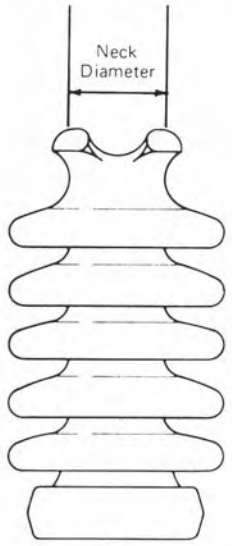
5. PREFORMED™ products are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Slack Span Dead-end

Illustration 1. Applicable Pin, Line post and Spool Insulators

CATALOG NUMBERS: SSDE-9122 through 9134 Pin Post & Spool Insulators

ANSI "C"-Neck: Nominal neck diameter 2-1/4"
ANSI "F"-Neck: Nominal neck diameter 2-7/8"



ANSI Class 53-1 to 53-5 Spool Nominal Neck Diameter 1-3/4" to 2-7/8"



CATALOG NUMBERS: SSDE-9142 through 9153 Pin Insulators

ANSI "J"-Neck: Nominal neck diameter 3-1/2"

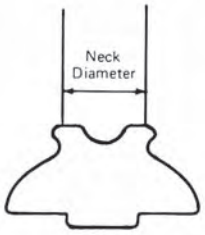


Illustration 2. Acceptable Dimensions for Non-Insulator Fittings

Fig. 2 Seat Diameter

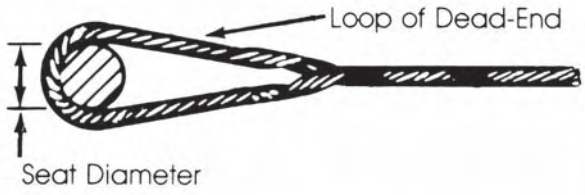
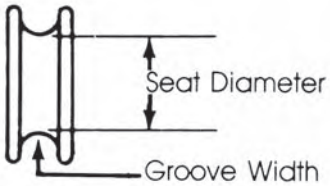


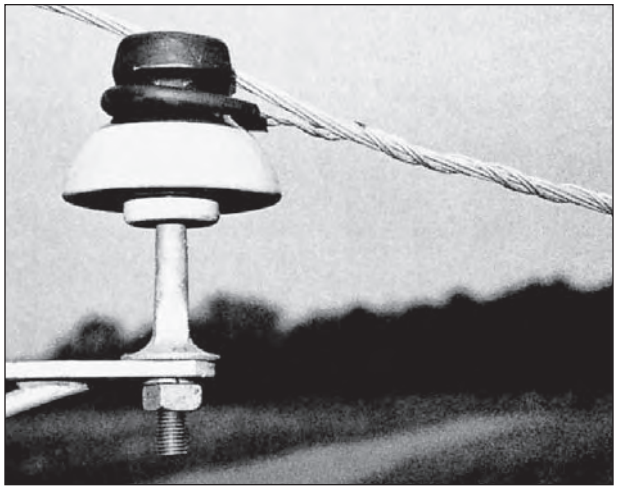
Fig. 3 Groove Width



Slack Span Dead-end

For use on:
ACAR, All-Aluminum
ACSR, Aluminum Alloy
AWAC®, Compacted ACSR

C-Neck and F-Neck Interchangeable Headstyle Insulators:
2-1/4" Neck Diameter
2-7/8" Neck Diameter
ANSI Class Spool Insulators:
ANSI 53-1, 53-2, 53-3
1-3/4" Neck Diameter
ANSI 53-4, 53-5
2-7/8" Neck Diameter



CATALOG NUMBER	CONDUCTOR		PER CARTON UNITS	LENGTH (INCHES)	COLOR CODE
	RANGE (INCHES)	NOMINAL SIZE			
SSDE-9122	.229-.257	#4 AWG	25	16	Orange
SSDE-9124	.290-.325	#2 AWG	25	18	Red
SSDE-9125	.326-.364	#1 AWG	25	19	Green
SSDE-9126	.365-.409	1/0 AWG	25	20	Yellow
SSDE-9127	.410-.460	2/0 AWG	25	18	Blue
SSDE-9128	.461-.516	3/0 AWG	25	18	Orange
SSDE-9129	.517-.577	4/0 AWG	25	19	Red
SSDE-9130	.578-.665	266.8 kcmil	25	21	Black
SSDE-9131	.666-.783	336.4 kcmil	25	21	Green
SSDE-9132	.784-.883	477 kcmil	25	22	Orange
SSDE-9133	.884-1.025	636 kcmil	25	25	Brown
SSDE-9134	1.026-1.216	795 kcmil	25	26	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) AWAC is a registered trademark of the Copperweld Co.
(2) Where dead-ending requirements call for other than **limited** tension requirements, refer to Distribution-Grip dead-ends, Dead-end-Coated, or Overhead dead-end.
(3) Where dead-ending requirements call for Service Grip dead-ends, refer to that section.
(4) Insulators with C and F neck dimensions can be identified by consulting the manufacturer.
(5) "Conductor Range" indicates the range of conductors that utilize the same dead-end.
(6) Refer to Illustrations 1 and 2 and Acceptable fittings portion of this section for dimensions of appropriate insulators and fittings.
(7) When in doubt about dimensions, insulators, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.

Slack Span Dead-end

For use on:
ACAR, All-Aluminum
ACSR, Aluminum Alloy
AWAC®, Compacted ACSR

J-Neck Interchangeable Headstyle Insulators:
3-1/2" Neck Diameter
ANSI 55-6 Single Skirt Pin
ANSI 55-7 Single Skirt Pin
ANSI 55-8 Double Skirt Pin

CATALOG NUMBER	CONDUCTOR		PER CARTON UNITS	LENGTH (INCHES)	COLOR CODE
	RANGE (INCHES)	NOMINAL SIZE			
SSDE-9142	.229-.357	#4 AWG	25	18	Orange
SSDE-9144	.290-.325	#2 AWG	25	19	Red
SSDE-9145	.326-.364	#1 AWG	25	20	Green
SSDE-9146	.365-.409	1/0 AWG	25	21	Yellow
SSDE-9147	.410-.460	2/0 AWG	25	19	Blue
SSDE-9148	.461-.516	3/0 AWG	25	20	Orange
SSDE-9149	.517-.577	4/0 AWG	25	21	Red
SSDE-9150	.578-.665	266.8 kcmil	25	22	Black
SSDE-9151	.666-.783	336.4 kcmil	25	23	Green
SSDE-9152	.784-.883	477 kcmil	25	24	Orange
SSDE-9153	.884-1.025	636 kcmil	25	27	Brown
SSDE-9154	1.026-1.216	795 kcmil	25	28	Orange

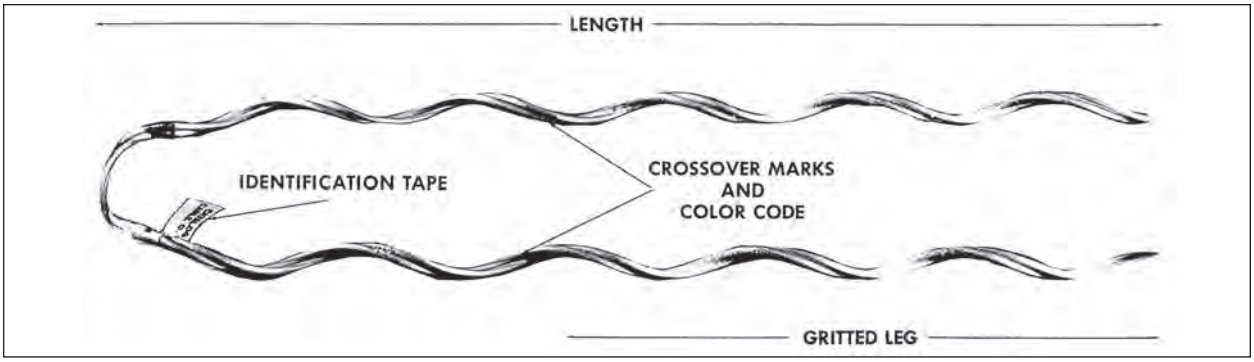
Right-hand lay standard

EXPLANATORY NOTES:

(1) AWAC is a registered trademark of the Copperweld Co.
(2) Where dead-ending requirements call for other than **limited** tension requirements, refer to Distribution Grip dead-ends, Dead-end-Coated, or Overhead dead-end.
(3) Where dead-ending requirements call for Service Grip dead-ends, refer to that section.
(4) Insulators with C and F neck dimensions can be identified by consulting the manufacturer.
(5) "Conductor Range" indicates the range of conductors that utilize the same dead-end.
(6) Refer to Illustrations 1 and 2 and Acceptable fittings portion of this section for dimensions of appropriate insulators and fittings.
(7) When in doubt about dimensions, insulators, fittings, installations, or unusual applications, consult your PREFORMED™ sales representative or Preformed Line Products Co.

Service-Grip Dead-end

NOMENCLATURE



Crossover Marks: Indicate starting point for application.

Color Code and Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

Service-Grip dead-end, manufactured of aluminum-covered steel, is designed for bare neutral messengers of self-supporting cable used in making service drops. The dead-end is recommended for service drops by reason of minimum length, economy, and neatness of appearance. Mechanical strength meets the requirements for NESC Grade "N", Rule 263-E, Supply Services, Spans not exceeding 150 feet.

For service drops exceeding 150 feet, Grade "C" Construction, the *Distribution Grip dead-end* is recommended.

Dead-end: Coated is recommended for direct application over plastic jacketed open-wire service drops.

RATED HOLDING STRENGTH. Published for individual sizes on the page following the initial specification page. In arriving at "Rated Holding Strengths", actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed. These minimum values are conservative when compared to "typical" values, or, actual tests on conductor which has been in service.

TAPPING. Tapping over the applied legs of *Service-Grip dead-end* is **not** recommended. Taps can be made on the conductor, ahead of the dead-end, or, the conductor can continue through the crossover point of the grip with connectors applied to the continued tail.

VIBRATION DAMPERS. No consideration of dampening devices with *Service-Grip dead-ends* is made since *Distribution-Grip dead-ends* are recommended when vibration is suspected.

APPLICATION-INSPECTION. Dead-ends should not be re-used after original installation.

Lay direction of both the dead-end and the conductor should be the same. Lay direction of most neutral-messengers is right hand lay.

The loops of *Service-Grip dead-ends* should not be crisscrossed, when two or more are applied to the same spool.

(Continued)

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.

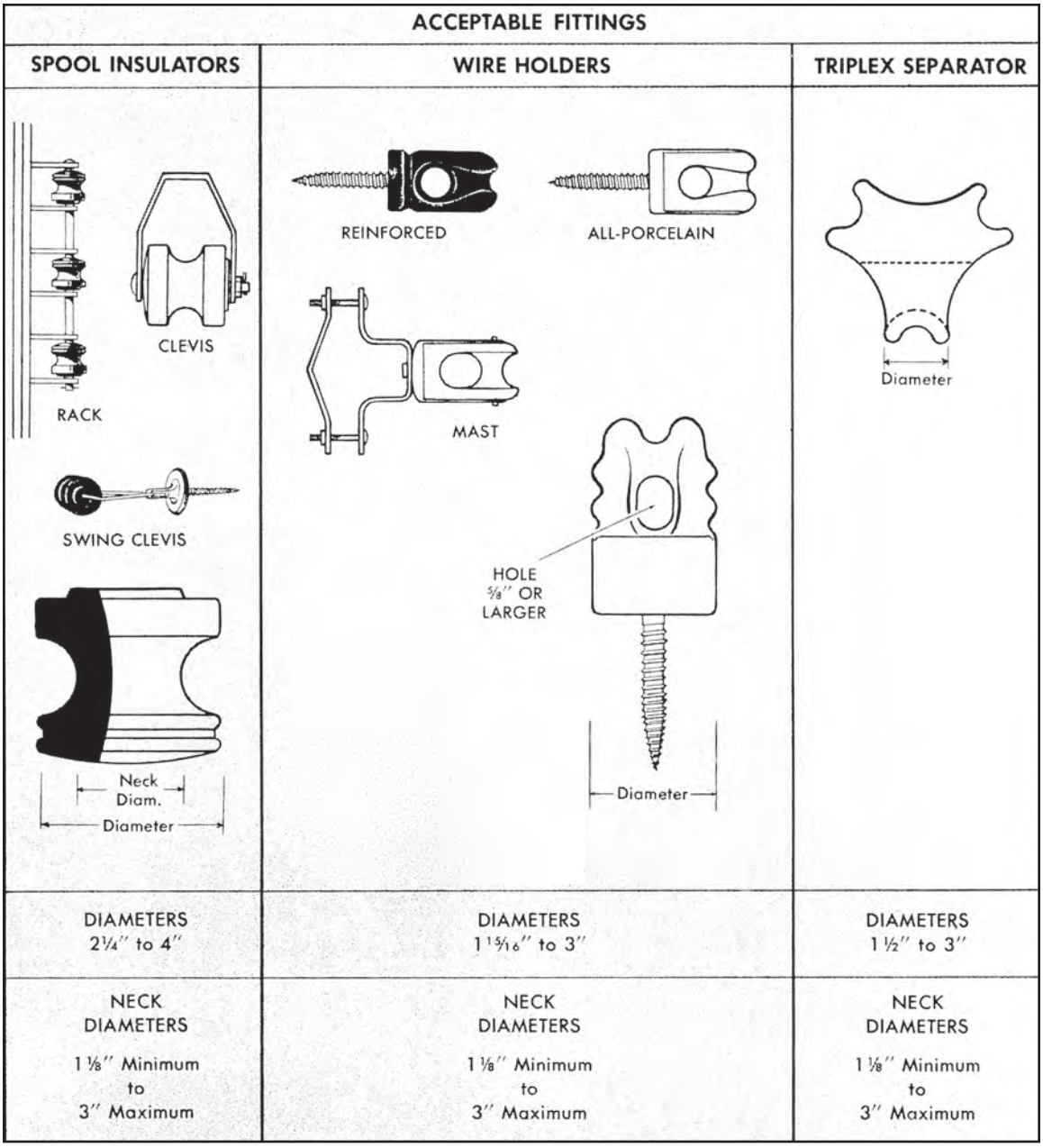
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.

3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.

(Continued)

Service-Grip Dead-end

GENERAL RECOMMENDATIONS CONTD.



Loops of the **Service-Grip dead-end** are designed for use with a variety of porcelain fittings. These fittings are recommended because they have smoothly contoured diameters between 1-1/8" minimum and 3" maximum. Refer to catalog pages for maximum neck diameters for specific Service-Grip dead-ends.

Consult PLP for fittings not appearing in this table.

SAFETY CONSIDERATIONS CONTD.

4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size Service-Grip dead-end before application.
5. Service-Grip dead-ends are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Service-Grip Dead-end

For use on:
ACSR, All-Aluminum
Aluminum Alloy, Compacted ACSR
Compacted All-Aluminum



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZES				UNITS / WT./LBS.		LENGTH (INCHES)	COLOR CODE	MAX. NECK DIA. (INCHES)
	MIN.	MAX.	ACSR	ALL-ALUM.	ALUM. ALLOY	COMP.	PER CARTON				
SG-4500	.169	.198	#6, 6/1	#6, 7W	#6, 7W	#6, 6/1 #6, 7W	300	24	11	Blue	2-3/8
SG-4501	.199	.224	#5, 6/1	#4, Solid	#5, 7W	#4, 7W	300	27	12	White	2-3/8
SG-4502	.225	.257	#4, 6/1 #4, 7/1	#4, 7W	#4, 7W	#4, 6/1 #4, 7/1	300	29	13	Orange	2-3/8
SG-4503	.258	.289	#3, 6/1	#3, 7W #2, Solid	#3, 7W	#3, 6/1 #2, 7W	200	27	14	Black	2-5/8
SG-4504	.290	.325	#2, 6/1 #2, 7/1	#2, 7W	#2, 7W	#2, 6/1 #1, 7W	200	28	15	Red	2-5/8
SG-4505	.326	.360	#1, 6/1	#1, 7W	#1, 7W	#1, 6/1 1/0, 7W	200	31	17	Green	2-5/8
SG-4506	.361	.400	1/0, 6/1	1/0, 7W	1/0, 7W	1/0, 6/1 2/0, 7W	100	28	19	Yellow	2-7/8
SG-4507	.401	.450	2/0, 6/1	2/0, 7W	2/0, 7W	2/0, 6/1 3/0, 7W	100	31	21	Blue	2-7/8
SG-4508	.451	.510	3/0, 6/1	3/0, 7W	3/0, 7W	4/0, 7W	100	33	23	Orange	2-7/8
SG-4509	.511	.580	4/0, 6/1 4/0, 18/1	4/0, 7W	4/0, 7W	4/0, 6/1	100	37	26	Red	3

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal conductor size indicates a few of the various conductors within each range. Refer to the following page for additional conductor sizes interchangeable with the same dead-end. Consult PLP for sizes or strandings not shown.
(2) Refer earlier in this section for acceptable fittings.
(3) Rated Holding Strengths are listed on the following page.

Service-Grip Dead-end

RATED HOLDING STRENGTHS Holding strengths of the applied dead-ends are shown in pounds. Percentage of conductor RBS shown in parentheses.						
CATALOG NUMBER	SIZE	ACSR	ALL-ALUM.	ALUM. ALLOY	COMPACTED ACSR	COMPACTED ALL-ALUM.
SG-4500	#6	#6, 6/1 595 lbs. (50%)	#6, 7W 488 lbs. (88%)	#6, 7W 840 lbs. (80%)	#6, 6/1 585 lbs. (50%)	#6, 7W 500 lbs. (90%)
	#5		#5 Solid 549 lbs. (88%)			
SG-4501	#5	#5, 6/1 730 lbs. (50%)		#5, 7W 1,080 lbs. (80%)		
	#4		#4 Solid 772 lbs. (88%)			#4, 7W 788 lbs. (90%)
SG-4502	#4	#4, 6/1 915 lbs. (50%)	#4, 7W 770 lbs. (88%)	#4, 7W 1,336 lbs. (80%)	#4, 6/1 915 lbs. (50%)	
		#4, 7/1 1,144 lbs. (50%)			#4, 7/1 1,145 lbs. (50%)	
	#3		#3, Solid 854 lbs. (88%)			
SG-4503	#3	#3, 6/1 1,125 lbs. (50%)	#3, 7W 900 lbs. (88%)	#3, 7W 1,720 lbs. (80%)	#3, 6/1 1,125 lbs. (50%)	
	#2		#2 Solid 1,078 lbs. (88%)			
	#1		#1 Solid 1,331 lbs. (88%)			#2, 7W 1,202 lbs. (90%)
SG-4504	#2	#2, 6/1 1,395 lbs. (50%)	#2, 7W 1,175 lbs. (88%)	#2, 7W 2,124 lbs. (80%)	#2, 6/1 1,395 lbs. (50%)	
					#2, 7/1 1,763 lbs. (50%)	
	#1					#1, 7W 1,383 lbs. (90%)
SG-4505	#1	#1, 6/1 1,740 lbs. (50%)	#1, 7W 1,430 lbs. (88%)	#1, 7W 2,736 lbs. (80%)	#1, 6/1 1,740 lbs. (50%)	
	1/0					1/0, 7W 1,773 lbs. (90%)
						1/0, 19W 1,881 lbs. (90%)
SG-4506	1/0	1/0, 6/1 2,140 lbs. (50%)	1/0, 7W 1,734 lbs. (88%)	1/0, 7W 3,384 lbs. (80%)	1/0, 6/1 2,140 lbs. (50%)	
		5/1 1,688 lbs. (50%)				
	2/0					2/0, 7W 2,232 lbs. (90%)
						2/0, 19W 2,327 lbs. (90%)
SG-4507	2/0	2/0, 6/1 2,673 lbs. (50%)	2/0, 7W 2,182 lbs. (88%)	2/0, 7W 4,044 lbs. (80%)	2/0, 6/1 2,673 lbs. (50%)	
	3/0					3/0, 7W 2,705 lbs. (90%)
						3/0, 19W 2,880 lbs. (90%)
SG-4508	3/0	3/0, 6/1 3,338 lbs. (50%)	3/0, 7W 2,644 lbs. (88%)	3/0, 7W 5,092 lbs. (80%)	3/0, 6/1 3,338 lbs. (50%)	
	4/0					4/0, 7W 3,411 lbs. (90%)
						4/0, 19W 3,501 lbs. (90%)
SG-4509	4/0	4/0, 6/1 4,210 lbs. (50%)	4/0, 7W 3,335 lbs. (88%)	4/0, 7W 6,420 lbs. (80%)	4/0, 6/1 4,210 lbs. (50%)	
		4/0, 5/1 3,300 lbs. (50%)				
		4/0, 18/1 2,923 lbs. (50%)				

EXPLANATORY NOTES:
(1) Refer to General Recommendations for explanation of "Related Holding Strength".
(2) Consult PLP for sizes or strandings not shown.

PREFORMED LINE PRODUCTS

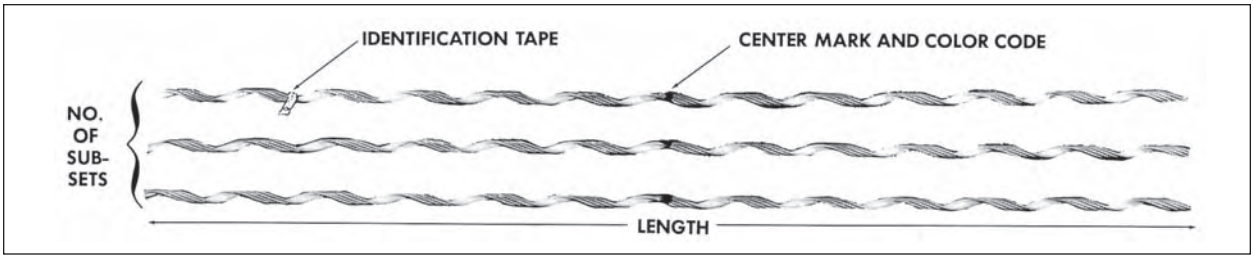
Section 11 – Distribution (Overhead): Splices

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Conductor Splice

NOMENCLATURE



Sub-Sets: Individual rods assembled and gritted into groups (subsets), corresponding to tabular information appearing on catalog page.

Center Mark: Establishes recommended alignment of rods during application.

Color Code and Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog page.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

Conductor Splices are designed as a single-component outer-layer assembly generally for Sub-EHV applications.

Conductor splices are available for EHV applications. Consult PLP for details.

JOINING: On all-aluminum, aluminum alloy, and copper conductors of homogenous stranding, the Conductor Splice will hold a minimum of 90% of the rated breaking strength of, and provide better conductance than, an equal length of unspliced conductor.

On ACSR conductor, the *Conductor Splice* will hold a minimum tension amounting to the full strength of the aluminum strands plus 10% of the steel core strength. Conductance will be better than in an equivalent length of unspliced conductor.

RESTORATIVE-REPAIR: *Conductor Splices* will restore original conductivity to all-aluminum, aluminum alloy, copper, and ACSR type conductors.

Full-rated breaking strength will be restored to homogeneous stranded conductors. On ACSR, strength will be restored to all of the aluminum strands, but not to the core. When core damage on ACSR is suspected, consult the following catalog section for *Splice: ACSR F.T.*

Other PREFORMED™ products with restorative-repair capabilities are *Armor Rods, Line Guards,* and *ARMOR-GRIP® Suspension: for Line Repair.*

RATED HOLDING STRENGTH: Published for individual sizes on the page following the specification page. In arriving at "Rated Hold Strength," actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed.

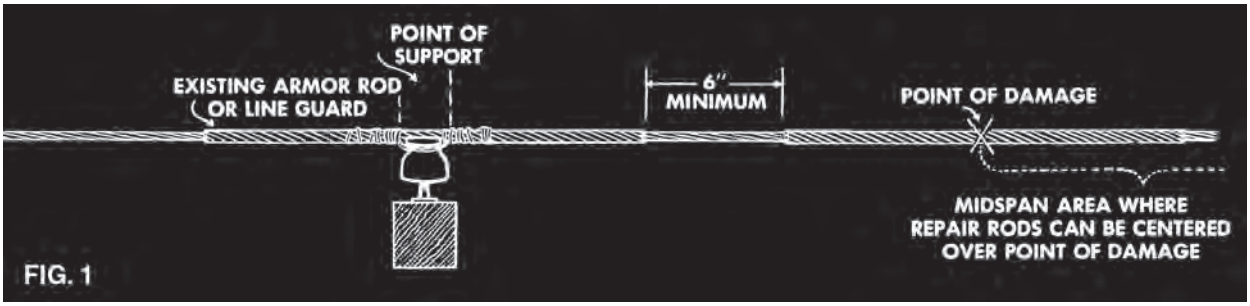
APPLICATION-INSPECTION: All conductors, new or weathered, must be thoroughly scratch brushed until bright and clean. Immediately thereafter, an industry accepted inhibitor (compatible with the conductor) should be applied befor installing the product.

TAPPING: Tapping over a conductor splice is permissible. Whenever a tapping clamp will be installed over a splice, it is imperative that the conductor be scratch brushed and an inhibitor be used. The outer surface of the splice should be thoroughly scratch brushed to remove any oxides and glue which may be present. Inhibitor should then be applied to the area beneath the tap itself.

Thermal Rating (Continuous)
125°C

Conductor Splice

GENERAL RECOMMENDATIONS CONTD.



When centered over the point of damage, the ends of the *Conductor Splice* should not be positioned closer than 6 inches to existing *Armor Rods* or *Line Guards*. The Restorative-Repair function of this splice should be limited to damage located within the "Midspan Area" or the "Point of Support". (See Figure 1)

Conductor Splice

DESIGN MODIFICATIONS

Armor Splice

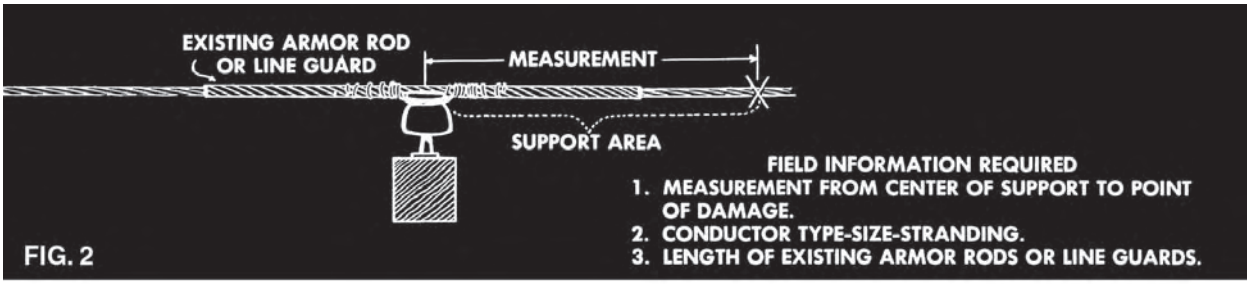


FIG. 2

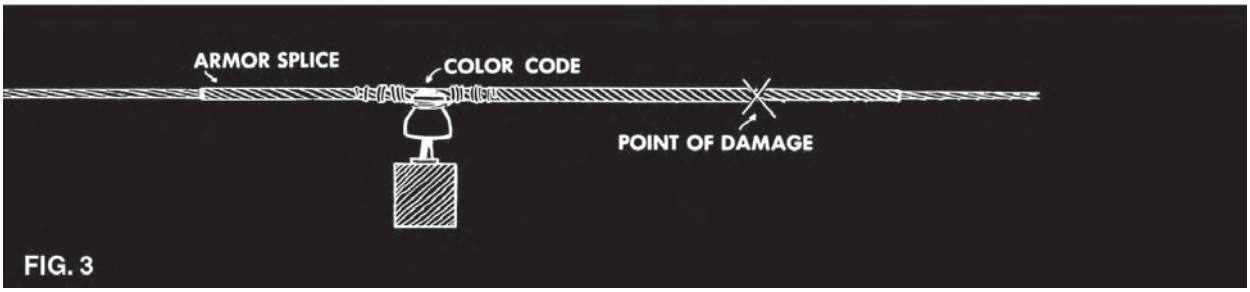


FIG. 3

The *Armor Splice* combines the features of both *Armor Rods* and *Conductor Splices*, which are described in their respective catalog sections. The *Armor Splice* should be considered when damage occurs in the "support area," or where installation would locate the ends of repair rods within 6 inches of existing rods.

Upon receipt of the field information specified in Figure 2, PLP will furnish the correct Catalog Number. The *Armor Splice* is custom designed to assure that when the color code mark is centered at the support point, a continuous length will extend beyond the area of damage. (See Figure 3)

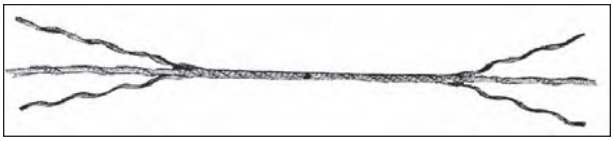
O.D. CALCULATIONS

Applied overall diameter computed as follows:
The rod diameter can be obtained from the price page tables. Conductor O.D. can be found in the Conductor Chart, General Information Section.

Rod Diam.	.121" x 2 = .242"
Conductor Diam.	+ .398"
Total Applied O.D.	.640"

Conductor Splice – Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy
AWAC® Conductor



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS	WT./LBS.	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
	MIN.	MAX.		PER CARTON					
LS-0106	.177	.184	#6, 7W All-Alum.	50	6	21	.086	2	Purple
LS-0108	.194	.202	#6, 6/1 #6, 7W Alum. Alloy	50	6	22	.086	2	Blue
LS-0112	.229	.239	#4, 7W All-Alum.	50	9	24	.086	2	Brown
LS-0114	.247	.257	#4, 6/1 - 7/1 #4, 7W Alum. Alloy	50	10	26	.094	3	Orange
LS-0115	.258	.270	#3, 7W All-Alum.	50	11	26	.094	3	Green
LS-0116	.271	.280	#3, 7W Alum. Alloy	50	12	27	.094	3	Yellow
LS-0118	.290	.298	#2, 7W All-Alum.	50	13	28	.094	3	Purple
LS-0119	.299	.310	#2, AWAC 6/1 #3, AWAC 5/2	50	15	30	.102	3	Brown
LS-0120	.311	.325	#2, 6/1 - 7/1 #2, 7W Alum. Alloy	50	16	31	.102	3	Red
LS-0121	.326	.340	#1, 7W All-Alum.	50	16	31	.102	3	Blue
LS-0122	.341	.351	#1, AWAC 6/1	50	17	33	.102	3	Orange
LS-0123	.352	.367	#1, 6/1 #1, 7W Alum. Alloy	50	19	34	.102	3	Green
LS-0124	.368	.380	#1, AWAC 5/2 1/0, 7W All-Alum.	50	27	38	.121	3	Black
LS-0125	.381	.398	1/0, AWAC 6/1 1/0, 6/1 1/0, 7W Alum. Alloy	50	27	38	.121	3	Yellow
LS-0127	.414	.425	2/0, 7W All-Alum.	50	27	40	.121	3	Brown
LS-0129	.444	.462	2/0, 6/1 2/0, 7W Alum. Alloy	50	37	42	.136	3	Blue
LS-0130	.463	.481	3/0, 7W All-Alum.	50	43	46	.136	3	Green
LS-0131	.482	.503	3/0, 7W, Alum. Alloy 3/0, AWAC 6/1 3/0, 6/1	50	46	46	.146	3	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.

(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.

(3) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splice – Aluminum

CATALOG NUMBER	SIZE	RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses. ACSR	ALL-ALUMINUM	ALUMINUM ALLOY	AWAC
LS-0106	#6		#6, 7W 555 lbs. (100%)		
LS-0108	#6	#6, 6/1 702 lbs. (60%)		#6, 7W 1,050 lbs. (100%)	
LS-0112	#4		#4, 7W 875 lbs. (100%)		
LS-0114	#4	#4, 6/1 1,098 lbs. (60%) #4, 7/1 1,374 lbs. (60%)		#4, 7W 1,670 lbs. (100%)	
LS-0115	#3		#3, 7W 1,023 lbs. (100%)		
	#4				#4, 5/2 2,790 lbs. (100%)
LS-0116	#3			#3, 7W 2,150 lbs. (100%)	
LS-0118	#2		#2, 7W 1,335 lbs. (100%)		
LS-0119	#3				#3, 5/2 3,500 lbs. (100%)
	#2				#2, 6/1 1,590 lbs. (60%)
LS-0120	#2	#2, 6/1 1,674 lbs. (60%) #2, 7/1 2,115 lbs. (60%)		#2, 7W 2,655 lbs. (100%)	
LS-0121	#1		#1, 7W 1,625 lbs. (100%)		
LS-0122	#1				#1, 6/1 1,986 lbs. (60%)
LS-0123	#1	#1, 6/1 2,088 lbs. (60%)		#1, 7W 3,420 lbs. (100%)	
LS-0124	#1				#1, 5/2 5,450 lbs. (100%)
	1/0		1/0, 7W 1,970 lbs. (100%)		
LS-0125	1/0	1/0, 6/1 2,568 lbs. (60%)		1/0, 7W 4,230 lbs. (100%)	1/0, 6/1 2,448 lbs. (100%)
LS-0127	2/0		2/0, 7W 2,480 lbs. (100%)		
LS-0129	2/0	2/0, 6/1 2,940 lbs. (55%)		2/0, 7W 5,055 lbs. (100%)	
LS-0130	3/0		3/0, 7W 3,005 lbs. (100%)		
LS-0131	3/0	3/0, 6/1 3,671 lbs. (55%)		3/0, 7W 6,365 lbs. (100%)	3/0, 6/1 3,333 lbs. (55%)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".

(2) For sizes or strandings not shown, consult PLP.

(3) Refer to the Splice: ACSR F. T. section for an alternate product with higher Rated Holding Strength on ACSR type conductors.

(4) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splice – Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy
AWAC® Conductor

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
LS-0133	.522	.544	3/0, AWAC 5/2 4/0, 7W All-Alum.	50	66	51	.167	3	Black
LS-0134	.545	.567	4/0, 7W Alum. Alloy 4/0, 6/1	25	33	52	.167	3	Red
LS-0135	.568	.594	250, 19W-37W All-Alum. 4/0, AWAC 15/4 266.8, 7W-19W-37W All-Alum.	25	48	61	.182	3	Blue
LS-0136	.595	.618	266.8, 18/1	25	50	63	.182	3	Purple
LS-0137	.619	.644	266.8, 26/7 300, 19W-37W All-Alum.	25	58	67	.182	3	Yellow
LS-0138	.645	.671	300, 18/1 336.4, 19W-37W All-Alum.	25	66	69	.204	3	Brown
LS-0139	.672	.700	300, 26/7 - 30/7 336.4, 18/1 - 36/1 350, 19W-37W All-Alum.	25	68	70	.204	3	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.

(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.

(3) For an example of applied overall diameter see "O.D. CALCULATIONS" at the beginning of this section.

Conductor Splice – Aluminum

CATALOG NUMBER	SIZE	RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses. ACSR	ALL-ALUMINUM	ALUMINUM ALLOY	AWAC
LS-0133	3/0				3/0, 5/2 9,660 lbs. (100%)
	4/0		4/0, 7W 3,790 lbs. (100%)		
LS-0134	4/0	4/0, 6/1 4,631 lbs. (55%)		4/0, 7W 8,025 lbs. (100%)	4/0, 6/1 4,059 lbs. (55%)
LS-0135	4/0				4/0, 15/4 7,560 lbs. (70%)
	250MCM		250, 19W 4,510 lbs. (100%) 250, 37W 4,860 lbs. (100%)		
	266.8MCM		266.8, 7W 4,775 lbs. (100%) 266.8, 19W 4,800 lbs. (100%) 266.8, 37W 5,185 lbs. (100%)		
LS-0136	266.8MCM	266.8, 18/1 5,130 lbs. (75%)			
LS-0137	266.8MCM	266.8, 26/7 5,625 lbs. (50%)		266.8, 19W 10,610 lbs. (100%)	
	300MCM		300, 19W 5,300 lbs. (100%) 300, 37W 5,830 lbs. (100%)		
LS-0138	300MCM	300, 18/1 5,768 lbs. (75%)			
	336.4MCM		336.4, 19W 5,940 lbs. (100%) 336.4, 37W 6,420 lbs. (100%)		
LS-0139	300MCM	300, 26/7 6,325 lbs. (50%) 300, 30/7 7,715 lbs. (50%)			
	336.4MCM	336.4, 18/1 6,469 lbs. (75%) 336.4, 36/1 5,732 lbs. (75%)			
	350MCM		350, 19W 6,180 lbs. (100%) 350, 37W 6,680 lbs. (100%)		

Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for an explanation of "Rated Holding Strength".

(2) For sizes or strandings not shown, consult PLP.

(3) Refer to the Splice: ACSR F. T. Section for an alternate product with higher rated holding strength on ACSR-type conductors.

(4) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splice – Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy

CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
	MIN.	MAX.							
LS-0140	.701	.729	336.4, 26/7 336.4, 19W Alum. Alloy 397.5, 19W-37W All-Alum. 400, 19W-37W All-Alum.	15	62	77	.250	3	Green
LS-0141	.730	.760	336.4, 30/7 397.5, 18/1	15	64	79	.250	3	Black
LS-0142	.761	.792	397.5, 26/7 397.5, 19W Alum. Alloy 450, 19W-37W All-Alum.	15	74	83	.250	3	Purple
LS-0143	.793	.825	477, 18/1 - 36/1 477, 19W-37W All-Alum. 500, 19W-37W All-Alum.	3	18	84	.250	3	Red
LS-0145	.851	.886	477, 26/7 556.5, 18/1 - 36/1 556.5, 19W-37W All-Alum.	3	23	99	.250	4	Orange

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.

(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.

(3) For an example of applied overall diameter see "O.D. CALCULATIONS" at the beginning of this section.

Conductor Splice – Aluminum

RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses.				
CATALOG NUMBER	NOMINAL CONDUCTOR SIZE	ACSR	ALL-ALUMINUM	ALUMINUM ALLOY
LS-0140	363.4	336.4, 26/7 7,025 lbs. (50%)		336.4, 19W 12,830 lbs. (100%)
	397.5		397.5, 19W 6,880 lbs. (100%) 397.5, 37W 7,305 lbs. (100%)	
	400		400, 19W 6,928 lbs. (100%) 400, 37W 7,350 lbs. (100%)	
LS-0141	336.4	336.4, 30/7 8,520 lbs. (50%)		
	397.5	397.5, 18/1 7,530 lbs. (75%) 397.5, 36/1 6,555 lbs. (75%)		
LS-0142	397.5	397.5, 26/7 8,095 lbs. (50%)		397.5, 19W 13,617 lbs. (90%)
	450		450, 19W 7,630 lbs. (100%) 450, 37W 8,110 lbs. (100%)	
LS-0143	477	477, 18/1 8,903 lbs. (75%) 477, 36/1 7,740 lbs. (75%)	477, 19W 8,090 lbs. (100%) 477, 37W 8,600 lbs. (100%)	
	500		500, 19W 8,480 lbs. (100%) 500, 37W 9,100 lbs. (100%)	
	477			477, 19W 16,371 lbs. (90%)
LS-0145	477	477, 26/7 9,715 lbs. (50%)		
	550		550, 37W 9,720 lbs. (100%) 550, 61W 9,440 lbs. (90%)	
	556.5	556.5, 18/1 10,388 lbs. (75%) 556.5, 36/1 8,850 lbs. (75%)	556.5, 19W 9,440 lbs. (100%) 556.5, 37W 9,830 lbs. (100%)	

Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".

(2) For sizes or strandings not shown, consult PLP.

(3) Refer to the Splice: ACSR F. T. Section for an alternate product with higher rated holding strength on ACSR-type conductors.

(4) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splice – Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MIN.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS.	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
LS-0146	.887	.929	605, 36/1 636, 37W-61W All-Alum.	3	31	105	.310	3	Orange
LS-0147	.930	.968	636, 18/1 - 36/1 666.6 - 36/1	3	36	108	.310	4	Brown
LS-0148	.969	1.008	636, 54/7 - 26/7 666.6, 54/7 715.5, 36/1	3	37	111	.310	4	Yellow
LS-0149	1.009	1.050	795, 36/1 795, 37W-61W All-Alum.	3	39	121	.310	4	Green

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.

(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.

(3) For an example of applied overall diameter see "O.D. CALCULATIONS" at the beginning of this section.

Conductor Splice – Aluminum

RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses.				
CATALOG NUMBER	NOMINAL CONDUCTOR SIZE	ACSR	ALL-ALUMINUM	ALUMINUM ALLOY
LS-0146	500	500, 30/7 12,225 lbs. (50%)		
	556.5	556.5, 26/7 11,200 lbs. (50%)		556.5, 19W 19,080 lbs. (90%)
	605	605, 36/1 9,600 lbs. (75%)		
	636		636, 37W 11,240 lbs. (100%) 636, 61W 10,520 lbs. (100%)	
LS-0147	605	605, 30/7 12,050 lbs. (50%) 605, 54/7 11,250 lbs. (50%)		
	556.5	556.5, 30/7 13,600 lbs. (50%)		
	636	636, 18/1 11,873 lbs. (75%) 636, 36/1 10,088 lbs. (75%)		
	666	666.6, 36/1 10,575 lbs. (75%)		
	700		700, 37W 12,370 lbs. (100%) 700, 61W 11,570 lbs. (100%)	
LS-0148	636	636, 26/7 12,500 lbs. (50%)		
	636	636, 54/7 11,180 lbs. (50%)		636, 37W 21,690 lbs. (90%)
	715	715.5, 36/1 11,175 lbs. (75%)	715.5, 37W 12,640 lbs. (100%) 715.5, 61W 11,835 lbs. (100%)	
	750		750, 37W 2,990 lbs. (100%) 750, 61W 12,160 lbs. (100%)	
LS-0149	795	795, 36/1 12,405 lbs. (75%)	795, 37W 13,770 lbs. (100%) 795, 61W 12,900 lbs. (100%)	
	800		800, 37W 13,850 lbs. (100%) 800, 61W 12,970 lbs. (100%)	

Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".

(2) For sizes or strandings not shown, consult PLP.

Conductor Splice – Aluminum

For use on:
ACSR, All-Aluminum
Aluminum Alloy

CATALOG NUMBER	DIAMETER RANGE (INCHES) MIN.	MAX.	NOMINAL CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
LS-0150	1.051	1.091	874.5, 36/1 874.5, 37W-61W All-Alum.	3	45	127	.310	4	Black
LS-0151	1.092	1.136	795, 54/7 954, 37W– 61W All-Alum.	3	59	137	.365	4	Purple
LS-0152	1.137	1.183	954, 36/1– 45/7 1,033.5, 37W– 61W All-Alum.	3	62	141	.365	4	Red
LS-0153	1.184	1.232	1,033.5, 36/1– 45/7 1,113, 61W All-Alum.	3	63	143	.365	4	Blue
LS-0155	1.300	1.353	1,272, 45/7 1,272, 61W All-Alum.	3	101	165	.436	4	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

(1) Rated Holding Strengths are listed on the next page.

(2) Nominal Conductor size indicates one of various conductors within each range. Refer to the next page for additional conductor sizes interchangeable with the same conductor splice. Consult PLP for sizes not shown.

(3) For an example of applied overall diameter, see "O.D. CALCULATIONS" at the beginning of this section.

Conductor Splice

RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses.				
CATALOG NUMBER	NOMINAL CONDUCTOR SIZE	ACSR	ALL-ALUMINUM	ALUMINUM ALLOY
LS-0150	715.5	715.5, 26/7 14,050 lbs. (50%)		
	795	795, 45/7 11,450 lbs. (50%)		
	874.5	874.5, 36/1 13,425 lbs. (75%)	874.5, 37W 14,830 lbs. (100%) 874.5, 61W 14,200 lbs. (90%)	
LS-0151	795	795, 54/7 14,250 lbs. (50%) 795, 26/7 15,600 lbs. (50%)		795, 37W 27,135 lbs. (90%)
	900	900, 45/7 12,700 lbs. (50%)	900, 37W 15,270 lbs. (100%) 900, 61W 14,310 lbs. (90%)	
	954		954, 37W 16,180 lbs. (100%) 954, 61W 15,175 lbs. (90%)	
LS-0152	874.5	874.5, 54/7 15,700 lbs. (50%)		
	900	900, 54/7 16,5150 lbs. (50%)		
	954	954, 36/1 14,640 lbs. (75%) 954, 45/7 13,450 lbs. (50%)		
	1,000		1,000, 37W 16,960 lbs. (100%) 1,000, 61W 15,900 lbs. (90%)	
	1,033.5		1,033.5, 37W 17,530 lbs. (100%) 1,033.5, 61W 16,430 lbs. (90%)	
LS-0153	954	954, 54/7 17,100 lbs. (50%)		954, 37W 32,780 lbs. (90%)
	1,033.5	1,033.5, 36/1 15,825 lbs. (75%) 1,033.5, 45/7 14,450 lbs. (50%)		
	1,113		1,113, 61W 17,690 lbs. (90%)	
LS-0155	1,272	1,272, 45/7 17,700 lbs. (50%)	1,272, 61W 19,800 lbs. (90%)	

Right-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".

(2) For sizes or strandings not shown, consult PLP.

Conductor Splice

For use on:
AWAC® Conductor

ALUMINUM

CATALOG NUMBER	CONDUCTOR SIZE AWAC	CONDUCTOR SIZE OUTSIDE DIAMETER (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
LS-0185	#4 AWAC 4/3	.281	50	21	33	.121	3	Green
LS-0186	#3 AWAC 4/3	.316	50	27	36	.136	3	Purple
LS-0187	#2 AWAC 5/2	.330	50	24	36	.121	3	Green
LS-0188	#2 AWAC 4/3	.355	50	35	40	.146	3	Purple
LS-0189	#1 AWAC 4/3	.398	50	50	45	.167	3	Red
LS-0190	1/0 AWAC 5/2	.416	50	40	44	.136	3	Orange
LS-0191	1/0 AWAC 4/3	.447	50	61	50	.167	3	Brown
LS-0192	2/0 AWAC 5/2	.467	50	49	47	.146	3	Orange
LS-0193	2/0 AWAC 4/3	.502	50	41	55	.182	3	Black
LS-0194	3/0 AWAC 4/3	.564	50	55	59	.204	3	Yellow

ALUMINUM-CLAD STEEL

CATALOG NUMBER	CONDUCTOR SIZE AWAC	CONDUCTOR SIZE OUTSIDE DIAMETER (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	ROD DIAMETER (INCHES)	NO. OF SUBSETS	COLOR CODE
LS-5112	#4 AWAC 3/4	.307	50	34	30	.102	3	Purple
LS-5113	#4 AWAC 2/5 #3 AWAC 3/4	.340 .344	50	46	33	.114	3	Blue
LS-5114	#3 AWAC 2/5 #2 AWAC 3/4	.382 .386	50	67	38	.128	3	Brown
LS-5115	#2 AWAC 2/5 #1 AWAC 3/4	.429 .434	25	55	50	.144	3	Green
LS-5116	#1 AWAC 2/5 1/0 AWAC 3/4	.482 .487	25	75	55	.162	3	Red
LS-5117	1/0 AWAC 2/5 2/0 AWAC 3/4	.541 .547	10	48	67	.183	3	Green

Right-hand lay standard

EXPLANATORY NOTES:

(1) Conductor Splices for AWAC stranded 6/1, selected sizes stranded 5/2 and 5/4, not appearing above, can be found earlier in this section.

(2) Rated Holding Strengths are listed on the next page.

(3) Consult PLP for sizes, strandings, or lay direction not shown.

(4) For an example of applied overall diameter see O.D. CALCULATIONS at the beginning of this section.

(5) AWAC and Copperweld are registered trademarks of the Copperweld Co.

Conductor Splice

RATED HOLDING STRENGTHS Holding strengths of the applied splices are shown in pounds. Percentage of conductor RBS shown in parentheses.								
	AWAC SIZES							
CATALOG NUMBER	#4	#3	#2	#1	1/0	2/0	3/0	4/0
LS-0185	#4, 4/3 4,190 lbs. (100%)							
LS-5112	#4, 3/4 6,130 lbs. (100%)							
LS-5113	#4, 2/5 8,960 lbs. (100%)							
LS-0186		#3, 4/3 5,260 lbs. (100%)						
LS-5113		#3, 3/4 7,700 lbs. (100%)						
LS-5114		#3, 2/5 11,300 lbs. (100%)						
LS-0119			#2, 6/1 1,590 lbs. (100%)					
LS-0187			#2, 5/2 4,370 lbs. (100%)					
LS-0188			#2, 4/3 6,600 lbs. (100%)					
LS-5114			#2, 3/4 9,690 lbs. (100%)					
LS-5115			#2, 2/5 13,500 lbs. (100%)					
LS-0189				#1, 4/3 8,100 lbs. (100%)				
LS-5115				#1, 3/4 11,200 lbs. (100%)				
LS-5116				#1, 2/5 16,500 lbs. (100%)				
LS-0190					1/0, 5/2 6,580 lbs. (100%)			
LS-0191					1/0, 4/3 9,680 lbs. (100%)			
LS-5116					1/0, 3/4 13,800 lbs. (100%)			
LS-5117					1/0, 2/5 19,500 lbs. (100%)			
LS-0192						2/0, 5/2 8,030 lbs. (100%)		
LS-0193						2/0, 4/3 11,900 lbs. (100%)		
LS-5117						2/0, 3/4 16,400 lbs. (100%)		
LS-0194							3/0, 4/3 14,200 lbs. (100%)	

Right-hand lay standard

EXPLANATORY NOTES:

(1) Conductor Splices for AWAC stranded 6/1 or selected sizes stranded 5/2, not appearing above, can be found earlier in this section.

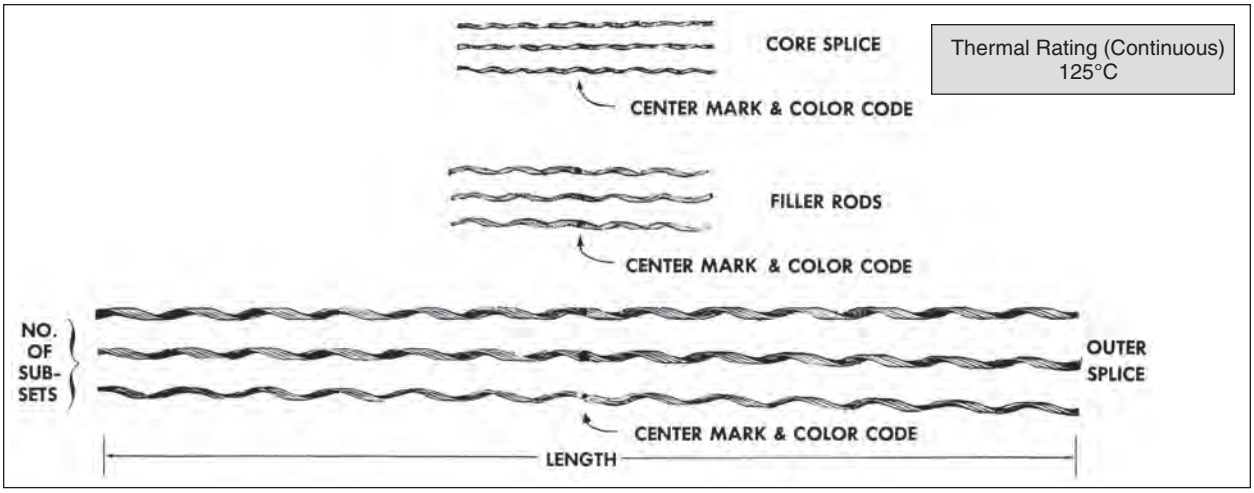
(2) Refer to General Recommendations at the beginning of this section for explanation of "Rated Holding Strength".

(3) Consult PLP for sizes, stranding or lay direction not shown.

(4) AWAC is a registered trademark of the Copperweld Co.

ACSR Full Tension Splice

NOMENCLATURE



Sub-Sets: Individual rods assembled into groups of two, three, or four.

Core Splice: Galvanized steel, sub-setted and gritted.

Filler Rods: Aluminum alloy, sub-setted, or single rods, not gritted. Filler Rods are not required for selected sizes corresponding to tabular information on catalog pages.

Outer Splice: Aluminum alloy, sub-setted and gritted.

Center Mark: Establishes recommended alignment of rods during application.

Color Code and Length: Assist in identification of conductor size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

SPLICE: ACSR F.T. is designed as a three component assembly generally for Sub-EHV applications. Full Tension Splices are available for EHV applications. Contact PLP for details.



The Core Splice is applied after removal of the aluminum strands down to the steel core.



Filler rods, when required, are applied over the Core Splice to re-establish the original outside diameter of the conductor.



The Outer Splice is identical in design to the Conductor Splice (earlier in this section) except for the overall length.

JOINING: This splice will hold the full rated breaking strength of, and provide better conductivity than, an equal length of unspliced ACSR conductor.

RESTORATIVE-REPAIR: *Splice: ACSR F.T.* will restore original conductivity and full rated breaking strength to ACSR conductor. This splice is recommended when damage to the core itself is suspected.

Other PREFORMED™ products with restorative-repair capabilities are *Armor Rods, Line Guards,* and *ARMOR-GRIP® Suspension: for Line Repair.*

RATED HOLDING STRENGTH: Published for individual sizes on the page following the specification page. In arriving at "Rated Hold Strength," actual results of tests on unweathered conductor are studied, and consideration is given to dimensional tolerances for the sizes encompassed.

APPLICATION-INSPECTION: All conductors, new or weathered, must be thoroughly scratch-brushed until bright and clean. Immediately thereafter, an industry accepted inhibitor (compatible with the product) should be applied before installing the product.

(Continued)

ACSR Full Tension Splice

GENERAL RECOMMENDATIONS CONTD.

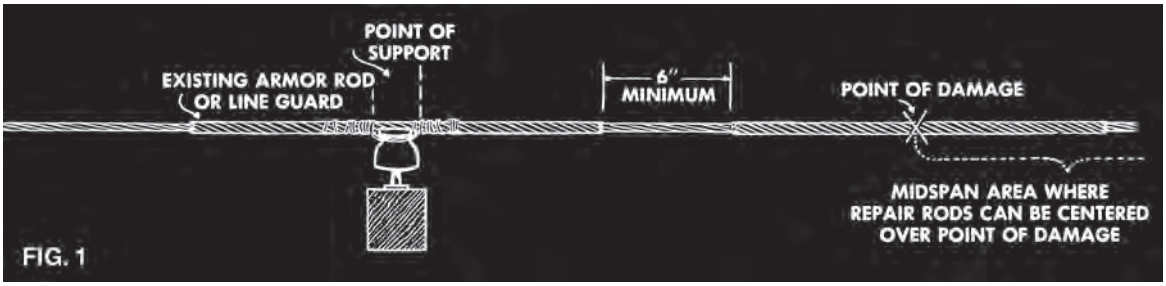


FIG. 1

When centered over the point of damage, the ends of the *Splice: ACSR F.T.* should not be positioned closer than 6 inches to existing *Armor Rods* or *Line Guards*. The restorative-repair function of this splice should be limited to damage located out in the "Midspan Area" or at the "Point of Support" (see Fig. 1).

TAPPING: Tapping over a *Splice: ACSR F.T.* is permissible. Whenever a tapping clamp will be installed over a splice, it is imperative that the conductor be scratch brushed and an inhibitor be used. The outer surface of the splice should be thoroughly scratch brushed to remove any oxides and glue which may be present. Inhibitor should then be applied to the area beneath the tap itself.

DESIGN MODIFICATIONS

Armor Splice

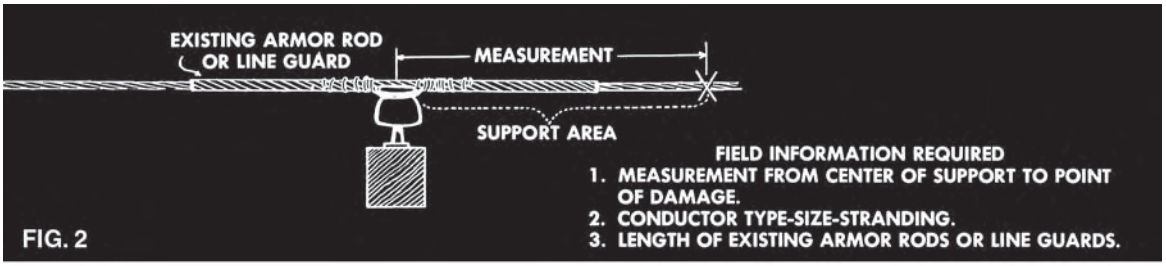


FIG. 2

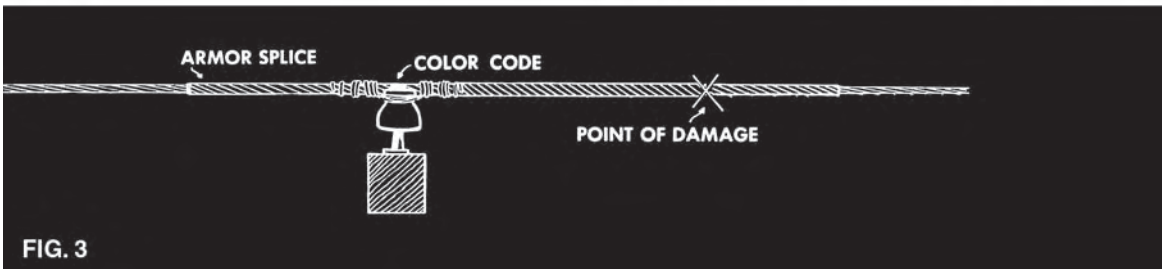


FIG. 3

The *Armor Splice* combines the features of both *Armor Rods* and *Conductor Splices*, which are described in their respective catalog sections. The *Armor Splice* should be considered when damage occurs in the "support area," or where installation would locate the ends of repair rods within 6 inches of existing rods.

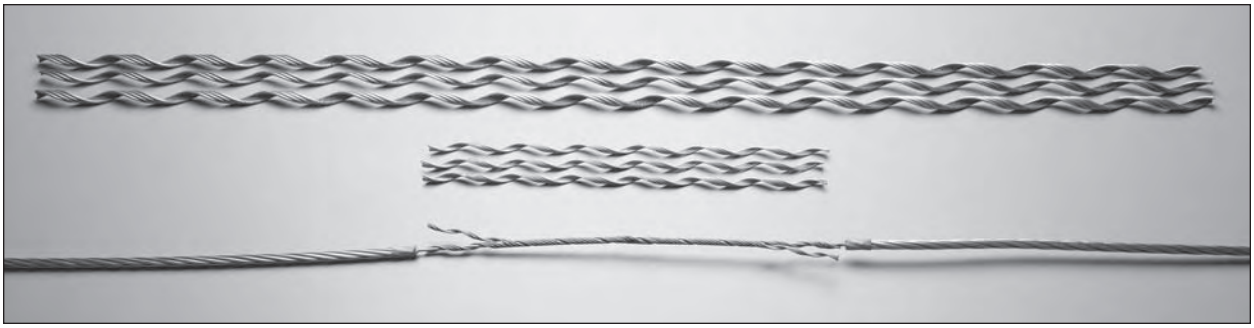
Upon receipt of the field information specified in Figure 2, PLP will furnish the correct Catalog Number. The *Armor Splice* is custom designed to assure that when the color code mark is centered at the support point, a continuous length will extend beyond the area of damage. (See Figure 3)

O.D. CALCULATIONS

Applied overall diameter computed as follows:
Conductor O.D. can be found in the Conductor Chart, General Information Section.

Rod Diam.	.121" x 2 = .242"
Conductor Diam.	+ .398"
Total Applied O.D.	.640"

ACSR Full Tension Splice



For use on: ACSR

CATALOG NUMBER	ACSR CONDUCTOR SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	OUTER SPLICE LENGTH (INCHES)	OUTER SPLICE NO. OF SUBSETS	ROD DIAMETER (INCHES)	COLOR CODES CORE	COLOR CODES FILLER	COLOR CODES OUTER
FTS-5100	#4, 6/1	100	34	35	3	.094	Black	None	Orange
FTS-5101	#4, 7/1	100	34	35	3	.094	Black	None	Orange
FTS-5102	#2, 6/1	100	58	44	3	.102	Black	None	Red
FTS-5103	#2, 7/1	100	66	45	3	.102	Black	None	Red
FTS-5104	1/0, 6/1	50	80	52	3	.121	Black	Black	Yellow
FTS-5105	2/0, 6/1	50	65	55	3	.136	Black	Black	Blue
FTS-5108	3/0, 6/1	25	38	59	3	.146	Black	Black	Orange
FTS-5110	4/0, 6/1	25	56	67	3	.167	Black	Black	Red
FTS-5106	101.8, 12/7	25	40	65	3	.136	Black	None	Blue
FTS-5107	110.8, 12/7	25	50	69	3	.136	Black	None	Green
FTS-5109	134.6, 12/7	10	68	75	3	.167	Black	None	Purple
FTS-5111	266.8, 26/7	10	40	91	3	.182	Black	Black	Yellow
FTS-5112	336.4, 18/1	10	40	87	3	.204	Black	Black	Blue
FTS-5113	336.4, 26/7	10	65	103	3	.250	Black	Black	Green
FTS-5114	336.4, 30/7	10	70	108	3	.250	Black	Black	Orange
FTS-5115	397.5, 26/7	5	40	110	3	.250	Black	Black	Purple
FTS-5116	477, 24/7	5	40	113	3	.250	Black	Black	Blue
FTS-5117	477, 26/7	5	48	120	4	.250	Black	Black	Blue
FTS-5118	556.5, 26/7	3	44	129	3	.310	Black	Black	Green
FTS-5119	636, 24/7	3	48	132	4	.310	Black	Black	Yellow
FTS-5120	636, 26/7	3	50	134	4	.310	Black	Black	Yellow
FTS-5121	795, 45/7	3	52	153	4	.310	Black	Black	Blue
FTS-5122	795, 26/7	3	78	158	4	.365	Black	Black	Orange
FTS-5123	1,272, 45/7	3	133	203	4	.463	Black	Black	Yellow

Right-hand lay standard

EXPLANATORY NOTES:

(1) ACSR Conductor Sizes should be used only with Catalog Numbers shown.

(2) Rated Holding Strengths are 100% of the conductor rated breaking strength (RBS).

(3) Conduit PLP for sizers or strandings not shown.

PREFORMED LINE PRODUCTS

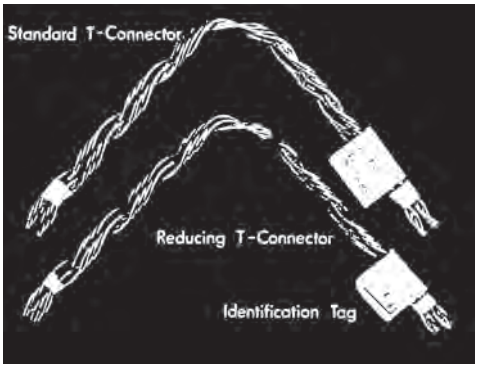
Section 12 – Distribution (Overhead): T-Connectors

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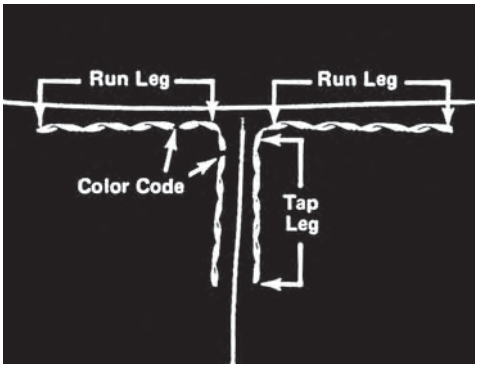
T-Connector 12-1
T-Connector – Reducing.....12-5

T-Connector

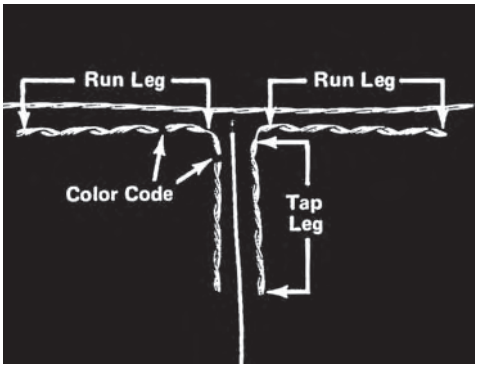
NOMENCLATURE



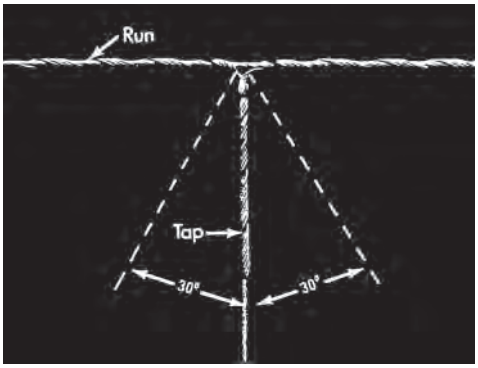
T-Connectors as received in the field



T-Connector
For conductors of equal size



T-Connector: Reducing
For diameter ratios up to three to one



Line Angles
Refer to paragraph below

GENERAL RECOMMENDATIONS

Intended Use: T-Connectors mechanically join slack span laterals (TAP) to verticaly spaced primaries (RUN) which can be reached by bucket truck. Extra poles can be eliminated while permitting equal spans for street lighting.

A pair of T-Connectors installed back-to-back provide a mid-span junction for vertically spaced primaries. Poles can be set back from intersections and buck-arms eliminated.

T-Connectors are available for conductors of equal and unequal diameters (REDUCING TYPE).

Holding Strength: T-Connectors are conservatively rated at 25% of the RBS (rated breaking strength) of the smallest conductor. Because of their intended use on slack span laterals or junctions of continuous conductors, mechanical requirements are not expected to approach 25% RBS.

Line Angles: Slack span laterals (TAP) should not exceed the line angle shown in the illustration, to insure ease of application and to avoid over stressing the T-Connector.

Conductivity: T-Connectors, both regular and reducing types, are designed to a minimum conductivity of 100% of the smallest conductor.

T-Connectors are primarily mechanical holding devices. To insure proper long term electrical current transfer, it is suggested that a jumper or shunt be connected directly between the run and tap conductors so that the T-Connector alone is not required to transfer the current.

APPLICATION-INSPECTION: All conductors, new or weathered, must be thoroughly scratch-brushed until bright and clean. Immediately thereafter, an industry accepted inhibitor (compatible with the conductor) should be applied before installing the product.

T-Connector

For Conductors of Equal Size
For use on:
ACSR, Aluminum Alloy
All-Aluminum



CATALOG NUMBER	CONDUCTOR SIZE RUN and TAP MIN.	DIAMETER RANGE (INCHES)		COLOR CODES	
		MIN.	MAX.	RUN	TAP
TC-0112	#4, 7W, All Alum.	.229	.239	Brown	Brown
TC-0113		.240	.246	Red	Red
TC-0114	#4, 6/1, 7/1	.247	.257	Orange	Orange
TC-0115	#3, 7W, All Alum.	.258	.270	Green	Green
TC-0116		.271	.280	Yellow	Yellow
TC-0117		.281	.289	White	White
TC-0118	#2, 7W, All Alum.	.290	.298	Purple	Purple
TC-0119		.299	.310	Brown	Brown
TC-0120	#2, 6/1, 7/1 #2, 7W, All Alum.	.311	.325	Red	Red
TC-0121	#1, 7W, All Alum.	.326	.340	Blue	Blue
TC-0122	#1, 5/1	.341	.351	Orange	Orange
TC-0123	#1, 6/1	.352	.367	Green	Green
TC-0124		.368	.380	Black	Black
TC-0125	1/0, 6/1 1/0, 7W, Alum. Alloy	.381	.398	Yellow	Yellow
TC-0126		.399	.413	Purple	Purple
TC-0127	2/0, 7W, All Alum.	.414	.425	Brown	Brown
TC-0128	2/0, 18/1	.426	.443	Red	Red
TC-0129	2/0, 7W, Alum. Alloy	.444	.462	Blue	Blue

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) General Recommendations for T-Connectors are referenced earlier in this section.

T-Connector

CATALOG NUMBER	CONDUCTOR SIZE RUN and TAP MIN.	DIAMETER RANGE (INCHES)		COLOR CODES	
		MIN.	MAX.	RUN	TAP
TC-0130	3/0, 7W, All Alum.	.463	.481	Green	Green
TC-0131	3/0, 6/1 3/0, 7W, Alum. Alloy	.482	.503	Orange	Orange
TC-0132		.504	.521	Black	Black
TC-0133	4/0, 7W, All Alum.	.522	.544	Yellow	Yellow
TC-0134	4/0, 6/1 4/0, 7W, Alum. Alloy	.545	.567	Red	Red
TC-0135	250, 19W, All Alum. 266.8, 7W-19W, All Alum. 159, 12/7	.568	.594	Blue	Blue
TC-0136	266.8, 18/1 266.8, Alum. Alloy	.595	.618	Purple	Purple
TC-0137	266.8, 26/7 300, 19W-37W, All Alum.	.619	.644	Yellow	Yellow
TC-0138	300, 18/1 336.4, 19W-37W, All Alum.	.645	.671	Brown	Brown
TC-0139	300, 26/7, 30/7 336.4, 18/1, 36/1	.672	.700	Orange	Orange
TC-0140	336.4, 26/7 397.5, 19W-37W, All Alum.	.701	.729	Green	Green

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) General Recommendations for T-Connectors are referenced earlier in this section.

T-Connector

For Conductors of Equal Size
For use on:
ACSR, Aluminum Alloy
All-Aluminum

CATALOG NUMBER	CONDUCTOR SIZE RUN and TAP MIN.	DIAMETER RANGE (INCHES)		COLOR CODES	
		MIN.	MAX.	RUN	TAP
TC-0141	336.4, 30/7 397.5, 18/1	.730	.760	Black	Black
TC-0142	397.5, 26/7 297.5, 19W-37W, Alum. Alloy	.761	.792	Purple	Purple
TC-0143	477, 18/1, 36/1 477, 19W-37W, All Alum.	.793	.825	Red	Red
TC-0144	477, 24/7	.826	.850	Blue	Blue
TC-0145	477, 26/7 556.5, 19W-37W, All Alum.	.851	.886	Orange	Orange
TC-0146	605, 36/1 636, 37W-61W, All Alum.	.887	.929	Black	Black
TC-0147	636, 18/1, 36/1 605, 37W, Alum. Alloy	.930	.968	Brown	Brown
TC-0148	666.6, 24/7 636, 37W, All Alum.	.969	1.008	Yellow	Yellow
TC-0149	795, 36/1 795, 37W-61W, All Alum.	1.009	1.050	Green	Green
TC-0150	795, 45/7 715.5, 37W, Alum. Alloy	1.051	1.091	Black	Black
TC-0151	795, 26/7 795, 37W, Alum. Alloy	1.092	1.136	Purple	Purple

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) General Recommendations for T-Connectors are referenced earlier in this section.

T-Connector – Reducing

CATALOG NUMBER	CONDUCTOR RUN SIZE	RUN (INCHES) MIN.	RUN (INCHES) MAX.	CONDUCTOR TAP SIZE	TAP (INCHES) MIN.	TAP (INCHES) MAX.	LENGTH OF LEG (INCHES) RUN	LENGTH OF LEG (INCHES) TAP	COLOR CODES
TCR-MS-6038	#2, 6/1, 7/1	.311	.325	#4, 6/1, 7/1	.247	.257	11	11	Orange
TCR-MS-5972	1/0, 7W, All Alum.	.368	.380	#4, 6/1, 7/1	.247	.257	12	12	Black
TCR-MS-2701	1/0, 6/1	.381	.398	#4, 6/1, 7/1	.247	.257	12	12	Black
TCR-MS-5362	1/0, 6/1	.381	.398	#2, 6/1	.311	.325	14	14	Yellow
TCR-MS-5258	2/0, 7W, All Alum.	.414	.425	#4, 6/1, 7/1	.247	.257	12	12	Black
TCR-MS-5818	2/0, 6/1	.444	.462	#4, 6/1, 7/1	.247	.257	13	13	Blue
TCR-MS-5249	2/0, 4/3	.444	.462	#2, 7W, All Alum.	.290	.298	14	14	Purple
TCR-MS-5273	2/0, 6/1	.444	.462	#2, 6/1, 7/1	.311	.325	14	14	Red
TCR-MS-4407	3/0, 7W, All Alum.	.463	.481	#2, 7W, All Alum.	.290	.298	14	14	Purple
TCR-MS-4761	3/0, 7W, Alum. Alloy	.482	.503	#4, 7W, All Alum.	.229	.239	13	13	Orange
TCR-MS-9984	2/0 AWAC 4/3, 3/0, 6/1	.482	.503	#2, 7W, All Alum.	.290	.298	14	14	Orange
TCR-MS-6151	3/0, 7W, Alum. Alloy	.482	.503	#2, 7W,Alum. Alloy	.311	.325	15	15	Red
TCR-MS-5476	3/0, 7W, Alum. Alloy	.482	.503	1/0, 7W, All Alum.	.368	.380	17	17	Orange
TCR-MS-6058	3/0, 6/1	.482	.503	1/0, 6/1	.381	.398	18	18	Green
TCR-MS-5973	4/0, 7W, All Alum.	.522	.544	#4, 6/1, 7/1	.247	.257	14	14	Black
TCR-MS-6127	4/0, 6/1	.545	.567	#4, 6/1, 7/1	.247	.257	15	15	Red
TCR-MS-5363	4/0, 6/1	.545	.567	#2, 6/1, 7/1	.311	.325	16	16	Red
TCR-MS-5317	4/0, 6/1	.545	.567	1/0, 5/1	.381	.398	17	17	Red
TCR-MS-4413	266.8, 7W-19W, All Alum.	.568	.594	#2, 7W, All Alum.	.290	.298	16	16	Purple
TCR-MS-6173	266.8, 7W-19W, All Alum.	.568	.594	1/0, 6/1	.381	.398	18	18	Yellow

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) For combinations of conductors outside of the ranges listed, consult PLP for an engineering specification.

T-Connector – Reducing

For Conductors of Different Size
For use on:
ACSR, Aluminum Alloy
All-Aluminum

CATALOG NUMBER	CONDUCTOR RUN (INCHES)			CONDUCTOR TAP (INCHES)			LENGTH OF LEG (INCHES)	
	SIZE	MIN.	MAX.	SIZE	MIN.	MAX.	RUN	TAP
TCR-MS-5255	336.4,19W-37W, All Alum.	.645	.671	#4, 6/1, 7/1	.247	.257	15	15
TCR-MS-6311	336.4,19W-37W, All Alum.	.645	.671	#2, 6/1, 7/1	.311	.325	16	16
TCR-MS-5475	336.4,19W-37W, All Alum.	.645	.671	1/0, 7W, All Alum.	.368	.380	19	19
TCR-MS-5483	336.4,19W-37W, All Alum.	.645	.671	1/0, 6/1	.381	.398	19	19
TCR-MS-6174	336.4,19W-37W, All Alum.	.645	.671	2/0, 7W, All Alum.	.414	.425	24	24
TCR-MS-5817	336.4,19W-37W, All Alum.	.645	.671	2/0, 6/1	.444	.462	20	20
TCR-MS-5433	336.4, 18/1	.672	.700	#4, 6/1, 7/1	.247	.257	15	15
TCR-MS-2700	336.4, 18/1	.672	.700	1/0, 6/1	.381	.398	19	19
TCR-MS-6126	336.4, 18/1	.672	.700	#2, 6/1, 7/1	.311	.325	18	18
TCR-MS-5261	336.4, 18/1	.672	.700	2/0, 6/1	.444	.462	20	20
TCR-MS-5945	336.4, 26/7	.701	.729	#2, 7W, Alum. Alloy	.311	.325	19	19
TCR-MS-6303	336.4, 26/7	.701	.729	2/0, 6/1	.444	.462	25	25
TCR-MS-6025	336.4, 26/7	.701	.729	4/0, 6/1	.545	.567	24	24
TCR-MS-5672	397.5, 18/1	.730	.760	2/0, 6/1	.444	.462	21	21
TCR-MS-4426	477, 19W-37W, All Alum.	.793	.825	#4, 7W, All Alum.	.229	.239	20	20
TCR-MS-4402	477, 19W-37W, All Alum.	.793	.825	#2, 7W, All Alum.	.290	.298	19	19
TCR-MS-5904	477, 19W-37W, All Alum.	.793	.825	#2, 6/1, 7/1	.311	.325	18	18
TCR-MS-5771	477, 18/1	.793	.825	1/0, 6/1	.381	.398	22	22
TCR-MS-5253	477, 19W-37W, All Alum.	.793	.825	2/0, 7W, All Alum.	.414	.425	21	21
TCR-MS-4405	477, 19W-37W, All Alum.	.793	.825	3/0, 7W-19W, All Alum.	.463	.481	23	23

(Continued on next page)

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.

(2) For combinations of conductors outside of the ranges listed, consult PLP for an engineering specification.

T-Connector – Reducing

CATALOG NUMBER	CONDUCTOR RUN SIZE	RUN (INCHES) MIN.	RUN (INCHES) MAX.	CONDUCTOR TAP SIZE	TAP (INCHES) MIN.	TAP (INCHES) MAX.	LENGTH OF LEG (INCHES) RUN	LENGTH OF LEG (INCHES) TAP
TCR-MS-5772	477, 18/1	.793	.825	4/0, 6/1	.545	.567	29	29
TCR-MS-5977	500,19W-37W, All Alum.	.793	.825	250, 19W-37W, All Alum.	.568	.594	29	29
TCR-MS-5254	477,19W, All Alum.	.793	.825	336.4, 19W, All Alum.	.645	.671	35	35
TCR-MS-6312	556.5,19W-37W, All Alum.	.851	.886	#2, 6/1, 7/1	.311	.325	20	20
TCR-MS-6079	477, 26/7	.851	.886	1/0, 6/1	.381	.398	23	23
TCR-MS-6080	477, 26/7	.851	.886	3/0, 6/1	.482	.503	24	24
TCR-MS-5912	556.5,19W-37W, All Alum.	.851	.886	4/0, 7W, All Alum.	.522	.544	25	25
TCR-MS-5986	477, 19W, Alum. Alloy	.851	.886	4/0, 6/1	.545	.567	27	27
TCR-MS-5081	636, 37W, All Alum.	.887	.929	2/0, 7W, All Alum.	.414	.425	23	23
TCR-MS-5816	636, 37W, All Alum.	.887	.929	2/0, 6/1	.444	.462	23	23
TCR-MS-1810	556.5, 26/7	.887	.929	4/0, 6/1	.545	.567	32	32
TCR-MS-5158	636, 37W, All Alum.	.887	.929	336.4, 19W-37W, All Alum.	.645	.671	40	40
TCR-MS-5426	556.5, 24/7	.887	.929	336.4, 26/7	.701	.729	40	40
TCR-MS-5974	636, 18/1	.930	.968	1/0, 6/1	.381	.398	22	22
TCR-MS-5905	795, 37W, All Alum.	1.009	1.050	3/0, 6/1	.482	.503	26	26
TCR-MS-6164	795, 37W, All Alum.	1.009	1.050	4/0, 6/1	.545	.567	27	27
TCR-MS-5260	795, 37W, All Alum.	1.009	1.050	336.4, 18/1	.672	.700	42	42
TCR-MS-5190	795, 37W, All Alum.	1.009	1.050	336.4, 19W-37W, All Alum.	.793	.825	44	44
TCR-MS-5425	795, 45/7	1.051	1.091	336.4, 26/7	.701	.729	43	43
TCR-MS-6055	795, 26/7	1.092	1.136	336.4, 18/1	.672	.700	42	42
TCR-MS-5844	795, 26/7	1.092	1.136	336.4, 26/7	.701	.729	43	43

Right-hand lay standard

EXPLANATORY NOTES:

(1) Nominal Conductor Size indicates one of various conductors within each range.
(2) For combinations of conductors outside of the ranges listed, consult PLP for an engineering specification.

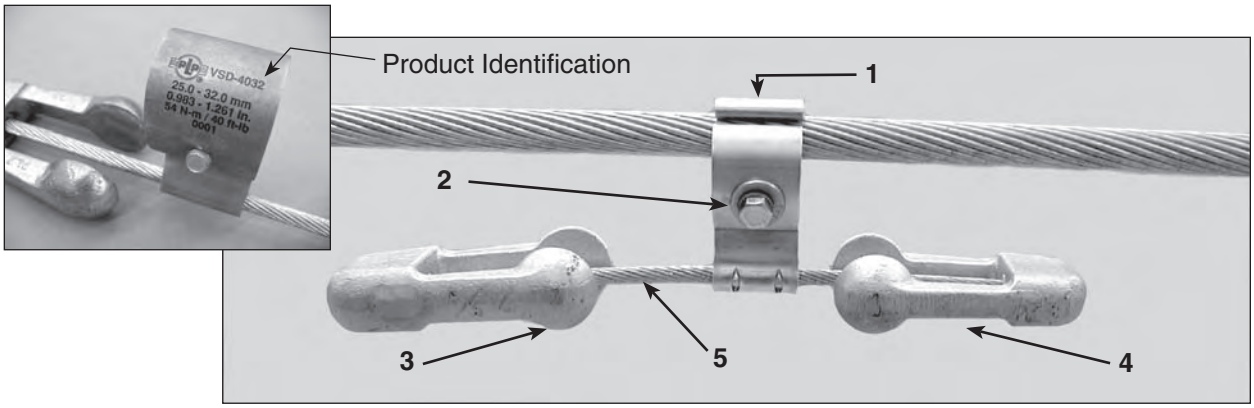
PREFORMED LINE PRODUCTS

Section 13 – Distribution (Overhead): Motion Control Products

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Spiral Vibration Damper (Standard & Hi Mass) 13-6
Air Flow Spoiler 13-9

VORTX® Vibration Damper



NOMENCLATURE

1. **Clamp & Keeper:** The Clamp has an extruded hook shaped profile to hang onto the cable or conductor while tightening the keeper. Together, the aluminum keeper and clamp capture the conductor to hold the damper assembly firmly onto the conductor or cable. Product identification, installation torque, and lot number are permanently etched on the clamp.
2. **Bolt, Washer, and Lock Washer:** The bolt, washer, and lock washer are used to fasten the keeper to the clamp and secure the entire damper assembly to the cable or conductor. The materials used are galvanized steel.
3. **Large Damper Weight:** The VORTX damper design shown above has two weight sizes – this provides up to 4 resonant response frequencies (two for the large weight and two for the small weight) for more effective protection. The weight is a galvanized ductile iron casting.
4. **Small Damper Weight:** The small weight provides damping at higher frequencies. The weight is a galvanized ductile iron casting.
5. **Messenger:** The messenger is made of formed hard steel wires that are galvanized for corrosion resistance.

Thermal Rating (Continuous)
125°C
250°C when applied over Protector Rods

GENERAL RECOMMENDATIONS

INTENDED USE: VORTX Dampers respond to wind induced line vibration that is characterized by high frequency, low amplitude motion a.k.a. aeolian vibration. The VORTX damper with Large and Small weights can achieve greater power dissipation and frequency response performance than "symmetrical weight" Stockbridge damper designs. Wider frequency coverage translates into better protection as energy is more effectively dissipated over the entire range of conductor/cable frequencies.

APPLICATION: VORTX Dampers can be clamped directly onto most aluminum based conductors including ACSR, AAC, AAAC and ACAR. PLP® Protector Rods should be considered for applications on aluminum conductors with relatively soft outer aluminum strand construction such as ACSS. Protector rods are designed to reduce direct clamping stress on cable vulnerable to surface or core damage – this includes fiber optic cable designs such as ADSS and OPGW. Protector Rods are detailed on page 5-5.

CONDUCTOR/CABLE SIZE: Generally as conductors and cables increase in size they tend to vibrate at lower frequencies. The VORTX Damper is more effective for larger size conductors while the Spiral Vibration Dampers (SVD) are generally more effective for the smaller diameter cables that can vibrate at much higher frequencies. The following table provides a general recommendation for VORTX dampers and Spirial Vibration Damper's based on conductor or cable size (see table on next page):

VORTX® Vibration Damper

GENERAL RECOMMENDATIONS cont.

Application	Outer Diameter	Recommended Damper Product
Conductor OHSW and OPGW	up to 0.75" (19 mm)	SVD
	over 0.75" (19 mm)	VORTX
ADSS	up to 1.25" (32 mm)	SVD
	over 1.25" (32 mm)	VORTX

The degree of protection required on a specific line depends upon a number of factors such as line design, local climate, tension, exposure to wind flow, and line vibration history in the area. With assistance from your local PLP Sales Representative, the necessary information can be assembled for review and followed up with detailed PLP recommendations for your system.

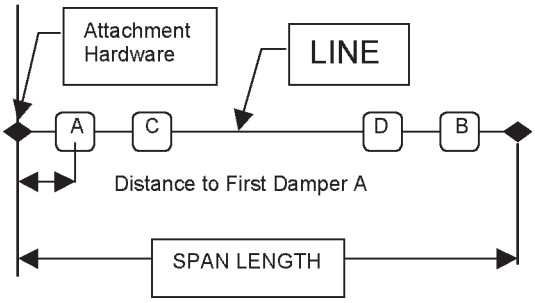
DAMPERS PER SPAN: The recommended number of dampers per span depends on the amount of wind energy exposure and the conductor/cable characteristics. Self-Damping is a conductor or cable characteristic attributed to component material and construction – for example the individual metal strands that make up a conductor can move relative to one-another and dissipate energy (much the same way as the messenger does in the damper). Increasing line tension however, will decrease self-dampening as the individual strands begin to lock together.

Single Dampers are capable of a predetermined amount of energy dissipation that can protect spans approximately 300 meters (1000 feet) long or more considering self dampening. Longer spans may require more than one damper.

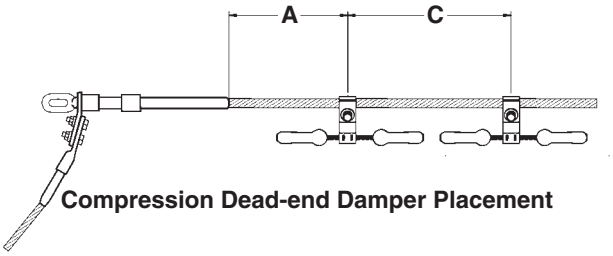
DAMPER PLACEMENT: VORTX dampers have specific performance characteristics that require strategic placement on the line to counter potential damage to the line system. Placement information shall be provided to assure that the damper will bring effective protection.

Placement information refers to locations A, B, C, and D for the first four dampers as measured from the respective hardware – See the sketch below. Longer spans that require additional protection may require dampers placed midspan. In many cases extremely long spans extend over rivers, and require additional protection due to high laminar wind speeds.

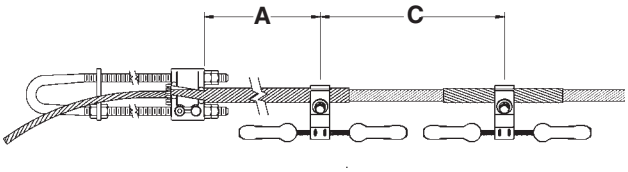
General Placement Sequence, Dampers A, B, C, and D placed 1st, 2nd, 3rd, and 4th respectively.



The general placement sequence is typical for spans with tangent hardware at both ends. Unlike tangent hardware, dead-ends are not symmetric about the point of attachment to the structure – thus it is difficult to determine the most effective placement location for single dampers. If dampers must be placed at dead-end hardware, the sequence requires dampers at A and C (or B and D) i.e. two dampers for single damper placement as shown below:



Compression Dead-end Damper Placement



FIBERLIGN® Dead-end Damper Placement

PERFORMANCE QUALIFICATION: VORTX Dampers meet the requirements of International Standard IEC 61897. This standard includes levels of acceptable performance for Forced Response, Fatigue, Weight Pull-off, Messenger Pull-out, Damper Efficiency, Corrosion Resistance, Bolt Torque, Clamp Slip, and Corona. Response curves and test reports can be provided upon request.

VORTX® Vibration Damper

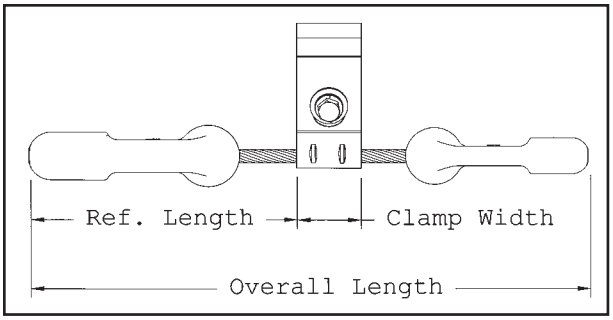
VORTX DAMPER Catalog Number code:

VSD- 40 32

"VSD" – VORTX (Stockbridge) Damper

Weight Combination (10, 20, 25, 35, 40, 50)
Weight selection is based on appropriate impedance for respective conductor or cable

Clamp Code (10, 12, 16, 20, 25, 32, 40, 50, 61)
The clamp code represents the top end of the clamp range or maximum accepted cable diameter in millimeters.



VORTX DAMPER DETAILS FOR CONDUCTOR AND SHIELD WIRE APPLICATIONS

Catalog Number*	Clamp Range Inches Min	Clamp Range Inches Max	Clamp Range mm Min	Clamp Range mm Max	Overall Length Inches (mm)	Ref. Length Inches (mm)	Clamp Width Inches (mm)	Bolt Size (mm)	Install Torque Ft-lb (N-m)	Assembled Weight Pounds (Kilograms)
VSD-1012	0.381	0.483	9.7	12.3	14 (356)	5 (127)	1.6 (41)	M10 x 50	30 (41)	3.8 (1.7)
VSD-1020	0.612	0.786	15.5	20.0	14 (356)	5 (127)	2.0 (50.8)	M10 x 50	30 (41)	3.8 (1.7)
VSD-2016	0.483	0.612	12.3	15.5	18 (457)	6.9 (175)	1.6 (41)	M10 x 50	30 (41)	3.8 (1.7)
VSD-2020	0.612	0.786	15.5	20.0	18 (457)	6.9 (175)	2.0 (50.8)	M10 x 50	30 (41)	3.8 (1.7)
VSD-2025	0.786	0.983	20.0	25.0	18 (457)	6.9 (175)	2.0 (50.8)	M10 x 50	30 (41)	3.9 (1.8)
VSD-2032	0.983	1.261	25.0	32.0	18.2 (462)	6.9 (175)	2.2 (56)	M12 x 70	40 (54)	4.2 (2.0)
VSD-2520	0.612	0.786	15.5	20.0	12.5 (318)	6.5 (165)	2.0 (50.8)	M10 x 50	30 (41)	5.0 (2.3)
VSD-2525	0.786	0.983	20.0	25.0	12.5 (318)	6.5 (165)	2.0 (50.8)	M10 x 50	30 (41)	5.1 (2.3)
VSD-2532	0.983	1.261	25.0	32.0	12.5 (318)	6.5 (165)	2.2 (56)	M12 x 70	40 (54)	5.2 (2.4)
VSD-3525	0.786	0.983	20.0	25.0	15 (381)	7.0 (178)	2.0 (50.8)	M10 x 50	30 (41)	7.2 (3.3)
VSD-3532	0.983	1.261	25.0	32.0	15 (381)	7.0 (178)	2.2 (56)	M12 x 70	40 (54)	7.3 (3.3)
VSD-3540	1.261	1.579	32.0	40.1	15 (381)	7.0 (178)	2.38 (61)	M12 x 70	40 (54)	7.4 (3.4)
VSD-3550	1.579	1.970	40.1	50.0	15 (381)	7.0 (178)	2.5 (63.5)	M12 x 70	40 (54)	7.5 (3.4)
VSD-4032	0.983	1.261	25.0	32.0	25 (635)	10.5 (267)	2.2 (56)	M12 x 70	40 (54)	10.8 (4.9)
VSD-4040	1.261	1.579	32.0	40.1	25 (635)	10.5 (267)	2.38 (56)	M12 x 70	40 (54)	10.9 (4.9)
VSD-4050	1.579	1.970	40.1	50.0	25 (635)	10.5 (267)	2.5 (63.5)	M12 x 70	40 (54)	11.3 (5.1)
VSD-4061	1.970	2.403	50.0	61.0	25.5 (648)	10.5 (267)	3.0 (76)	M12 x 75	40 (54)	11.4 (5.2)
VSD-5040	1.261	1.579	32.0	40.1	28 (711)	11 (279)	2.38 (61)	M12 x 75	40 (54)	12.1 (5.5)
VSD-5050	1.579	1.970	40.1	50.0	28 (711)	11 (279)	2.5 (63.5)	M12 x 75	40 (54)	12.1 (5.5)
VSD-5061	1.970	2.403	50.0	61.0	28 (711)	11 (279)	3.0 (76)	M12 x 75	40 (54)	12.1 (5.5)

Shaded rows represent Dampers that in most cases are directly applied to ACSR, AAC, AAAC and ACAR conductors without armor rods or other protective rods.
*Verify appropriate weight code for specific conductor in catalog table titled "Weight Combination for Conductor and Shield Wire Sizes" or contact PLP technical support.

VORTX® Vibration Damper

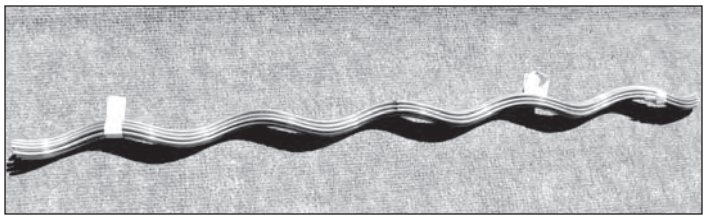
WEIGHT COMBINATION FOR CONDUCTOR AND SHIELD WIRE SIZES								
Weight Combination Code Number*	ACSR, AAC, AAAC and ACAR Range				Galvanized Steel and Alumoweld Range			
	Inches		mm		Inches		mm	
	Min	Max	Min	Max	Min	Max	Min	Max
10	0.381	0.472	9.7	11.9	.275	.400	7.0	10.1
20	0.473	0.721	12.0	18.2	.401	.486	10.2	12.3
25	0.723	0.858	18.3	21.7	.487	.650	12.4	16.5
35	0.859	0.983	21.8	24.9				
40	0.984	1.335	25.0	33.9				
50	1.261	1.762	32.1	44.7				
*Final selection for weight combination at merging ranges are determined from conductor type and tension. Contact PLP Technical Support for final recommendation.								

WEIGHT COMBINATION FOR OPGW				
Weight Combination Code Number*	Inches		mm	
	Min	Max	Min	Max
10	0.300	0.381	7.6	9.7
20	0.375	0.720	9.5	18.2
25	0.612	1.260	15.5	32.0
35	0.721	1.260	18.3	32.0
*Final selection for weight combination at merging ranges are determined from conductor type and tension. Contact PLP Technical Support for final recommendation.				

BOLT SIZE AND TORQUE INFORMATION									
Clamp Code	Clamp Range				Bolt Thread Size	Wrench Size		Torque	
	Millimeters		Inches						
	Min	Max	Min	Max		mm	in	N-m	Ft-lb
10	7.6	9.7	.300	.381	M10	17	11/16	41	30
12	9.7	12.3	.381	.483	M10	17	11/16	41	30
16	12.3	15.5	.483	.612	M10	17	11/16	41	30
20	15.5	20.0	.612	.786	M10	17	11/16	41	30
25	20.0	25.0	.786	.983	M10	17	11/16	41	30
32	25.0	32.0	.983	1.261	M12	19	3/4	54	40
40	32.0	40.1	1.261	1.579	M12	19	3/4	54	40
50	40.1	50.0	1.579	1.970	M12	19	3/4	54	40
61	50.0	61.0	1.970	2.403	M12	19	3/4	54	40

VORTX® Vibration Damper

Protector Rods



Thermal Rating (Continuous)
250°C

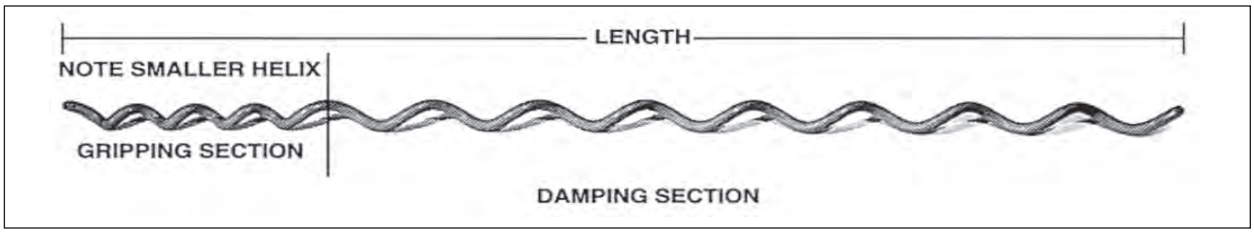
PROTECTOR RODS FOR VORTX DAMPER on OPGW or Special Conductors:

Protector Rods provide a layer of mechanical protection and reinforcement for accessory items such as VORTX Dampers that clamp onto a cable. This product is not designed for protection at clamp type supports or suspensions. Protector Rods are not to be used as a repair product as they are not designed to restore conductance or tensile strength to a cable or conductor. Standard Protector Rods are designed for line voltages of 230 kV and lower. For higher voltage applications, Parrot Bill rod end treatment can be provided – contact PLP for details.

PLP PROTECTOR RODS

Catalog Number*	Cable Diameter Range Inches		Cable Diameter Range mm		Rod Length		Wire Size Inches (mm)	Color Code	Units Per Carton	Weight/ Carton Pounds (Kg)
	Min	Max	Min	Max	Inches	mm				
PR-0135	0.378	0.423	9.6	10.7	12	304	0.121 (3.1)	Yellow	50	10 (4.5)
PR-0137	0.424	0.475	10.8	12.1	12	304	0.121 (3.1)	Brown	50	10 (4.5)
PR-0139	0.476	0.533	12.1	13.5	16	406	0.121 (3.1)	Blue	50	14 (6.4)
PR-0141	0.534	0.585	13.6	14.8	16	406	0.121 (3.1)	Green	50	14 (6.4)
PR-0142	0.586	0.618	14.9	15.6	16	406	0.146 (3.7)	Orange	50	21 (9.5)
PR-0144	0.619	0.667	15.7	16.9	16	508	0.146 (3.7)	Purple	50	21 (9.5)
PR-0146	0.668	0.722	17.0	18.3	20	508	0.146 (3.7)	Red	50	29 (13.1)
PR-0148	0.723	0.816	18.4	20.3	20	508	0.146 (3.7)	Black	50	29 (13.1)
PR-0150	0.817	0.898	20.8	22.7	20	508	0.146 (3.7)	White	50	31 (14.1)
PR-0151	0.899	0.954	22.8	24.2	24	610	0.167 (4.2)	Yellow	50	47 (21.3)
PR-0152	0.955	1.019	24.3	25.8	24	610	0.182 (4.6)	Brown	25	29 (13.1)
PR-0154	1.020	1.064	25.9	27.0	24	610	0.182 (4.6)	Blue	25	29 (16.1)
PR-0155	1.065	1.098	27.1	27.8	26	660	0.204 (5.2)	Green	25	36 (16.3)
PR-0156	1.099	1.181	27.9	29.9	26	660	0.250 (6.4)	Orange	25	48 (21.7)
PR-0158	1.182	1.298	30.0	32.9	26	660	0.250 (6.4)	Purple	25	51 (23.1)
PR-0160	1.299	1.415	33.0	35.9	26	660	0.250 (6.4)	Blue	20	44 (19.9)
PR-0162	1.416	1.543	36.0	39.2	26	660	0.250 (6.4)	Yellow	20	48 (21.7)
PR-0163	1.544	1.685	39.2	42.8	26	660	0.250 (6.4)	Brown	15	40 (18.1)
PR-0164	1.686	1.840	42.8	46.7	26	660	0.250 (6.4)	Blue	15	42 (19.0)

Spiral Vibration Damper



NOMENCLATURE

Length: Assists in identification of conductor size, corresponding to tabular information appearing on following page.

Damping Section: Helically scaled for interplay of damper and conductor, to provide the action/reaction motion that opposes the natural vibration wave.

Gripping Section: Has a smaller helix designed to the grip conductor.

Thermal Rating (Continuous)
125°C

GENERAL RECOMMENDATIONS

Damping devices are designed for the single purpose of reducing vibration. This single function is entirely different from that of protecting against (1) stress concentrations, (2) fretting or abrasion, and (3) arc-over burning. Because of this, damping devices should be considered only as supplemental to *WRAPLOCK® Tie, Armor Rod, Side Tie, Spool Tie*, or other hardware at tangent supports. Dampers are also used as supplemental protection at dead-ends.

The degree of protection needed on a specific line depends upon a number of factors such as line design, temperature, tension, exposure to wind flow, and vibration history on similar construction in the same area.

Spiral Vibration Dampers are also effective on certain size overhead shield wires and OPGW. Consult PLP for specifics.

For damper applications on ADSS cable, refer to the FIBER-LIGN® Fiber Optic Products section under motion control.

Consult your PREFORMED™ Sales Representative for placement and installation guidelines.

MATERIAL. The solid polyvinyl chloride helical rod material is noncorrosive and has a surface hardness which does not abrade the conductor.

APPLICATION-INSPECTION. The Gripping Section should be installed approximately one hand's width from the ends of *Armor Rod* or other hardware. It is not necessary to make engineering calculations as to placement.

Usage Recommendations for Spiral Vibration Dampers on Bare Conductor, Shield Wire and OPGW.

Number of SVDs Per Span

Span Length	0.800'	801'-1600'	1601'-2400'
Standard	2	4	6
Hi Mass	1	2	3

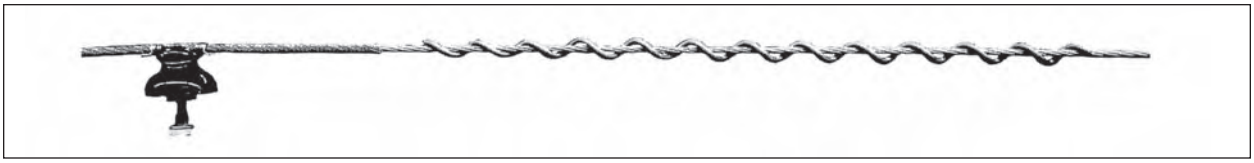
Note: Water/Canyon Crossings - due to the increased potential of laminar wind flow, an additional 50% more dampers per span should be added to the standard recommendations above for adequate protection.

In areas that are prone to high levels of vibration or conductor tension is in excess of 18% RBS, consult Preformed Line Products for specific recommendations.

SAFETY CONSIDERATIONS

1. This product may be reused if in good condition.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED Spiral Vibration Damper before application.
5. PREFORMED Spiral Vibration Dampers are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Spiral Vibration Damper (Standard)



For use on:
Bare Conductors, Shield Wires and OPGW

CATALOG NUMBER	DIAMETER RANGE (INCHES)		UNITS	WT./LBS.	LENGTH (INCHES)
	MIN.	MAX.	PER CARTON		
5050102	.174	.249	50	29	46
5050103	.250	.326	50	31	49
5050104	.327	.461	50	34	51
5050105	.462	.563	50	36	53
5050106	.564	.760	25	50	65

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range. To obtain outside diameters of conductors not shown, but which fall within the diameter ranges listed, consult Conductor Chart in the General Information Section.

Spiral Vibration Damper (Hi Mass)

For use on:
Bare Conductors, Shield Wires and OPGW

CONSTRUCTION

The Hi Mass Spiral Vibration Damper (HMSVD) has a damping section close to double that of the standard SVD. By extending the length of the damping section, one Hi Mass SVD provides the effectiveness of two standard SVDs.

BENEFITS

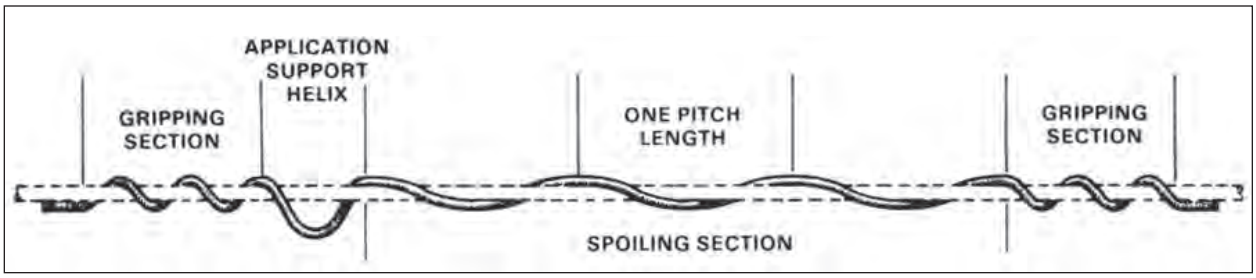
- Fewer points of installation.
- Fewer components on the line.

CATALOG NUMBER	DIAMETER RANGE (INCHES)		UNITS	WT./LBS.	LENGTH (INCHES)
	MIN.	MAX.	PER CARTON		
5050200	.250	.326	50	55	87
5050201	.327	.461	50	60	91
5050202	.462	.563	50	65	94
5050203	.564	.760	15	55	97

EXPLANATORY NOTES:

(1) Nominal Conductor size indicates one of various conductors within each range. To obtain outside diameters of conductors not shown, but which fall within the diameter ranges listed, consult Conductor Chart in the General Information Section.

Air Flow Spoiler



NOMENCLATURE

Gripping Section: Grips cable. Consists of several pitches (360˚ wraps around the cable) and holds the Air Flow Spoiler firmly in position.

Spoiling Section: Disrupts aerodynamic lift. The spoiling section is wrapped around the cable in a manner which presents a constantly changing profile to wind flow and cancels lift forces which cause galloping. The spoiling section is wrapped around the cable either two or three times, depending on cable diameter.

Application Support Helix: Supports Spoiler. Air Flow Spoilers range in length from 14 to 16 feet. The Application Support Helix on one end keeps the Air Flow Spoiler from hanging down, while the gripping section on the opposite end is applied.

Thermal Rating (Continuous)
125°C

GENERAL RECOMMENDATIONS

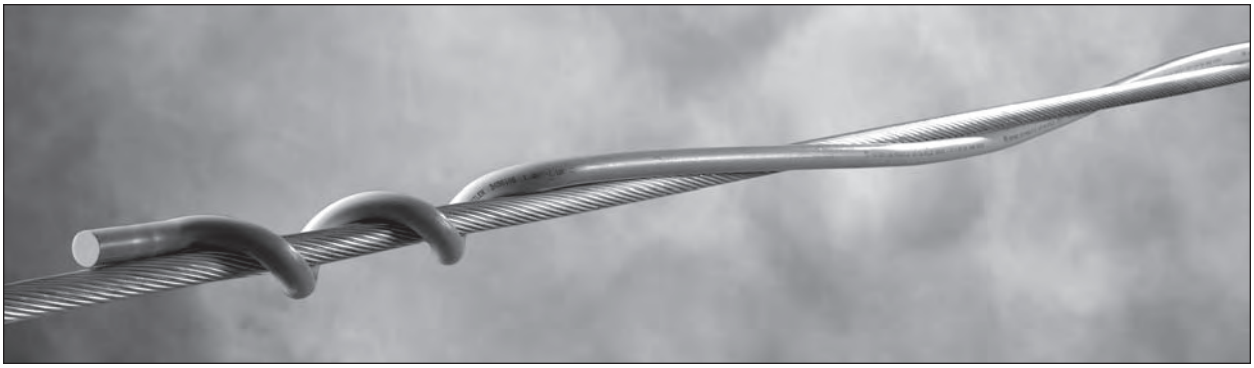
Several Air Flow Spoilers are required in each span to offset the aerodynamic lift forces which cause galloping. Each cable, conductor or phase, and neutral need to be treated in each span.

The number and placement of Air Flow Spoilers in each span can be determined by using the General Placement guidelines that follow or by submitting the Air Flow Spoiler Placement Request form. The information submitted on this form is input into a computer program for the determination of the exact placement of the Air Flow Spoilers in each span. The program also supplies the increased wind loading on each span as a percentage increase.

When using the Air Flow Spoiler Placement Request form, the information should be completed and returned to Preformed Line Products prior to installation of Air Flow Spoilers. The placement scheme will be returned giving the placement of Air Flow Spoilers in each span.

Please advise whether the cables contain optical fibers or if the Air Flow Spoilers are to be installed on Figure 8/Lashed Messenger cables. This may influence the Air Flow Spoiler selection and/or quantity.

Air Flow Spoiler



GENERAL PLACEMENT GUIDELINES

Extensive laboratory and field research has shown that Air Flow Spoilers ar most effective when they are placed on 25% of the span length (based on the 12' spoiling section). For example, a 600' span would require 13 Air Flow Spoilers (.25x600/2). The Air Flow Spoilers are grouped in the middle 50% of the span by leaving a blank space equal to an Air Flow Spoiler lemgth between adjacent units.

For use on all standard conductors.

Catalog Number	Diameter Range (INCHES)		Length (FEET)	Wt./Unit Lbs.	Color Code
	Min.	Max.			
5058100	0.250	0.326	13-1/2	1.00	Red
5058101	0.327	0.461	13-1/2	1.00	White
5058102	0.462	0.563	14	2.25	Orange
5058103	0.564	0.76	14-1/2	2.40	Yellow
5058104	0.761	0.926	15	4.25	Blue
5058105	0.927	1.019	15-1/4	4.50	Black
5058106	1.020	1.165	15-3/4	5.50	Purple
5058107	1.166	1.469	16	5.75	Brown
5058108	1.470	1.602	17	9.50	Green
5058109	1.603	1.762	17-1/2	9.75	Pink

EXPLANATORY NOTES:

(1) For installation on Figure 8 and Lashed Messenger cables, consult PLP.
(2) Obtain the Air Flow Spoiler Placement Request form from your local PLP representative or direct from PLP.

PREFORMED LINE PRODUCTS

Section 14 – Distribution (Overhead): Repair Products

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Splice Shunt.....14-3

Repair Products

GENERAL INFORMATION

Repair of damaged distribution line phase and neutral conductors

Damage to distribution line phase and neutral conductor can occur in service for a number of reasons, including:

- Aeolian vibration and galloping
- Loose hand ties
- Lightning strikes
- Contact from trees or other objects
- Firearms

PLP offers a number of solutions for repairing damaged or broken conductors so that re-conductoring is not required. In most cases the repair solution will depend on the extent of the damage. Therefore, the first step in any repair is an accurate assessment of the level of damage.

Generally an accurate assessment of the number of damaged or broken strands can be made by a close visual inspection, with the tension relieved in the damaged area. Since damage can be hidden under ties or support hardware it is usually necessary to carefully remove this hardware to completely assess the amount of damage.

If the total extent of the damage can not be accurately determined, then the repair solution should be based on the worst possible condition.

At support locations once the conductor has been repaired, a factory formed tie such as the WRAPLOCK™ Tie or Distribution Tie should be used to minimize the possibility of future damage to the repaired conductor.

Distribution Conductor Repair

ARMOR RODS & LINE GUARD

Armor Rods or Line Guard can be used to restore the mechanical strength and electrical conductivity for a limited number of broken aluminum strands only in all types of aluminum-based conductors shown in table below.

See Armor Rod (1-42) and Line Guard (9-70) catalog pages for the catalog numbers of a specific conductor size.

Total Repairable Number of Broken or Damaged Aluminum Strands																	
Conductor Type	**ACSR**											**AAC**				**AAAC**	
Stranding	5/1	6/1	7/1	8/1	18/1	12/7	24/7	26/7	30/7	45/7	54/7	7w	19w	37w	61w	7w	19w
Armor Rods	2	3	3	4	6	6	7	8	9	10	12	2	5	9	12	2	6
Line Guard	1	1	1	1	4	3	3	4	5	5	6	1	3	4	6	1	2

CONDUCTOR SPLICE

A Conductor Splice can be used for conductors which have more aluminum strands broken or damaged that can be repaired with Armor Rod or Line Guard.

A Conductor Splice will restore the mechanical strength and electrical conductivity for up to all the aluminum strands on ACSR Conductors.

The steel core must be intact, otherwise the mechanical restoration of the complete conductor will be limited (as low as 50%).

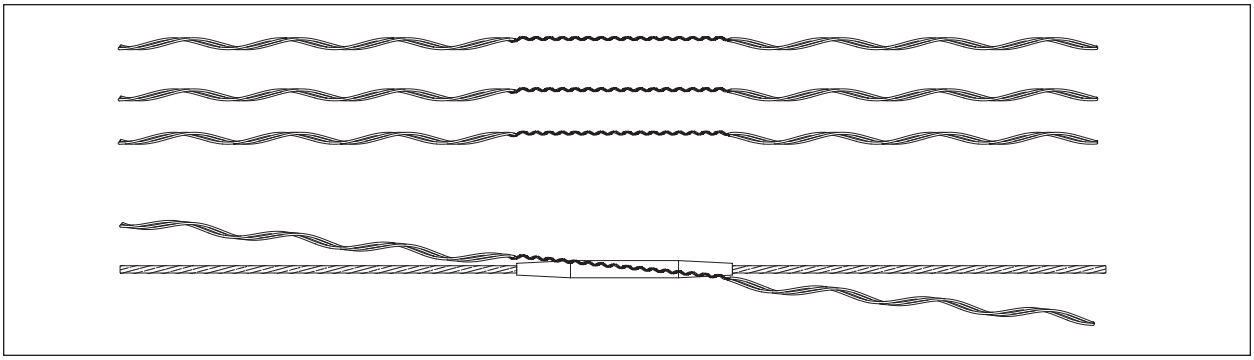
A Conductor Splice will restore from 90% to 100% of the mechanical strength and 100% of the electrical conductivity for all the strands broken or damaged on all-alluminum or aluminum alloy conductors.

See conductor splice catalog pages (11-1) for catalog numbers of specific conductor sizes.

ACSR FULL TENSION SPLICE

For ACSR conductors when the damage includes strands of the steel core the ASCR full tension splice will restore 100% of both the mechanical strength and electrical conductivity of the complete conductor. See catalog pages (11-16) for ACSR full tension splice for specific conductor size.

Splice Shunt



GENERAL RECOMMENDATIONS

The Splice Shunt is designed to restore complete electrical conductivity and a portion of the mechanical strength to compression splices that are found to be excessively hot during thermal line inspections.

Mechanically, the splice shunt is designed to restore 100% of the strength of the aluminum strands of ACSR and about 10% of the strength of the steel core. 100% of the mechanical strength is restored for AAC and AAAC conductors.

The Splice Shunt is applied directly over the compression splice and over the conductor for some distance on either side of the splice.

To order Splice Shunts please provide PLP with the following information:

- Conductor Size (Kcmil, standing, diameter)
- Length of Compression Splice
- Diameter of Compression Splice (measured in the center, non-compressed area)

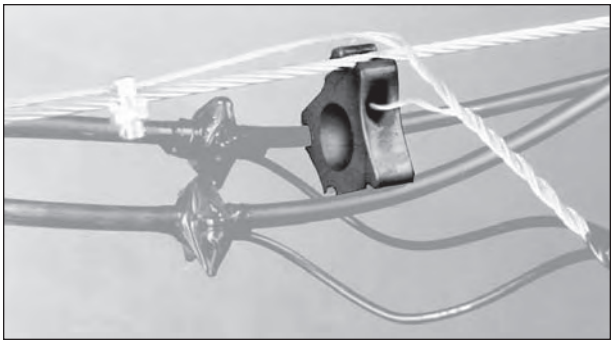
PREFORMED LINE PRODUCTS

Section 15 – Distribution (Overhead): Multiplexed Cable Hardware

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Cable Separator: For use with Triplex or Quadraplex Cable



Typical Installation -
Cable Separator
(NOTE: product is available in black only)

Features:

- Lightweight, less than 1 pound each
- Unbreakable black polyurethane
- Noncorrosive material
- Deeper conductor grooves for positive conductor placement
- Extra conductor groove for Quadraplex applications



Typical Installation -
POLE-MOUNT Cable Separator
(NOTE: product is available in black only)

Features:

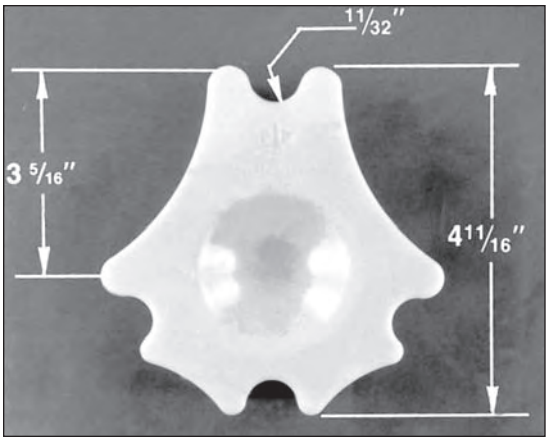
- Easy installation
- UV Stabilized
- High dielectric strength suitable for up to 750 volts
- Similar in size to porcelain separators
- Other designs available

Catalog No.	Description	(Wt. Per Unit oz.)	Units Per Carton
5060100	1 Dead-end hole	10	50
5060150	1 Dead-end hole + 3 tie down holes	7	50
5060160	POLE-MOUNT Cable Separator - 1 Dead-end hole + tie down holes, bolts directly to the pole	10	50

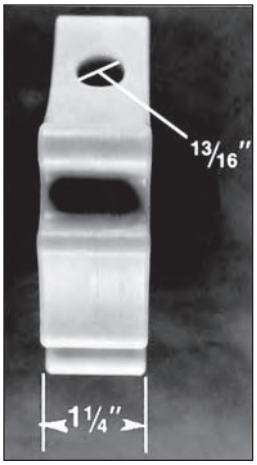
Dimensions (continued next page)

Cable Separator: For use with Triplex or Quadraplex Cable

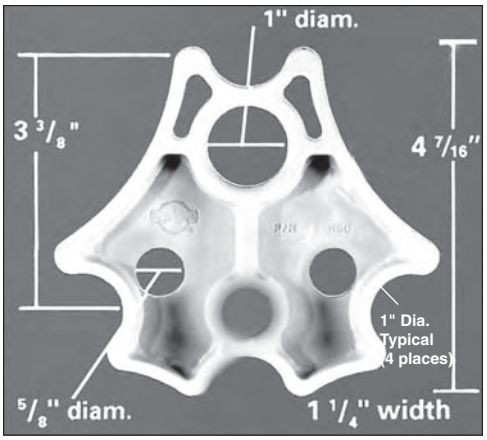
Dimensions



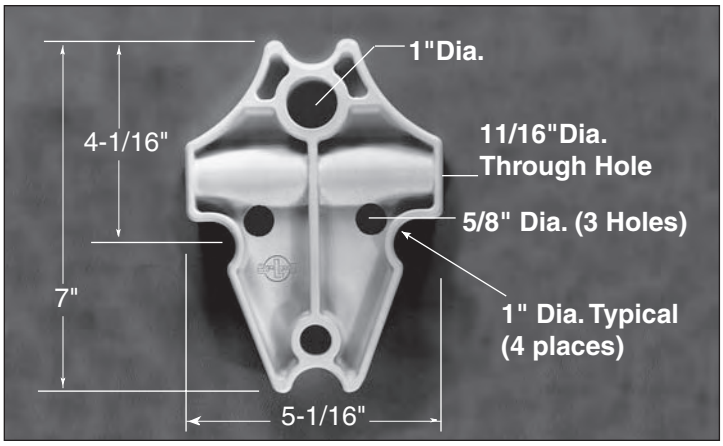
5060100 – Front View



5060100 – Side View



5060150 – (1-1/4" width)



5060160

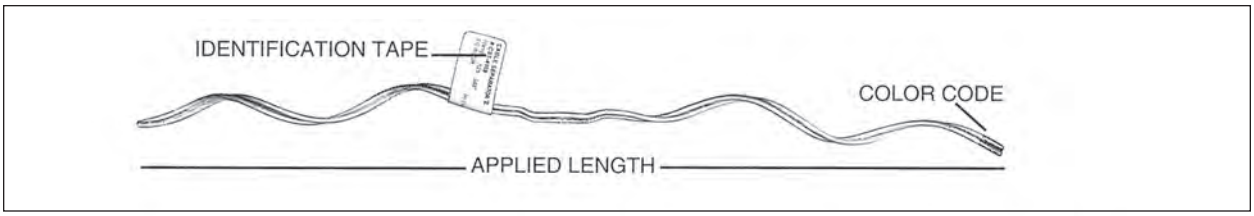
Note: Cable Separators are available in black only

SAFETY CONSIDERATIONS

1. This product is intended for a specified application. CAUTION: DO NOT MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES. This product may be reused if in good condition.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ Cable Separator before application.
5. PREFORMED™ Cable Separators are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Cable Separator Tie

FOR USE ON BARE OR PLASTIC JACKETED CONDUCTORS
AND TRI-PLEX OR QUADRAPLEX
CABLE SEPARATORS



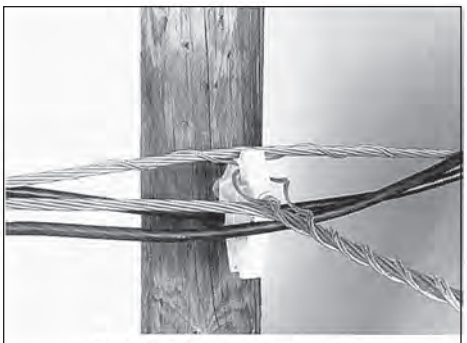
NOMENCLATURE

Material: Aluminized steel.

Color Code: Identifies proper conductor size, corresponding to tabular information appearing in this section.

Identification Tape: Lists catalog numbers and nominal conductor sizes.

Applied Length: Describes length of tie after installation, plus assists in product identification.


Cable Separator Tie applied

GENERAL RECOMMENDATIONS

The Cable Separator Tie is intended for use on aluminum based conductors with diameters from .245" to .588". Each Cable Separator Tie covers a range of conductor diameters as outlined in the following table.

Cable Separator Ties are designed to fit Preformed™ Cable Separators (except 5060100 series). However, Cable Separator Ties can also be used with cable separators from other manufacturers. Consult Preformed Line Products Company for recommendations.

To insure proper fit and service life of the Cable Separator Tie, it is recommended only Cable Separator Ties with uniform dimensions be used. When in doubt, consult PLP® for general guidelines.

The Cable Separator Tie is designed to provide superior mechanical strength and resiliency during conductor motion and cyclic loading conditions.

The Cable Separator Tie is designed to outperform hand tie devices during conductor motion activity, such as aeolian vibration and galloping. However, on some lines the use of dampers may be necessary to prevent damage. Utilities that have experienced conductor motion or expect to, should consider adding dampers. Consult PLP for general guidelines and advice concerning conductor motion and dampers.

INSTALLATION GUIDELINES

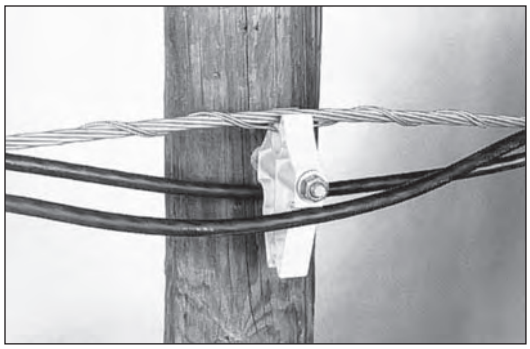
Line Angles - General Guidelines: Cable Separator Tie will normally accept small angles up to 10˚, but in all cases the conductor should rest in the preferred insulator groove, independently of the tie, so the tie is not required to force the conductor to remain in that groove. The largest practical angle a tie can accommodate depends upon limiting factors such as conductor size, tension, span lengths, sag angles, insulator style and orientation, etc. Consult PLP for further guidance on line angle issues.

Tapping: Taps should not be made directly over the legs or loop of the Cable Separator Tie.

Conductor Compatibility: Cable Separator Ties should be used only on the size, type, and lay direction for which they are designed. When using conductors not mentioned in this catalog section, consult PLP.

Cable Separator Tie

For use on:
ACAR, All-Aluminum
ACSR, Aluminum Alloy
AWAC®, Compacted ACSR
Plastic Jacketed Conductor



CATALOG NUMBER	DIAMETER RANGE (INCHES)		NOMINAL CONDUCTOR SIZE		UNITS PER CARTON	WT./LBS. PER CARTON	APPLIED LENGTH (INCHES)	COLOR CODE
	MIN.	MAX.	BARE CONDUCTOR	PLASTIC JACKET CONDUCTOR				
CST-4102	.245	.277	#4 (6/1, 7/1) #4 (7W Alum. Alloy)	#6 (7W, 2/64s) #6 (solid 3/64s) #6 (6/1, 2/64s)	100	9	12	Orange
CST-4104	.316	.357	#2 (6/1, 7/1) #2 (7W Alum. Alloy) #1 (6/1)	#4 (7W, 3/64s) #4 (6/1, 7/1, 3/64s)	100	10	14	Red
CST-4105	.358	.405	1/0 (7W All Alum.) 1/0 (6/1) 1/0 (7W Alum Alloy)	#3 (7W, 4/64s) #2 (7W, 3/64s) #4 (7W, 5/64s)	100	12	15	Yellow
CST-4106	.406	.459	2/0 (7W All Alum.) 2/0 (6/1) 2/0 (7W Alum. Alloy)	#2 (6/1, 3/64s) #2 (7W, 4/64s) #1 (7W, 4/64s)	100	14	17	Blue
CST-4107	.460	.520	3/0 (7W All Alum.) 3/0 (6/1) 3/0 (7W Alum. Alloy)	#4 (7W, 8/64s) #1 (6/1, 4/64s) #1 (7W-19W, 5/64s) 1/0 (7W, 4/64s)	100	14	18	Orange
CST-4108	.521	.588	4/0 (7W All Alum.) 4/0 (6/1) 4/0 (7W Alum. Alloy)	1/0 (6/1, 4/64s) 1/0 (7W, 5/64s) 2/0 (7W, 64s) 1/0 (6/1, 5/64s)	100	18	19	Red

EXPLANATORY NOTES:

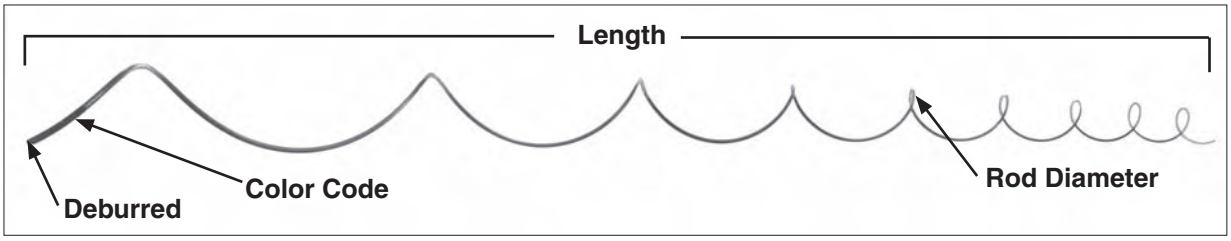
(1.) "Diameter Range" indicates the size of conductors that utilize the same tie. To obtain outside diameters of many conductors falling within the diameter range listed, consult the conductor charts in the General Information Section.

(2.) "Nominal Conductor Size" indicates only a few conductors, that have outside diameters within the ranges listed. Consult the General Information Section for those not shown.

(3.) AWAC is a registered trademark of the Copperweld Co.

Lashing Rods

NOMENCLATURE



Color Code and Length: Assist in identification of size, corresponding to tabular information appearing on price pages.

Rod diameter: Identifies size of metal wire, corresponding to tabular information appearing on price pages. For covered rod, approximate thickness of plastic is indicated in addition to rod diameters.

GENERAL RECOMMENDATIONS

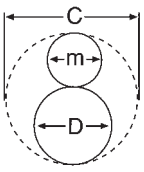
INTENDED USE: PREFORMED Lashing Rods can be used on all types of messegered by overhead cables. They are particularly adaptable to spans obstructed by trees, short spans over traffic intersections and support of power cable into and out of substations.

MATERIAL SELECTION: Lashing Rods are made of the same basic material as the messenger to which they are applied. This pertains to Galvanized, Copperweld, Aluminum-clad Steel, Stainless Type 302, and Stainless Type 316. Any of these materials can be selected from the catalog page tables. The recommended types of strand are also indicated.

SIZE SELECTION: In selecting the proper size Lashing Rod it is necessary to determine the smallest circumscribing circle that will enclose the messengers and the cables.

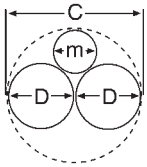
For grouping only **one** cable with a messenger, add the diameters and multiply by a factor of .850.

C = (D + m) x .850



For grouping **two** equal diameter cables, multiply the diameter of one cable times 2.00. Then to find the diameter of the maximum messenger that will fit in the interstices of the cables, multiply the diameter of one cable times .666.

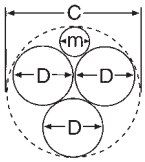
C = D x 2.00



m = D x .666

For grouping **three** equal diameter cables, multiply the diameter of one cable times 2.155. Then to find the diameter of the maximum messenger that will fit in the interstices of the cables, multiply the diameter of one cable times .483.

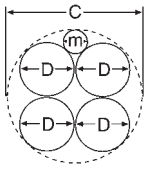
C = D x 2.155



m = D x .483

For grouping **four** equal diameter cables, multiply the diameter of one cable times 2.414. Then to find the diameter of the maximum messenger that will fit in the interstices of the cables, multiply the diameter of one cable times .414.

C = D x 2.414



m = D x .414

For grouping **unequal** diameter cables, or messengers too large to fit into the interstices above, the minimum diameter grouping can best be determined by a graphic layout to scale.

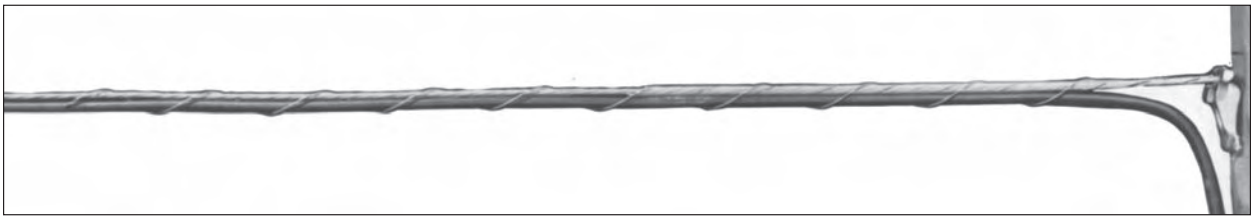
(Continued)

Lashing Rods

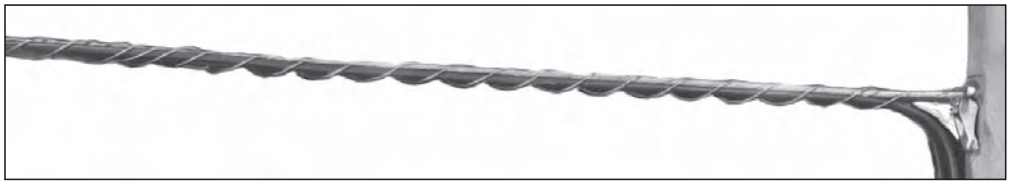
GENERAL RECOMMENDATIONS (continued)

Application – Inspection
The smaller inside diameter of the proper size Lashing Rod should exert a low radial pressure on the cables and messenger.

For most installations one Lashing Rod should be applied, overlapping one pitch length with each successive rod.

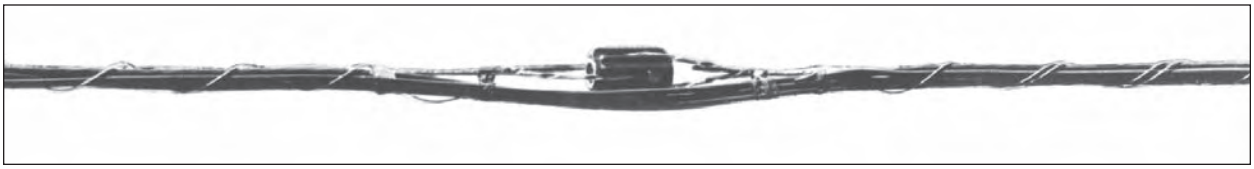


Two Lashing Rods, applied 180° apart, are recommended when the cable-messenger assembly weighs more than 8 pounds per foot, or at installations where the angle of sag exceeds 20° from the horizontal.



DESIGN MODIFICATIONS

Lashing Rod: Neoprene Covered



For use in highly corrosive environment, or on extra heavy cables, a neoprene coating can be applied to the Galvanized, Copperweld®, Aluminum-clad Steel or Stainless Steel Lashing Rods appearing on the price pages.

However, for normal outdoor power installations, the uncoated Lashing Rods are satisfactory.

In calculating circumscribing diameters for size selection, the thickness of the neoprene coating can be neglected.

Consult PLP for neoprene covered Lashing Rod. Include the minimum circumscribing diameter and the type of messenger material.

Copperweld and Aluminum-clad Steel are registered trademarks of the Copperweld Co.

Lashing Rods – Galvanized Steel



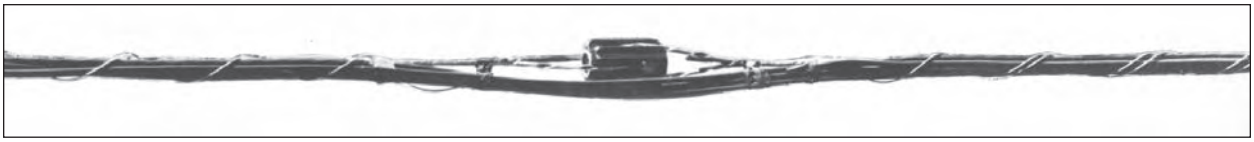
For use on:
Galvanized Messengered Cable

CATALOG NUMBER	C-COAT DIAMETER RANGE		UNITS	WT/LBS	LENGTH (FEET)	ROD DIAMETER (INCHES)	COLOR CODE
	MIN.	MAX	PER CARTON				
LR-6100	.400	.439	100	13	5 ft	.086	Red
LR-6101	.440	.489	100	13	5 ft	.086	White
LR-6102	.490	.539	100	13	5 ft	.086	Orange
LR-6103	.540	.599	100	13	5 ft	.086	Green
LR-6104	.600	.669	100	17	5 ft	.100	Yellow
LR-6105	.670	.749	100	17	5 ft	.100	White
LR-6106	.750	.839	100	17	5 ft	.100	Red
LR-6107	.840	.939	100	17	5 ft	.100	White
LR-6108	.940	1.049	100	17	5 ft	.100	Orange
LR-6109	1.050	1.169	100	24	5 ft	.119	Green
LR-6110	1.170	1.309	100	24	5 ft	.119	Yellow
LR-6111	1.310	1.459	100	24	5 ft	.119	White
LR-6112	1.460	1.629	100	37	6 ft	.138	Red
LR-6113	1.630	1.819	100	37	6 ft	.138	White
LR-6114	1.820	2.039	100	37	6 ft	.138	Orange
LR-6115	2.040	2.279	100	52	6 ft	.159	Green
LR-6116	2.280	2.539	100	54	6 ft	.159	Yellow
LR-6117	2.540	2.839	100	56	6 ft	.159	White
LR-6118	2.840	3.179	100	58	6 ft	.159	Red
LR-6119	3.180	3.559	50	34	6 ft	.172	White
LR-6120	3.560	3.999	50	35	6 ft	.172	Orange
LR-6121	4.000	4.479	50	36	6 ft	.172	Green
LR-6122	4.480	4.999	50	37	6 ft	.172	Yellow
LR-6123	5.000	5.599	50	38	6 ft	.172	White
LR-6124	5.600	6.299	50	39	6 ft	.172	Red

EXPLANATORY NOTES:

(1) Refer to General Recommendations of this section for proper circumscribing circle to apply to diameter range.
(2) Refer to General Recommendations of this section for material selection.

Lashing Rods – Aluminum-Clad Steel



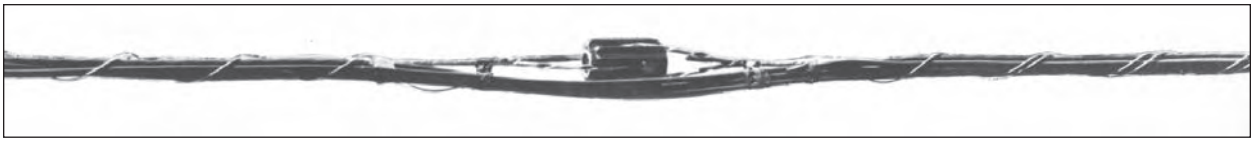
For use on:
Aluminum-clad Steel or Aluminum-Clad Steel Messengered Cable

CATALOG NUMBER	DIAMETER RANGE		UNITS	WT/LBS	LENGTH (FEET)	ROD DIAMETER (INCHES)	COLOR CODE
	MIN.	MAX	PER CARTON				
LR-2100	.400	.439	100	14	5 ft	.102	Red
LR-2101	.440	.489	100	14	5 ft	.102	White
LR-2102	.490	.539	100	14	5 ft	.102	Orange
LR-2103	.540	.599	100	14	5 ft	.102	Green
LR-2104	.600	.669	100	18	5 ft	.114	Yellow
LR-2105	.670	.749	100	18	5 ft	.114	White
LR-2106	.750	.839	100	18	5 ft	.114	Red
LR-2107	.840	.939	100	18	5 ft	.114	White
LR-2108	.940	1.049	100	18	5 ft	.114	Orange
LR-2109	1.050	1.169	100	24	5 ft	.128	Green
LR-2110	1.170	1.309	100	24	5 ft	.128	Yellow
LR-2111	1.310	1.459	100	24	5 ft	.128	White
LR-2112	1.460	1.629	100	36	6 ft	.144	Red
LR-2113	1.630	1.819	100	36	6 ft	.144	White
LR-2114	1.820	2.039	100	36	6 ft	.144	Orange
LR-2115	2.040	2.279	100	46	6 ft	.162	Green
LR-2116	2.280	2.539	100	47	6 ft	.162	Yellow
LR-2117	2.540	2.839	100	48	6 ft	.162	White
LR-2118	2.840	3.179	100	49	6 ft	.162	Red
LR-2119	3.180	3.559	50	32	6 ft	.182	White
LR-2120	3.560	3.999	50	33	6 ft	.182	Orange
LR-2121	4.000	4.479	50	34	6 ft	.182	Green
LR-2122	4.480	4.999	50	35	6 ft	.182	Yellow
LR-2123	5.000	5.599	50	36	6 ft.	.182	White
LR-2124	5.600	6.299	50	37	6 ft	.182	Red

EXPLANATORY NOTES:

(1) Refer to General Recommendations of this section for proper circumscribing circle to apply to diameter range.
(2) Refer to General Recommendations of this section for material selection.

Lashing Rods – Copperweld



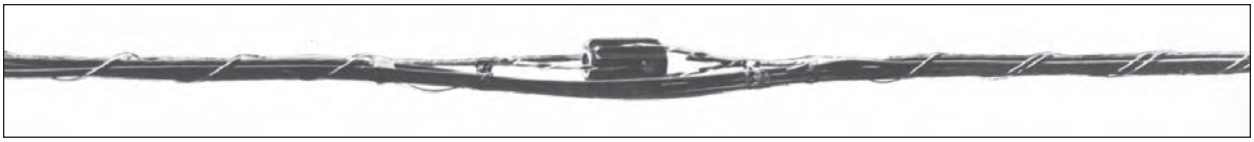
For use on:
Copperweld Messengered Cable

CATALOG NUMBER	DIAMETER RANGE		UNITS	WT/LBS	LENGTH (FEET)	ROD DIAMETER (INCHES)	COLOR CODE
	MIN.	MAX	PER CARTON				
LR-3100	.400	.439	100	18	5 ft	.102	Red
LR-3101	.440	.489	100	18	5 ft	.102	White
LR-3102	.490	.539	100	18	5 ft	.102	Orange
LR-3103	.540	.599	100	18	5 ft	.102	Green
LR-3104	.600	.669	100	23	5 ft	.114	Yellow
LR-3105	.670	.749	100	23	5 ft	.114	White
LR-3106	.750	.839	100	23	5 ft	.114	Red
LR-3107	.840	.939	100	23	5 ft	.114	White
LR-3108	.940	1.049	100	23	5 ft	.114	Orange
LR-3109	1.050	1.169	100	29	5 ft	.128	Green
LR-3110	1.170	1.309	100	29	5 ft	.128	Yellow
LR-3111	1.310	1.459	100	29	5 ft	.128	White
LR-3112	1.460	1.629	100	45	6 ft	.144	Red
LR-3113	1.630	1.819	100	45	6 ft	.144	White
LR-3114	1.820	2.039	100	45	6 ft	.144	Orange
LR-3115	2.040	2.279	100	56	6 ft	.162	Green
LR-3116	2.280	2.539	100	58	6 ft	.162	Yellow
LR-3117	2.540	2.839	100	58	6 ft	.162	White
LR-3118	2.840	3.179	100	60	6 ft	.162	Red
LR-3119	3.180	3.559	50	40	6 ft	.182	White
LR-3120	3.560	3.999	50	41	6 ft	.182	Orange
LR-3121	4.000	4.479	50	42	6 ft	.182	Green
LR-3122	4.480	4.999	50	43	6 ft	.182	Yellow
LR-3123	5.000	5.599	50	44	6 ft	.182	White
LR-3124	5.600	6.299	50	45	6 ft	.182	Red

EXPLANATORY NOTES:

(1) Refer to General Recommendations of this section for proper circumscribing circle to apply to diameter range.
(2) Refer to General Recommendations of this section for material selection.
(3) Copperweld is a registered trademark of the Copperweld Co.

Lashing Rods – Stainless Steel, Type 302



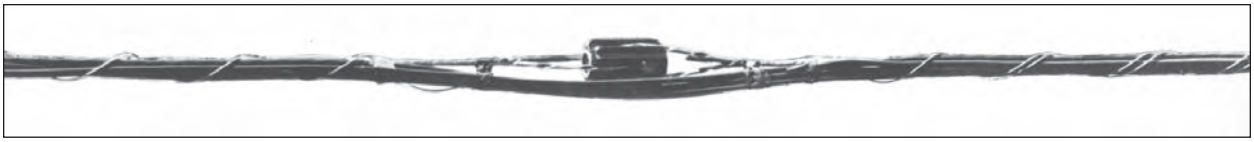
For use on:
Type 302 Stainless Steel Messengered Cable

CATALOG NUMBER	DIAMETER RANGE		UNITS PER CARTON	WT/LBS PER CARTON	LENGTH (FEET)	ROD DIAMETER (INCHES)	COLOR CODE
	MIN.	MAX					
LR-4100	.400	.439	100	13	5 ft	.085	Red
LR-4101	.440	.489	100	13	5 ft	.085	White
LR-4102	.490	.539	100	13	5 ft	.085	Orange
LR-4103	.540	.599	100	13	5 ft	.085	Green
LR-4104	.600	.669	100	18	5 ft	.101	Yellow
LR-4105	.670	.749	100	18	5 ft	.101	White
LR-4106	.750	.839	100	18	5 ft	.101	Red
LR-4107	.840	.939	100	18	5 ft	.101	White
LR-4108	.940	1.049	100	18	5 ft	.101	Orange
LR-4109	1.050	1.169	100	25	5 ft	.120	Green
LR-4110	1.170	1.309	100	25	5 ft	.120	Yellow
LR-4111	1.310	1.459	100	25	5 ft	.120	White
LR-4112	1.460	1.629	100	40	6 ft	.139	Red
LR-4113	1.630	1.819	100	40	6 ft	.139	White
LR-4114	1.820	2.039	100	40	6 ft	.139	Orange
LR-4115	2.040	2.279	100	54	6 ft	.161	Green
LR-4116	2.280	2.539	100	56	6 ft	.161	Yellow
LR-4117	2.540	2.839	100	56	6 ft	.161	White
LR-4118	2.840	3.179	100	58	6 ft	.161	Red
LR-4119	3.180	3.559	50	36	6 ft	.175	White
LR-4120	3.560	3.999	50	37	6 ft	.175	Orange
LR-4121	4.000	4.479	50	38	6 ft	.175	Green
LR-4122	4.480	4.999	50	39	6 ft	.175	Yellow
LR-4123	5.000	5.599	50	40	6 ft	.175	White
LR-4124	5.600	6.299	50	41	6 ft	.175	Red

EXPLANATORY NOTES:

(1) Refer to General Recommendations of this section for proper circumscribing circle to apply to diameter range.
(2) Refer to General Recommendations of this section for material selection.

Lashing Rods – Stainless Steel, Type 316



For use on:
Type 316 Stainless Steel Messengered Cable

CATALOG NUMBER	DIAMETER RANGE		UNITS	WT/LBS	LENGTH (FEET)	ROD DIAMETER (INCHES)	COLOR CODE
	MIN.	MAX	PER CARTON				
LR-5100	.400	.439	100	13	5 ft	.085	Red
LR-5101	.440	.489	100	13	5 ft	.085	White
LR-5102	.490	.539	100	13	5 ft	.085	Orange
LR-5103	.540	.599	100	13	5 ft	.085	Green
LR-5104	.600	.669	100	18	5 ft	.101	Yellow
LR-5105	.670	.749	100	18	5 ft	.101	White
LR-5106	.750	.839	100	18	5 ft	.101	Red
LR-5107	.840	.939	100	18	5 ft	.101	White
LR-5108	.940	1.049	100	18	5 ft	.101	Orange
LR-5109	1.050	1.169	100	25	5 ft	.120	Green
LR-5110	1.170	1.309	100	25	5 ft	.120	Yellow
LR-5111	1.310	1.459	100	25	5 ft	.120	White
LR-5112	1.460	1.629	100	40	6 ft	.139	Red
LR-5113	1.630	1.819	100	40	6 ft	.139	White
LR-5114	1.820	2.039	100	40	6 ft	.139	Orange
LR-5115	2.040	2.279	100	54	6 ft	.161	Green
LR-5116	2.280	2.539	100	56	6 ft	.161	Yellow
LR-5117	2.540	2.839	100	56	6 ft	.161	White
LR-5118	2.840	3.179	100	58	6 ft	.161	Red
LR-5119	3.180	3.559	50	36	6 ft	.175	White
LR-5120	3.560	3.999	50	37	6 ft	.175	Orange
LR-5121	4.000	4.479	50	38	6 ft	.175	Green
LR-5122	4.480	4.999	50	39	6 ft	.175	Yellow
LR-5123	5.000	5.599	50	40	6 ft	.175	White
LR-5124	5.600	6.299	50	41	6 ft	.175	Red

EXPLANATORY NOTES:

(1) Refer to General Recommendations of this section for proper circumscribing circle to apply to diameter range.
(2) Refer to General Recommendations of this section for material selection.

PREFORMED LINE PRODUCTS

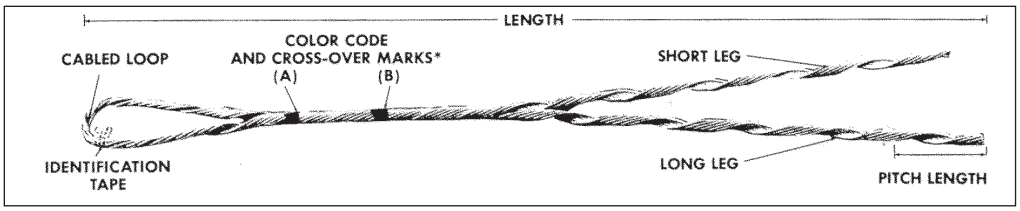
Section 16 – Distribution (Overhead): Guying Products

Table of Contents **Page**

Guy-Grip® Dead-end 16-1
Wrap Guy Link 16-9
Big-Grip Dead-end 16-11
Strand Splice 16-15
Safety Guy Wire Dispenser 16-21
Pulling Eye 16-22

GUY-GRIP® Dead-end

NOMENCLATURE



Cross-over Marks*:
(A) – Indicate starting point for application on smaller diameter fittings described on the reverse side of this page.

(B) – Indicates alternate starting point for application on larger diameter fittings described on the reverse side of this page.

Cabled Loop: Furnished as standard, all sizes.

Pitch Length: One complete wrap.

Color Code and Length: Assist in identification of strand size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

Short Leg-Long Leg: Identifies rods belonging to each leg, after application. During application, the short leg should be applied first.

GENERAL INFORMATION

GUY-GRIP dead-ends are intended for use on single wood poles associated with distribution construction.

GUY-GRIP dead-ends were not designed or tested for use on overhead shield wires and not intended for that application.

Refer to Big-Grip dead-end, an alternate product recommended for guying transmission construction, or tower and antenna applications.

Refer to the Installation Tools section for the PREFORMED™ Pulling Eye, designed to assist application at the anchor.

Rated holding strength is published for individual sizes on the reverse side of the catalog specification pages.

MATERIAL SELECTION: GUY-GRIP dead-ends are made of the same basic material as the strand to which they are applied. This pertains to galvanized, *Bezinal®, Copperweld, Aluminum clad steel, stainless Type 302, and stainless Type 316. Any of these materials can be selected from the catalog tables. The recommended types of strand are also indicated.

TAPPING: GUY-GRIP dead-ends are mechanical devices not designed as current transfer connectors. Consequently, tapping is not recommended over or through the GUY-GRIP dead-end.

APPLICATION-INSPECTION: Within the first 3 months after initial application, GUY-GRIP dead-ends may be removed and reapplied two times after initial application for the purpose of retensioning the guy. After 3 months a new dead-end should be used any time removal is required.

GUY-GRIP dead-ends should be used on hardware that is held in a fixed position; the fitting should not be allowed to rotate or spin about the axis of the strand. **They should not be used as tools; that is, come-alongs, pulling-in grips, etc.**

Lay direction of both the GUY-GRIP dead-ends and the strand should be the same. Most strand is left-hand lay.

STRAND TAIL: For appearance and safety the strand tail should be cut as close as convenient to the crossover mark and buried inside the crossover mark if possible. If desired, the strand tail can, instead, extend through the loop for grounding purposes. Any tail over 2" or 3" should be restrained and not permitted to rotate during loading of the guy.

SAFETY CONSIDERATIONS

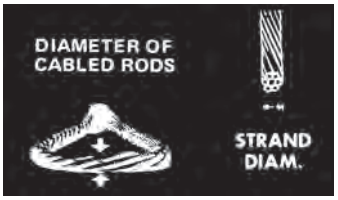
1. This product is intended for a single (one-time) use and for the specified application, although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size GUY-GRIP dead-end before application.
5. GUY-GRIP dead-ends are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Bezinal is a registered trademark of the Bekaert Corporation.

GUY-GRIP® Dead-end

HARDWARE CONSIDERATIONS

CABLED LOOP: Anchor eyes and other fittings need groove diameters only slightly larger than the strand because the diameter of the cabled rods of GUY-GRIP dead-ends approximates strand diameter. Cabled loops are designed for a variety of fittings with dimensions shown in the table below.



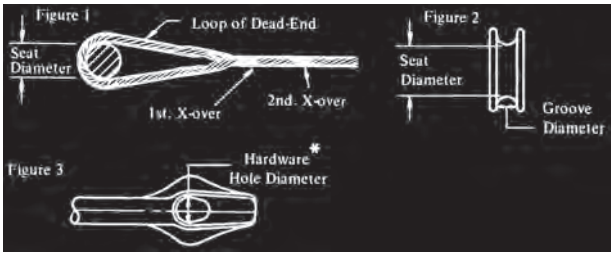
Suggested hardware dimensions for cabled-loop GUY-GRIP dead-ends

DEAD-END DIAMETER RANGE (INCHES)		NOMINAL STRAND SIZES		SEAT DIMENSIONS (figures 1 & 2) (INCHES)			MINIMUM GROOVE DIAMETER (in.) (fig. 2)	MINIMUM HOLE DIAMETER* (in.) (fig. 3)
Min.	Max.	GALVANIZED STEEL	ALUMINUM-CLAD STEEL	Min. seat diameter with dead-end at first cross-over mark.	Max. seat diameter with dead-end at first cross over mark.	Max. seat diameter with dead-end at second cross-over mark.		
.123	.143	1/8	–	3/4	1-3/4	-	3/16	1/4
.144	.173	5/32	–	3/4	1-3/4	2-1/2	1/4	5/16
.174	.203	3/16	–	1-0	1-3/4	2-1/2	1/4	3/8
.204	.230	7/32	3 #10, 4M3	1-1/8	1-3/4	2-1/2	5/16	3/8
.231	.259	1/4	7 #12, 6M	1-1/8	1-3/4	2-1/2	5/16	7/16
.260	.291	9/32	7 #11, 8M	1-1/8	1-3/4	2-1/2	3/8	1/2
.292	.336	5/16	7 #10, 10M	1-1/4	1-3/4	2-1/2	3/8	9/16
.337	.394	3/8	7 #8, 14M, 16M	1-3/8	1-3/4	2-1/2	7/16	5/8
.395	.474	7/16	7 #7, 18M, 20M	1-3/8	2-3/8	2-1/2	1/2	11/16
.475	.515	**	7 #6	1-3/8	2-3/8	–	9/16	3/4
.516	.570	**	7 #5, 25M	1-1/2	2-5/8	–	5/8	15/16

** Depending on geometric shape of the hole, a hole diameter less than specified may be acceptable.*

*** Use Big-Grip dead-ends.*

† Guying of transmission structures and metal towers require Big-Grip dead-ends, VARI-GRIP™ dead-ends, or ROCKET-SOCKET dead-ends.

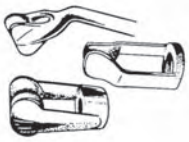


ACCEPTABLE FITTINGS

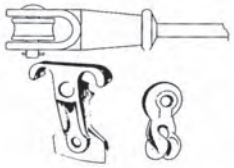
ANCHOR RODS



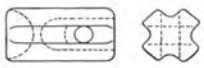
THIMBLE EYE-BOLTS, -EYENUTS & EYES



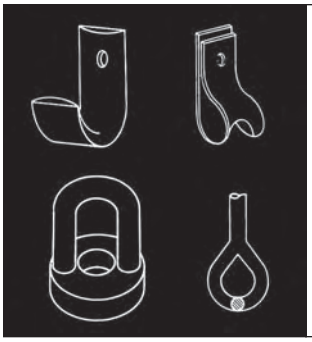
POLE FITTINGS



GUY-STRAIN INSULATORS



ANSI
54-1
54-2
54-3
54-4



CAUTION:
Hardware of this type is not normally acceptable because fatigue life of GUY-GRIP dead-ends could be substantially reduced.

Heavy-Duty-Type Cable Thimbles, if used, can collapse when guy tensions are high. If thimbles are used in the loop of the GUY-GRIP dead-end, a large pin is recommended to fill the loop of the thimble to prevent distortion. The collapsing strength of the thimble and the proper pin size should be obtained from the thimble manufacturer.

GUY-GRIP® Dead-end: Galvanized Steel

For use on:
Extra High Strength, High Strength, Siemens Martin, Utilities Grade



B-COAT

CATALOG NUMBER	SIZE (INCHES)	STRAND CONSTRUCTION	MEAN DIAMETER (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	COLOR CODE
GDE-1102	3/16	7W 7W	.186 .195	100	30	20	Red
GDE-1103	7/32	7W	.216	50	19	24	Green
GDE-1104	1/4	3W 7W	.259 .240	50	24	25	Yellow
GDE-1105	9/32	7W	.279	50	26	28	Blue
GDE-1106	5/16	3W 7W 7W	.312 .312 .327	50	39	31	Black
GDE-1107	3/8	3W 7W	.356 .360	50	51	35	Orange
GDE-1108	7/16	7W	.435	25	40	38	Green

C-COAT

CATALOG NUMBER	SIZE (INCHES)	STRAND CONSTRUCTION	MEAN DIAMETER (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	COLOR CODE
GDE-2102	3/16	7W 7W	.186 .195	100	30	20	Red
GDE-2103	7/32	7W	.216	50	19	24	Green
GDE-2104	1/4	3W 7W	.259 .240	50	24	25	Yellow
GDE-2105	9/32	7W	.279	50	26	28	Blue
GDE-2106	5/16	3W 7W 7W	.312 .312 .327	50	39	31	Black
GDE-2107	3/8	3W 7W	.356 .360	50	51	35	Orange
GDE-2108	7/16	7W	.435	25	40	38	Green

Left-hand lay standard

EXPLANATORY NOTES:

(1) Big-Grip dead-end is recommended as an alternative product for guying multiple pole structures or metal towers associated with transmission construction.
(2) Refer to Hardware Considerations for acceptable fittings. Cabled Loop design furnished as standard, all sizes.
(3) Rated holding strength is 100% of published rating for all grades of galvanized strand.
(4) Consult PLP for sizes and stranding not shown.

GUY-GRIP® Dead-end: Bezinal®

For use on:
Bezinal Strand

CATALOG NUMBER	SIZE (inches)	STRAND CONSTRUCTION	STRAND MEAN DIAMETER (inches)	PER CARTON UNITS	PER CARTON WEIGHT (lbs)	LENGTH (inches)	COLOR CODE
BDE-9102	3/16	7W 7W	.186 .195	100	30	20	RED
BDE-9104	1/4	3W 7W	.259 .240	50	24	25	YELLOW
BDE-9106	5/16	3W 7W 7W	.312 .312 .327	50	39	31	BLACK
BDE-9107	3/8	3W 7W	.356 .360	50	51	35	ORANGE

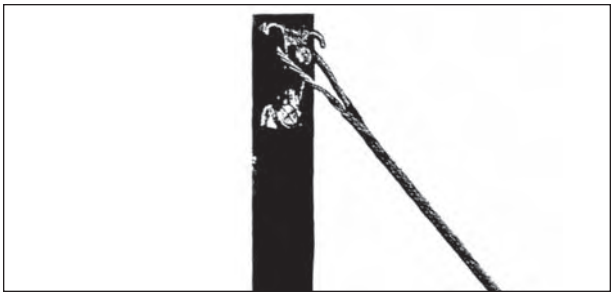
Left-hand lay standard

EXPLANATORY NOTES:

(1) Big-Grip dead-end is recommended as an alternative product for guying multiple pole structures or metal towers associated with transmission construction.
(2) Rating holding strength is 100% of the published rating for the strand.
(3) Bezinal is a registered trademark of the Bekaert Company.

GUY-GRIP® Dead-end

For use on:
Aluminum Clad Steel Strand



CATALOG NUMBER	MEAN DIAMETER (INCHES)	NOMINAL STRAND SIZE	UNITS PER CARTON	WT./LBS.	LENGTH (INCHES)	COLOR CODE
AWDE-4102	.174	3 # 12	100	21	18	Orange
AWDE-4108	.220 .220	4M 3 # 10	50	20	21	Green
AWDE-4110	.247 .242	3 # 9 6M	50	20	24	Yellow
AWDE-4113	.277 .272	3 # 8 8M	50	22	24	Blue
AWDE-4116	.311 .306 .306	3 # 7 10M 5/16" - 7 # 10	50	29	26	Black
AWDE-4118	.330	11.5M	50	30	26	Green
AWDE-4119	.349 .343 .343	3 # 6 12.5M 11/32" - 7 # 9	50	41	29	Yellow
AWDE-4120	.363	14M	50	53	31	Blue
AWDE-4122	.392 .385 .386	3 # 5 3/8" - 7 # 8 16M	50	55	32	Orange
AWDE-4124	.417	18M	25	37	34	Black
AWDE-4125	.433	7/16" - 7 # 7	25	40	36	Green
AWDE-4126	.444	20M	10	22	37	Yellow
AWDE-4128	.486	1/2" - 7 # 6	10	23	39	Blue
AWDE-4130	.519	25M	10	31	43	Red
AWDE-4131	.546	7 # 5	10	32	44	Yellow

Left-Hand Lay standard

EXPLANATORY NOTES:

(1) Big-Grip dead-end is recommended as an alternative product for guying multiple pole structures or metal towers associated with transmission construction.
(2) Refer to Hardware Considerations for acceptable fittings. Cabled Loop design furnished as standard, all sizes.
(3) Published rating of rated holding strength is 100% of all grades of galvanized strand
(4) Consult PLP for sizes and stranding not shown.

GUY-GRIP® Dead-end: Aluminized

For use on:
Aluminized Strand



CATALOG NUMBER	SIZE (INCHES)	STRAND CONSTRUCTION	MEAN DIAMETER (INCHES)	UNITS WT./LBS. PER CARTON		LENGTH (INCHES)	COLOR CODE
AZDE-7100	3/16	7W 7W	.186 .195	100	25	18	Red
AZDE-7102	1/4	3W 7W	.259 .240	50	22	23	Yellow
AZDE-7103	9/32	7W	.279	50	27	24	Blue
AZDE-7104	5/16	3W 7W 7W	.312 .312 .327	50	37	27	Black
AZDE-7106	3/8	3W 7W	.356 .360	50	63	32	Orange
AZDE-7107	7/16	7W	.435	25	45	34	Green

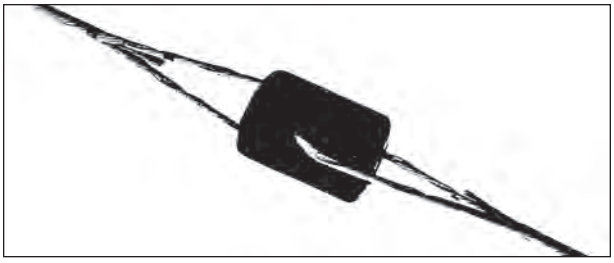
Left-Hand Lay standard

EXPLANATORY NOTES:

(1) Big-Grip dead-end is recommended as an alternative product for guying multiple pole structures or metal towers associated with transmission construction.
(2) Refer to Hardware Considerations for acceptable fittings. Cabled Loop design furnished as standard, all sizes.
(3) Refer to General Information for material selection.
(4) Published rating of rated holding strength is 100% of all grades of galvanized strand.
(5) Consult PLP for sizes and stranding not shown.

GUY-GRIP® Dead-end: Copperweld®

For use on:
Copperweld Strand



CATALOG NUMBER	MEAN DIAMETER (INCHES)	NOMINAL STRAND SIZE	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	COLOR CODE
CDE-8100	.164	2.2M	100	19	17	Orange
CDE-8102	.174	3 # 12	100	24	17	Red
CDE-8106	.209	4M	100	32	18	White
CDE-3101	.220	3 # 10	100	44	20	Green
CDE-3103	.247 .237	3 # 9 6M	50	24	21	Yellow
CDE-3104	.258	6M3	50	25	22	White
CDE-3106	.276 .277	8M 3 # 8	50	26	23	Blue
CDE-3109	.303 .306 .311	10M 7 # 10 - 5/16" 3 # 7	50	34	25	Red
CDE-3112	.343 .345 .349	7 # 9 - 11/32" 12.5M 3 # 6	50	46	27	Green
CDE-3113	.360	14M	50	64	30	Blue
CDE-3115	.385 .386 .392	7 # 8 - 3/8" 16M 3 # 5	50	65	31	White
CDE-3117	.414	18M	25	46	34	Orange
CDE-3118	.438 .433	20M 7 # 7 - 7/16"	25	47	35	Yellow
CDE-3121	.486	7 # 6 - 1/2"	25	65	39	Blue
CDE-3123	.525	25M	10	37	43	Green
CDE-3124	.546	7 # 5 - 9/16"	10	38	44	Yellow

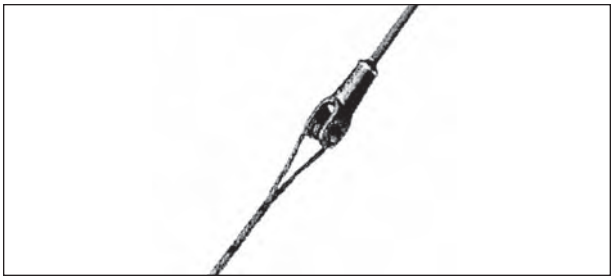
Left-Hand Lay standard

EXPLANATORY NOTES:

(1) Big-Grip dead-end is recommended as an alternative product for guying multiple pole structures or metal towers associated with transmission construction.
(2) Refer to Hardware Considerations for acceptable fittings. Cabled Loop design furnished as standard, all sizes.
(3) Refer to General Information for material selection.
(4) Rated holding strength is 100% of the published rating of the strand
(5) Consult PLP for sizes and stranding not shown.
(6) Copperweld is a registered trademark of the Copperweld Co.

GUY-GRIP® Dead-end: Stainless Steel

For use on:
Type 302 and Type 430 Strand



CATALOG NUMBER	TYPE 302 STRAND SIZE (INCHES)	CONSTRUCTION	MEAN DIAMETER (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	COLOR CODE
SDE-5101	7/32	3W 7W	.224 .216	100	30	22	Blue
SDE-5102	1/4	3W 7W	.259 .249	50	25	26	Yellow
SDE-5103	9/32	7W	.279	50	26	27	Black
SDE-5104	5/16	3W 7W	.312 .312	50	41	31	Orange
SDE-5105	3/8	3W 7W	.356 .360	50	66	37	Green

For use on:
Type 316 Strand

CATALOG NUMBER	TYPE 316 STRAND SIZE (INCHES)	CONSTRUCTION	MEAN DIAMETER (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	COLOR CODE
SDE-6101	7/32	3W 7W	.224 .216	100	30	22	Blue
SDE-6102	1/4	3W 7W	.259 .249	50	25	26	Yellow
SDE-6103	9/32	7W	.279	50	26	27	Black
SDE-6504*	5/16	3W 7W	.312 .312	50	41	31	Orange
SDE-6105	3/8	3W 7W	.356 .360	50	66	37	Green

*These dead-ends utilize the open helix design.

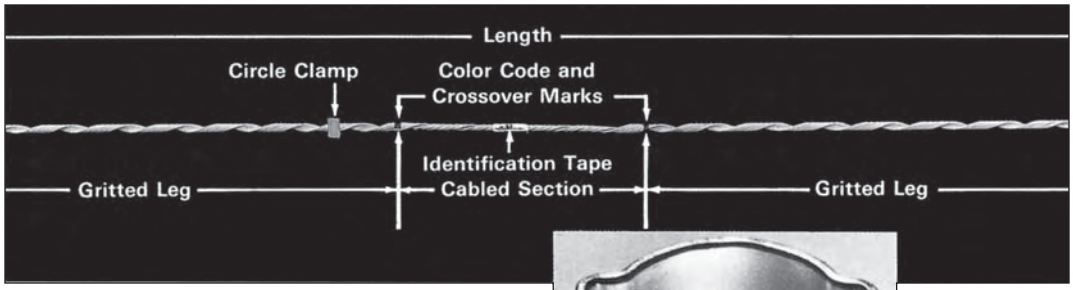
Left-Hand Lay standard

EXPLANATORY NOTES:

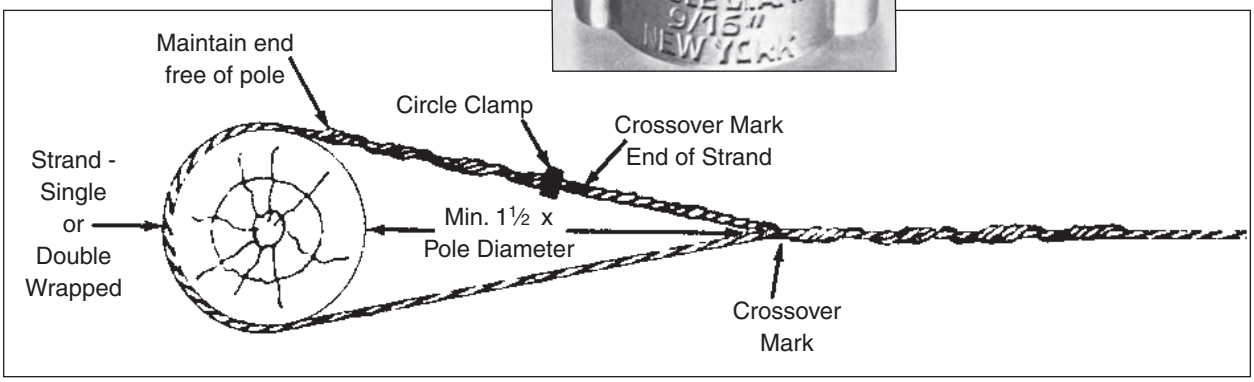
(1) Big-Grip dead-end is recommended as an alternative product for guying multiple pole structures or metal towers associated with transmission construction.
(2) Refer to Hardware Considerations for acceptable fittings. Cabled Loop design furnished as standard, all sizes.
(3) Refer to General Information for material selection.
(4) Rated holding strength is 100% of the published rating of the strand.
(5) Consult PLP for sizes and stranding not shown.

Wrap Guy Link

NOMENCLATURE







GENERAL RECOMMENDATIONS

As a general guide, the following recommendations can be adapted to the specific conditions.

This product is intended for a single (one-time) use and for the specified application although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.

INTENDED USE

Wrap Guy Links are designed as an alternate for *GUY-GRIP® dead-ends*, for use at the pole only, when the guy strand is wrapped around the pole. Recommended for any size pole, single or double wrapped, the *Wrap Guy Link* neatly secures the tail of the guy strand to the load portion of the down guy.

APPLICATION-INSPECTION



Either of the gritted leg sections can be applied to the tail-end of the strand. The end of the strand should coincide with the crossover mark on the gritted leg. The Circle Clamp, a component part of each *Wrap Guy Link*, is then crimped one inch above the crossover mark. The strand, with one of the gritted legs applied, is now ready to be wrapped around the pole. The purposes of the circle clamp is to assure that the gritted legs remain applied when single or double turns are wrapped around the pole.

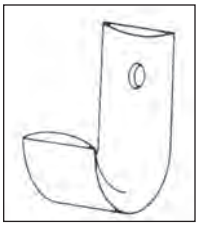
After wrapping the strand around the pole, the remaining gritted leg is applied to the continued strand, or load portion of the down guy. The completed application should be inspected for two conditions:

1. The Wrap Guy Link itself, should be free of the pole. Only the wrapped portion of the strand should make contact with the pole.
2. The distance between the pole and the crossover mark on the continued strand should approximate 1-1/2 pole diameters.

The purpose of these two contions is to assure that the angle formed by the loop will not exceed 30˚.

ACCEPTABLE FITTINGS

Contrary to recommendations for *GUY-GRIP® dead-ends*, *Guy Hooks* are acceptable for use with *Wrap Guy Links*.



Wrap Guy Link

For use on:
Galvanized Steel,
Extra High Strength,
High Strength,
Siemens Martin,
Utilities Grade



CATALOG NUMBER	SIZE (INCHES)	STRAND CONSTRUCTION	MEAN DIAMETER (INCHES)	LENGTH (INCHES)	COLOR CODE	RATED HOLDING STRENGTH (LBS.)
WGL-2100	1/4	7W 3W	.240 .259	48	Yellow	6,650
WGL-2101	9/32	7W	.279	54	Blue	8,950
WGL-2102	5/16	7W 3W	.312 .312	60	Black	11,200
WGL-2103	3/8	7W 3W	.360 .356	69	Orange	15,400
WGL-2104	7/16	7W	.435	80	Green	20,800
WGL-2105	1/2	7W 19W	.495 .500	90	Blue	26,900
WGL-2106	9/16	7W 19W	.564 .565	100	Yellow	35,000
WGL-2107	5/8	7W 19W	.621 .625	111	Black	42,400

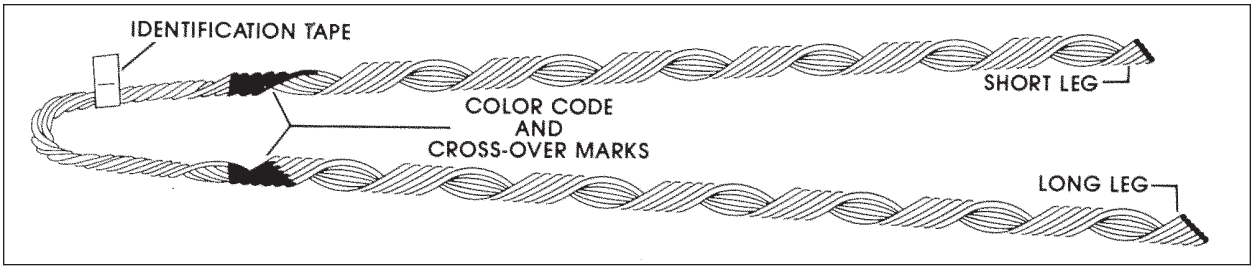
Left-hand lay standard

EXPLANATORY NOTES:

(1) Wrap Guy Link is furnished with Circle Clamp.
(2) Wrap Guy Link is furnished C-Coat galvanized as standard.
(3) Rated Holding Strengths appearing in table are for E.H.S. strand.
(4) For quantities less than 25 pieces, consult PLP.

Big-Grip Dead-end

NOMENCLATURE



Cross-over Marks: Indicate starting point for application.

Color Code and Length: Assist in identification of strand size, corresponding to tabular information appearing on catalog pages.

Identification Tape: Shows catalog number, nominal sizes.

Short Leg-Long Leg: Identifies rods belonging to each leg, after application. During application, the short leg should be applied first.

GENERAL INFORMATION

Big-Grip dead-ends are designed for use on Transmission, Antenna, Communications, and other types of guyed structures that require use of large guy strand.

Rated Holding Strength (RHS): Big-Grip dead-ends are designed to develop the maximum loads published on the catalog pages only for those specific strands listed.

Material Selection: Big-Grip dead-ends are made from material which is compatible with the strand they are designed to be used with **except where noted otherwise.**

This product is intended for a single (one-time) use and for the specified application although it may be reapplied twice for retensioning within 90 days of initial installation. CAUTION: DO NOT MODIFY OR REUSE THIS PRODUCT AFTER 90 DAYS UNDER ANY CIRCUMSTANCES.

INSTALLATION GUIDELINES

Strand Compatibility: Big-Grip dead-ends should be used only on the size and strand for which they are designed. They must have the same lay as the strand to which they are applied.

When ordering Big-Grip dead-ends make sure to specify the strand on which it is to be used and the strand lay.

When using types of strand and/or sizes of strand not mentioned in these catalog pages, consult PLP for compatible Big-Grip dead-end designs.

During installation and at all times, care should be taken to avoid gouging or damaging the corrosion preventive material of either the Big-Grip dead-end or the strand.

Big-Grip Dead-ends must not be used as tools, that is, come-alongs, pulling-in grips, etc.

Normally tools are not required to install Big-Grip dead-ends, however a screwdriver may be used to split the legs into subsets. When splitting the legs, do not make more than two subsets per leg.

For hardware and hardware dimensions to be used in conjunction with Big-Grip dead-ends refer to Table 1, on the next page.

Big-Grip dead-ends should not be used on hardware which allows the strand to rotate or spin about its axis uncontrolled. Adjustable hardware, such as a turnbuckle, may be used as long as rotational movement of the strand is restricted. Consult PLP for additional information concerning adjustable hardware that can be used with Big-Grip dead-ends.

Hardware used in conjunction with Big-Grip dead-ends should have smooth contours, ample groove clearances, acceptable diameters and sufficient strength to minimize abrasion and fatigue of the loop area.

Hardware: Table 1, Figures 1-6 illustrate some of the possible hardware and their dimensions that may be used with Big-Grip dead-ends:

(A) Figure 1 illustrates minimum and maximum acceptable seat diameters to which the Big-Grip dead-end can be applied.

(B) Figure 2 illustrates seat diameters and minimum groove diameters.

(C) Figure 3 illustrates minimum hardware hole diameters.

Big-Grip Dead-end

Thimble Recommendations

(A) Only heavy-duty type wire rope thimbles or solid ("Hawser") type thimbles are recommended for use with Big-Grip dead-ends. (Refer to Figures 4,5, and 6.)

(B) Heavy-duty type wire rope thimbles can collapse when guy tensions are high. In order to support and protect the loop area of the Big-Grip dead-end special precautions are necessary.

(C) In order to prevent collapse of the thimble, either a solid ("Hawser") type thimble (Figure 4), or a large pin inside the thimble (Figure 5), or a smaller pin (such as a shackle pin) plus double extra strong weight pipe or equivalent (Figure 6) is necessary. Double extra strong weight pipe, which has increased wall thickness and strength over schedule 160 pipe, does not have a schedule number but information can be obtained from a pipe supplier. Thimble strengths and dimensions can be obtained from a thimble supplier.

When in doubt about installations, hardware, or applications, contact your PLP representative.

PLP suggests guy tensions be maintained at a minimum of approximately 10% of the Strand's Rated Breaking Strength (RBS).

TABLE 1 - BIG-GRIP DEAD-END HARDWARE ACCESSORIES DIMENSIONS
(All Dimensions in Inches)

DEAD-END DIAMETER RANGE	NOMINAL STRAND SIZES	Fig. 1 & 2 SEAT DIMENSIONS		Fig. 2 MINIMUM GROOVE DIAMETER	Fig. 3 MINIMUM HARDWARE HOLE DIAMETER*	HEAVY DUTY THIMBLE SIZE	Fig. 4& 5 PIN DIAMETERS		DOUBLE EXTRA STRONG WEIGHT PIPE Fig. 6		
		MIN.	MAX.				MIN.	MAX.	NOMINAL SIZE	O.D.	I.D.
.475-.515	1/2	1-3/8	2-3/8	9/16	3/4	5/8	1	1-5/8	1-1/4	1.66	.896
.516-.570	9/16	1-1/2	2-5/8	5/8	15/16	5/8	1-1/8	1-5/8	1-1/4	1.66	.896
.571-.635	5/8	2	2-5/8	3/4	1	3/4	1-1/2	1-7/8	1-1/4	1.66	.896
.636-.772	3/4	2-1/2	3-1/8	7/8	1-3/16	7/8	1-7/8	2-1/8	1-1/2	1.9	1.1
.773-.868		2-1/2	3-5/8	1	1-3/8	1	2	2-3/8	2	2.375	1.503
.869-1.024	7/8 1	3	4-1/8	1	1-3/8	1-1/8 - 1-1/4	2-3/8	2-3/4	2	2.375	1.503
1.025-1.27		3-1/2	5-1/8	1-3/8	1-3/4	1-1/4 - 1-3/8	2-3/4	3-1/4	2-1/2	2.875	1.771
1.30		4	5-1/8	1-3/8	1-15/16	1-3/8 - 1-1/2	2-7/8	3-3/8	2-1/2	2.875	1.771

Figure 1

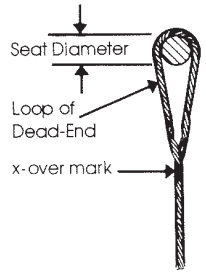


Figure 2

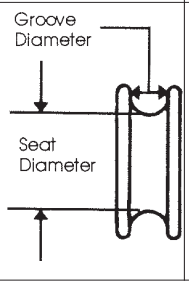


Figure 3

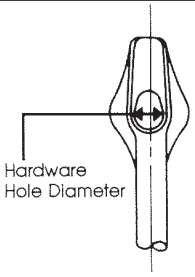


Figure 4

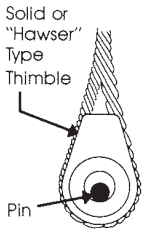


Figure 5

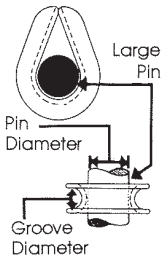
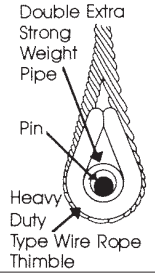


Figure 6



* Depending on geometric shape of the hole, the legs of Big-Grip dead-ends may insert inot hole diameter less than specified.

Big-Grip Dead-end: Galvanized Strand

For use on:
Extra High Strength
Siemens Martin
High Strength
Utilities Grade



CATALOG NUMBER	SIZE (INCHES)	STRAND CONSTRUCTION	STRAND ACTUAL DIAMETER (INCHES)	BG PER CARTON UNITS	BG PER CARTON WT./LBS.	APPROX. LENGTH (INCHES)	COLOR CODE	RATED HOLDING STRENGTH (LBS.)	(PERCENT OF STRAND'S RATED BREAKING STRENGTH)
BG-2115	1/2	7W or 19W	.459 or .500	20	63	49	Blue	26,900	(100%)
BG-2116	9/16	7W or 19W	.564 or .565	10	48	55	Yellow	35,000	(100%)
BG-2111	5/8	7W or 19W	.621 or .625	10	65	64	Black	7W 42,400 19W 40,200	(100%) (100%)
BG-2112	3/4	19W	.750	5	54	76	Orange	58,300	(100%)
BG-MS-7023	7/8	19W	.885	5	76	90	Green	79,70	(100%)
BG-MS-7047	1	19W or 37W	1.000 or 1.001	3	76	125	Blue	19W 104,500 37W 92,430	(100%) (90%) +

Left-hand lay standard
+ Down-Rated for 37 stranding (1994)

EXPLANATORY NOTES:

(1) For strand sizes smaller than 1/2", refer to the GUY-GRIP® dead-end.
(2) Reference table earlier in this section for acceptable fitting dimensions.
(3) Cabled loop design is furnished as standard for all sizes.
(4) Rated Holding Strengths (RHS) of the Big-Grip dead-ends are listed for each strand and are expressed as a percent of the strand's Rated Breaking Strength (RBS).
(5) C-Coat galvanized steel is standard for the Big-Grip dead-ends used on 1/2", 9/16", and 5/8" strand.
(6) B-Coat galvanized steel is used for the Big-Grip dead-ends used on 3/4" strand. However, use of this material is subject to availability and other materials such as aluminum-covered steel may be substituted. Before ordering, consult Preformed™ as to material availability.
(7) Big-Grip dead-ends for 7/8" and 1" strand are made from aluminum-covered steel material. Galvanized steel material is not available. Before using, check to make sure that atmospheric conditions in the area they are to be used will not create a problem caused by two dissimilar metals.
(8) Consult PLP for sizes and stranding not shown.

Big-Grip Dead-end

For use on:
Aluminum Clad Steel Strand

CATALOG NUMBER	STRAND DIAMETER RANGE (INCHES)		NOMINAL STRAND SIZE	BG PER CARTON		APPROX. LENGTH (INCHES)	COLOR CODE	RATED HOLDING STRENGTH (LBS.)	(PERCENT OF STRAND'S RATED BREAKING STRENGTH)
	MIN.	MAX.		UNITS	WT./LBS.				
BG-4168	.475	.494	7 # 6	25	60	42	Blue	22,730	(100%)
BG-4169	.495	.515	19 # 10	25	62	44	Green	27,190	(100%)
BG-4170	.516	.536	25M	20	66	47	Red	25,000	(100%)
BG-4171	.537	.555	7 # 5	20	67	48	Yellow	27,030	(100%)
BG-4172	.556	.570	-	15	68	49	Blue	33,330	
BG-4173	.571	.591	19 # 9	20	68	50	Orange	34,290	(100%)
BG-4174	.592	.612	-	15	50	50	Green	34,450	
BG-4175	.613	.635	-	10	49	54	Yellow	45,000	
BG-4176	.636	.661	19 # 8	10	50	56	Black	43,240	(100%)
BG-4177	.662	.686	19x.1363"	10	66	59	Blue	47,400	(100%)
BG-4178	.687	.712	-	10	68	61	Red	54,200	
BG-4179	.713	.741	19 # 7 37 # 10	10	70	63	Black	51,730 50,300	(100%) (95%)+
BG-4180	.742	.772	19x.1499"	5	41	71	Yellow	54,300	(100%)
THE FOLLOWING PRODUCTS ARE FOR THE SPECIFIC CABLES LISTED.									
	Actual Diameters								
BG-4181	.792		19x.1584	5	50	80	Blue	59,000	
BG-4183	.801, .810, .827		37 # 9 19 # 6 19x.1660"	5	69	84	Green	63,430 61,700 63,000	(95%)+ (100%) (100%)
BG-4185	.849, .850, .866		37x.121" 19x.170" 19x.173" 37x.123"	5	68	87	Black	71,250 66,000 68,500 74,100	(95%)+ (100%) (100%) (95%)+
BG-4186	.899		37 # 8	5	76	91	Yellow	80,000	(95%)+
BG-4187	.910, .934		19 # 5 19x.1868"	5	78	93	Blue	73,350 75,000	(100%) (100%)
BG-4188	.981		37x.1404"	4	52	95	Red	90,250	(95%)+
BG-4189	1.01		37 # 7	4	85	108	Green	90,600	(90%)+
BG-4190	1.10		37x.1571"	3	84	117	Black	101,700	(90%)+
BG-4191	1.134		37 # 6	3	86	120	Yellow	108,200	(90%)+
BG-4192	1.27		37 # 5	2	82	151	Red	127,000	(89%)

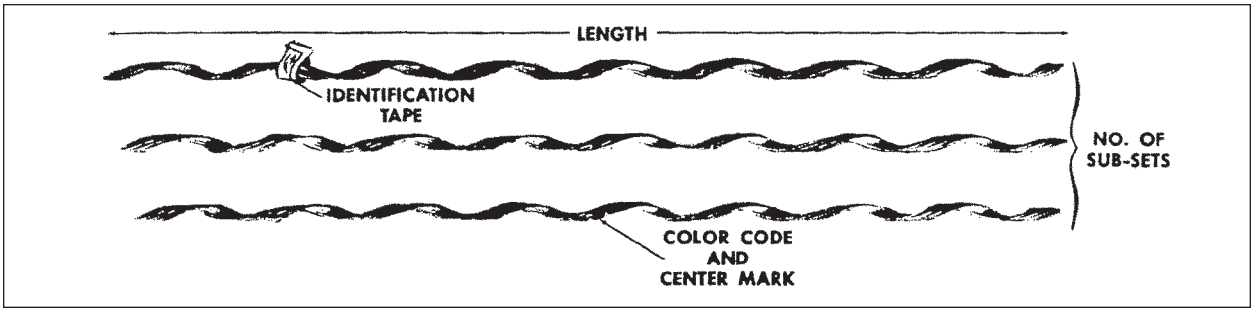
Left-hand lay standard
+ Down-Rated for 37 stranding (1994)

EXPLANATORY NOTES:

(1) For strand sizes smaller than 7#6, refer to the GUY-GRIP® dead-end.
(2) "Nominal Strand Size" indicates the strand which fits within the "Strand Diameter Range".
(3) Reference table earlier in this section for acceptable fitting dimensions.
(4) Cabled loop design is furnished as standard for all sizes.
(5) Rated Holding Strengths (RHS) of the Big-Grip dead-ends are listed for each strand and are expressed as a percent of the strand's Rated Breaking Strength (RBS).
(6) Consult PLP for sizes and stranding not shown.

Strand Splice

NOMENCLATURE



Sub-Sets: Individual rods assembled and gritted into groups. The number of sub-sets per splice corresponds to the tabular information appearing on the catalog pages.

Center Mark: Establishes recommended alignment of strand size, corresponding to tabular information appearing on catalog page.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

Strand Splices are intended for use on guys or messengers.

Strand splices were not designed nor tested for use on overhead shield wires and are not intended for that application.

JOINING: These splices have a rated holding strength which is equivalent to the rated breaking strength of the strand.

RESTORATIVE-REPAIR: When the *Strand Splice* is centered over the point of damage, the full rated breaking strength of the strand will be restored.

Consult the Factory when the damage is located beyond the center of the immediate support area.

RATED HOLDING STRENGTH: Published for individual sizes on the catalog pages. In arriving at "Rated Hold Strength," actual results of tests on unweathered strand are studied, and consideration is given to dimensional tolerances for the sizes encompassed.

APPLICATION-INSPECTION: *Strand Splices* should not be reused after original application. Lay direction of both the splice and the strand should be the same. Most strand is left-hand lay.

On lashed messenger, Strand Splices permit the spinner to travel over the splice without the need of lifting or adjusting the gates.

Alignment of the ends of the rods should be maintained within 1/2 pitch length.

MATERIAL SELECTION: *Strand Splices* are made of the same basic material as the strand to which they are applied. This pertains to galvanized, Copperweld, Aluminum-clad, stainless Type 302, and stainless Type 316. Any of these materials can be selected from the catalog tables. The recommended types of strand are also indicated.

SAFETY CONSIDERATIONS

1. This product is intended for a single (one-time) use and for the specified application. CAUTION: DO NOT REUSE OR MODIFY THIS PRODUCT UNDER ANY CIRCUMSTANCES.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ Strand Splices before application.
5. PREFORMED Strand Splices are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

Strand Splice: Galvanized Steel

For use on:
Extra High Strength, High Strength,
Siemens Martin, Utilities Grade

CATALOG NUMBER	STRAND SIZE (INCHES)	STRAND CONSTRUCTION	STRAND MEAN DIAMETER (INCHES)	UNITS PER CARTON	WT/LBS. PER CARTON	LENGTH (INCHES)	NO. OF SUBSETS	ROD DIAMETER (INCHES)	COLOR CODE
GLS-2102	3/16	7W 7W	.195 .186	100	30	27	2	.070	Red
GLS-2103	7/32	7W	.216	100	36	29	2	.070	Green
GLS-2104	1/4	3W 7W	.259 .240	50	34	35	2	.086	Yellow
GLS-2105	9/32	7W	.279	50	36	38	2	.086	Blue
GLS-2106	5/16	3W 7W	.312 .327	50	46	42	3	.086	Black
GLS-2107	3/8	3W 7W	.356 .360	25	38	50	3	.100	Orange
GLS-2108	7/16	7W	.435	25	58	56	3	.119	Green
GLS-2109	1/2	7W 19W	.495 .500	10	36	63	3	.138	Blue
GLS-2110	9/16	7W 19W	.564 .565	10	52	70	4	.159	Yellow

Left-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations for explanation of "Rated Holding Strength."
(2) Rated Holding Strengths are 100% of the published ratingss for the strand.
(3) Consult PLP for availability and sizes not shown.

Strand Splice: Bezinal®

For use on:
Bezinal Strand

CATALOG NUMBER	STRAND			PER CARTON		LENGTH (inches)	NUMBER OF SUBSETS	ROD DIAMETER (inches)	COLOR CODE
	SIZE (inches)	CONSTRUCTION	MEAN DIAMETER (inches)	UNITS	WEIGHT (lbs)				
BLS-9102	3/16	7W	.186	100	30	27	2	.070	RED
BLS-9104	1/4	3W 7W	.240	50	34	35	2	.086	YELLOW
BLS-9106	5/16	3W 7W	.312	50	46	42	3	.086	BLACK
BLS-9107	3/8	3W 7W	.360	25	38	50	3	.100	ORANGE
BLS-9108	7/16	7W	.435	25	57	56	3	.119	GREEN
BLS-9109	1/2	7W 19W	.495	10	34	63	3	.138	BLUE

Left-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations for explanation of "Rated Holding Strength".
(2) Rating holding strength is 100% of the published rating for the strand.
(3) Consult PLP for sizes and stranding not shown.
(4) Bezinal is a registered trademark of the Bekaert Corporation.

Strand Splice

For use on:
Aluminum Clad Steel

CATALOG NUMBER	STRAND		UNITS PER CARTON	WT./LBS. PER CARTON	LENGTH (INCHES)	NO. OF SUBSETS	ROD DIAMETER (INCHES)	COLOR CODE
	CONSTRUCTION	MEAN DIAMETER (INCHES)						
AWLS-4102	3#12	.174	50	12	19	2	.081	Orange
AWLS-4108	4M 3#10	.220 .220	50	22	24	2	.102	Green
AWLS-4110	3#9 6M 1/4"	.247 .242 .242	50	24	25	2	.102	Yellow
AWLS-4113	3#8 9/32" 8M	.277 .272 .272	50	30	28	3	.102	Blue
AWLS-4116	3#7 10M 5/16"-7#10	.311 .306 .306	50	34	30	3	.102	Black
AWLS-4119	3#6 12.5M 11/32"-7#9	.349 .343 .343	50	46	33	3	.114	Yellow
AWLS-4120	14M	.363	25	32	36	3	.128	Blue
AWLS-4122	3#5 3/8"-7#8 16M	.392 .385 .386	25	34	38	3	.128	Orange
AWLS-4124	18M	.417	25	45	41	3	.144	Black
AWLS-4125	7/16"-7#7	.433	25	55	50	3	.144	Green
AWLS-4126	20M	.444	10	30	53	3	.162	Yellow

Left-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations for material selection.
(2) Rated holding strengths are 100% of the published rating of the strand
(3) Consult PLP for availability and sizes not shown.

Strand Splice: Copperweld

For use on:
Copperweld Strand

CATALOG NUMBER	STRAND SIZE	STRAND MEAN DIAMETER (INCHES)	UNITS PER CARTON	WT.LBS. PER CARTON	LENGTH (INCHES)	NO. OF SUBSETS	ROD DIAMETER (INCHES)	COLOR CODE
CLS-8100	2.2M	.164	50	12	18	2	.081	Orange
CLS-8102	3#12	.174	50	14	19	2	.081	Red
CLS-8106	4M	.209	50	20	22	2	.091	White
CLS-3101	3#10	.220	50	28	24	2	.102	Green
CLS-3103	3#9 6M	.247 .237	50	28	25	2	.102	Yellow
CLS-3104	6M3	.258	50	32	26	3	.102	White
CLS-3106	8M 3#8	.276 .277	50	36	28	3	.102	Blue
CLS-3109	10M 7#10, 5/16" 3#7	.303 .306 .311	50	40	30	3	.102	Red
CLS-3112	7#9, 11/32" 12.5M 3#6	.343 .345 .349	50	58	33	3	.114	Green
CLS-3113	14M	.360	25	38	36	3	.128	Blue
CLS-3115	7#8, 3/8" 16M 3#5	.385 .386 .392	25	40	38	3	.128	White
CLS-3117	18M	.414	25	56	41	3	.144	Orange
CLS-3118	20M 7#7, 7/16"	.438 .433	10	28	50	3	.144	Yellow
CLS-3121	7#6, 1/2"	.486	10	38	55	3	.162	Blue
CLS-3123	25M	.525	10	52	61	3	.182	Green
CLS-3124	7#5, 9/16"	.546	10	54	63	3	.182	Yellow

Left-hand lay standard

EXPLANATORY NOTES:

(1) Refer to General Recommendations for material selection.
(2) Rated holding strengths are 100% of the published rating of the strand
(3) Consult PLP for availability and sizes not shown.

Strand Splice: Stainless Steel

For use on:
Type 302, 430 or 316 Stainless Steel Strand.

CATALOG NUMBER	STRAND SIZE (INCHES)	STRAND MEAN DIAMETER (INCHES)	UNITS PER CARTON	WT./LBS. PER CARTON	ROD DIAMETER (INCHES)	COLOR CODE
For Use On: Type 302 and 430 Strand						
SLS-5101	7/32,-3W -7W	.224 .216	50	24	.071	Blue
SLS-5102	1/4,-3W -7W	.259 .249	50	36	.085	Yellow
SLS-5103	9/32,-7W	.279	50	40	.085	Black
SLS-5104	5/16,-7W	.312	50	34	.101	Orange
SLS-5105	3/8,-3W 7W	.356 .360	25	50	.120	Green
For Use On : Type 430 Strand						
SLS-5106	7/16,-7W	.435	10	38	.139	Red
SLS-5107	1/2,-7W	.495	10	58	.161	Blue
For Use: Type 316 Strand						
SLS-6101	7/32,-3W 7W	.224 .216	50	24	.071	Blue
SLS-6102	1/4,-3W -7W	.259 .249	50	36	.085	Yellow
SLS-6103	9/32,-7W	.279	50	40	.085	Black
SLS-6104	5/16,7W	.312	50	64	.101	Orange
SLS-6105	3/8,-3W -7W	.356 .360	25	50	.120	Green

Left-hand lay standard

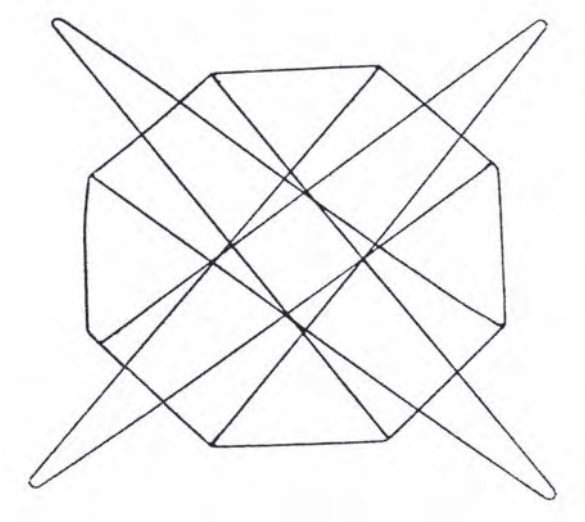
EXPLANATORY NOTES:

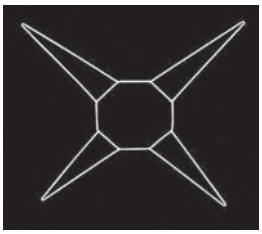
(1) Refer to General Recommendations for material selection.
(2) Rated holding strengths are 100% of the published rating of the strand
(3) Consult PLP® for availability and sizes not shown.

Safety Guy Wire Dispenser

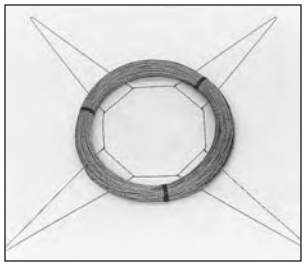
Standard Size: For use on wire coils with girths up to 63", such as a 500' coil of 7/16" strand.
Jumbo Size: For use on wire coils with girths up to 75", such as a 500' coil of 1/2" strand.

NOMENCLATURE

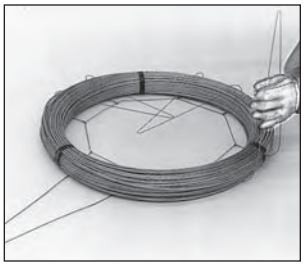




This is the Safety Guy-Wire Dispenser folded for shipment. Inset shows dispenser, with all four legs unfolded, ready to receive coil of strand.



1. Fold out the legs.



2. Bend the legs over the coil.



3. Twist at least two inches of the legs together until the wire cage is tight.



4. Turn the wire cage over and pay-out from the open side. Tuck the end back into the cage.

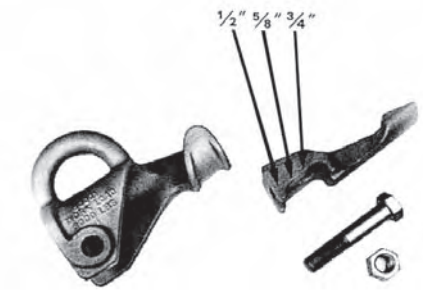
Catalog Number	Standard Carton Quantity	Typical Size Coils Accommodated	Leg Length (mm)	Wire Size
SGD-0700 (Standard Size)	50	500' 7/16" 250' 1/2" Strand 23" by 9" Triplex Coils	24" (610)	14 gauge
SGD-0701 (Jumbo Size)	25	500' 1/2" Strand	30" (762)	12 guage

EXPLANATORY NOTES:

(1) Accommodates any size coil, provided about two inches of the end of each leg can be twisted.
(2) The size coil each unit can encompass depends upon the coil's girth, which is the combined diameter and width x 2. The Standard Unit will accommodate a girth up to 63". The Jumbo Unit will accommodate a girth up to 75".
(3) The Standard Unit is designed to withstand 15 ft. free-fall impact of a 200 lb. coil; the Jumbo Unit will withstand a free-fall impact of a 300 lb. coil.

Pulling Eye

The PREFORMED™ Pulling Eye is designed to facilitate safe, fast installation of GUY-GRIP® dead-ends at the anchor rod. Constructed of corrosion-resistant nodular iron, this reusable tool has a large eye which is offset to position the hook of the chain hoist safely to one side, and permit easy, uncrowded application of the dead-end. The PREFORMED Pulling Eye is adjustable for rod size, and is engineered to withstand a 3,000 lb. working load. An orange vinyl coating provides weather and handling protection and ready identification.



1. Component Parts: The keeper is to be used with 1/2", 5/8", and 3/4" anchor rods (see arrows). For 1" and 1-1/4" anchor rods, the PREFORMED Pulling Eye is used without the keeper.

CAUTION: The Pulling Eye *must be secured* with the nut and bolt on every installation.

(Note: The bolt is made of specially heat-treated extra-high-strength steel, and is identified by the industry mark on its head. *Any replacement should be of the same quality.*)



2. PREFORMED Pulling Eye is position on 3/4" anchor rod. Note that the keeper (see arrow) is used.



3. PREFORMED Pulling Eye in position on 1-1/4" anchor rod. Note that the keeper is not used.

SAFETY CONSIDERATIONS

1. This product is intended for a specified application. CAUTION: DO NOT USE THIS PRODUCT BEYOND ITS WORKING LOAD LIMITS. DO NOT MODIFY THIS PRODUCT IN ANY WAY OTHER THAN SHOWN.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED Pulling Eye before application.
5. PREFORMED Pulling Eyes are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

CATALOG NUMBER	DESCRIPTION	STD. CTN.
PE-0300	Pulling Eye	4 Units

REPLACEMENT PARTS

CATALOG NUMBER	DESCRIPTION	STD. CTN.
PE-A-0002	Pulling Eye: Keeper	As Required
PE-B-2019	Pulling Eye: Bolt	As Required
PE-C-0607	Pulling Eye: Nut	As Required

Note: 3,000 lb. working load is based on a 5 to 1 safety factor.

PREFORMED LINE PRODUCTS

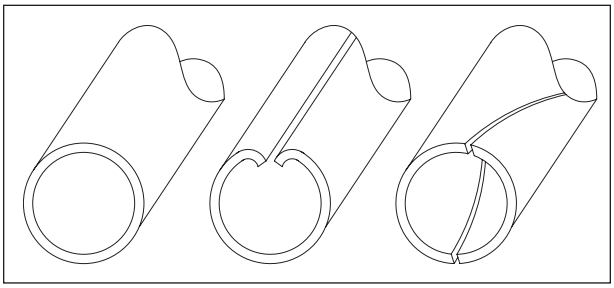
Section 17 – Distribution (Overhead): Protective Guards & Markers

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Guy Markers

PREFORMED™ Guy Markers are used for identifying Down Guys or other wire and cable installations where anchoring devices are exposed to pedestrian and/or vehicular traffic.



Profile Options

PREFORMED™ Guy Markers are available in three basic profiles:

- Full Round – 1-1/2" and 1-1/4" OD (Outer Diameter)
- "B" Profile "heart shape" – 1-1/2" effective OD
- Two Piece Spiral Round – 1-1/2" OD, helically slit to create two halves

Material

Guy Markers are available in PVC and Polyethylene materials as shown in tables. All materials employ UV inhibitors to enhance life span performance.

Color

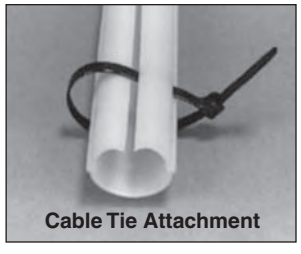
Guy Markers are available in yellow, gray, and orange. For other available colors and combinations of colors consult PLP for availability.

Reflective tape is available as an option. If desired configuration is not shown in catalog tables. Contact PLP for availability.

Attachment Devices

PREFORMED™ Guy Markers utilize four basic attachment devices. These are:

- Cable Tie
- LOOP-LOCK® Pin
- Integral Helical Pigtail (used in conjuction with Short Lock Strap)
- Mounted Cable Tie
- Plastic Clamp (see next page)

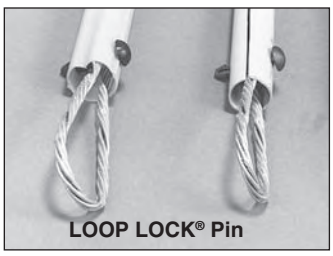

Cable Tie Attachment

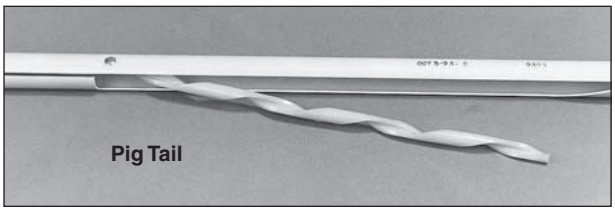
CableTie:

Supplied as an alternate to the LOOP-LOCK Pin. Helps deter vandalism.

LOOP-LOCK® Pin:

A unique, one-way method that applies through the marker's tube and loop of a GUY-GRIP® dead-end. Once applied, the tube is "locked" onto the dead-end and cannot be removed easily by vandals. Removal and reinstallation of the marker by authorized personnel is possible with a new pin, which can be supplied separately.


LOOP LOCK® Pin


Pig Tail

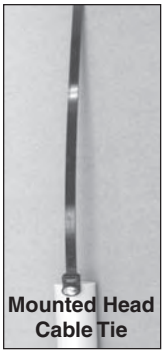
Integral Pigtail:

Attached to the inside of the marker tube and wraps on to secure it to the strand. Generally fits a strand range of 3/16" – 1/2" diameters and provides a unique one-way slip down motion for ease of installation. The installed pigtail resists upward movement. The pigtail is made from specially formulated plastic designed to provide high strength, tear resistance, and no corrosion.

Lock Strap and Mounted Cable Tie:

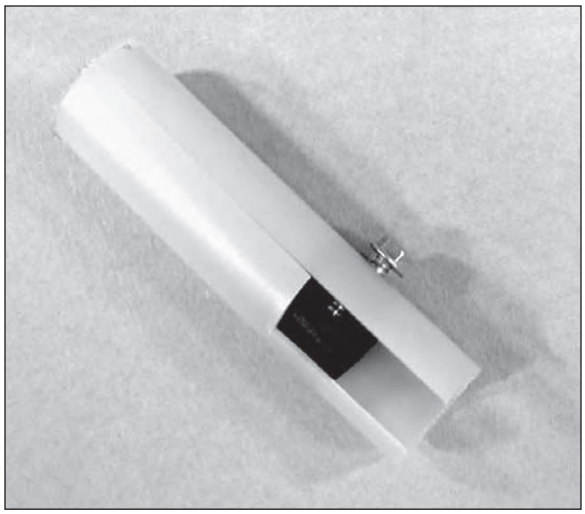
The short lock strap is primarily used with the pigtail device and helps deter vandalism. The long lock strap is used on dead-end devices that restrict the use of the LOOP-LOCK® Pin.


Short Lock Strap


Mounted Head Cable Tie

Guy Markers

Attachment Devices Continued



Note: Photo shows marker cut away to show clamp

Plastic Clamp:
An addition to PLP's traditional attachment devices the innovative plastic clamp is completely internal to the marker tube. The clamp is held in place and tightened by the same bolt which is roughly 32" from the top of the Guy Marker. The Clamp provides a positive locking attachment to the strand, without strand damage making it difficult for vandals to remove.

Currently supplied on the PG-5800 and PG-5810.

For alternate attachment devices on any profile, availability of different tube sizes, or tube lengths other than eight (8) feet, contact Preformed Line Products.



Two Piece Spiral Round Markers:
Designed to provide increased visibility for many guying or cable applications. Can provide coverage from the ground line, around fittings and above normal reach depending upon installation.

The addition of a third Helical section can provide up to 360° coverage for diameters over 1". This method may require special application techniques as outlined in the application procedure.

Limited coverage is possible for diameters over 1-5/8" or over large, non-circular fittings. Consult the application procedure for special techniques.

Catalog Number	Length		Color	Material	Tube OD		Attachment Type	Carton Information	
	Feet	Meters			Inches	(mm)		Units	WT./LBS.
PG-5750	8	2.4	Orange/ Yellow	Poly	1-1/4	32	2-CT	25	30
PG-5752	8	2.4	Orange	Poly	1-1/4	32	2-CT	25	30

Guy Markers

Standard Guy Markers



Attachment Devices

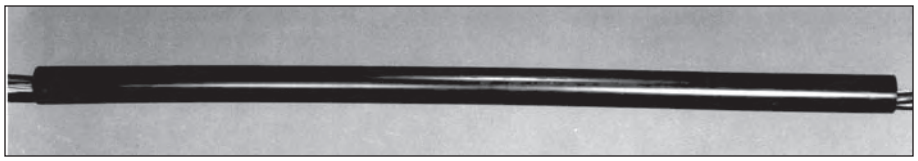
PT	**Helical Pigtail**
SLS	**Short Lock Strap** - used in conjunction with the Helical Pigtail
MCT	**Mounted Cable Tie**
LLP	**LOOP-LOCK™ Pin**
CT	**Cable Tie**
CMP	**Plastic Clamp**

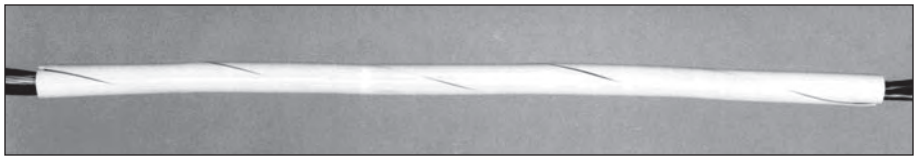
Catalog Number	Length (m)	Color	Material	Tube Profile	Tube OD (mm)	Attachment Type	Carton Information	
							Units	WT./LBS
PG-5414	8' (2.4)	Yellow	Poly	Round	1-1/4" (32)	LLP	25	32
PG-5411	8' (2.4)	Gray	Poly	Round	1-1/4" (32)	LLP	25	32
PG-MS-4988	8' (2.4)	Yellow	Poly	Round	1-1/4" (32)	None	25	32
PG-MS-3830	8' (2.4)	Orange	Poly	Round	1-1/4" (32)	None	25	32
PG-MS-9838	8' (2.4)	Yellow	Poly	Round	1-1/4" (32)	MCT	25	32
PG-5800	8' (2.4)	Yellow	Poly	Round	1-1/2" (38)	CMP	25	34
PG-5810	8' (2.4)	Orange	Poly	Round	1-1/2" (38)	CMP	25	34
PG-5718	8' (2.4)	Yellow	Poly	Round	1-1/2" (38)	PT/SLS	25	39
PG-5718-P	8' (2.4)	Yellow	Poly	"B"	1-1/2" (38)	PT/CT	25	35
PG-5518	8' (2.4)	Yellow	PVC	Round	1-1/2" (38)	PT/SLS	25	33
PG-MS-3921	8' (2.4)	Yellow	Poly	Round	1-1/2" (38)	MCT	25	33
PG-MS-4072	8' (2.4)	Yellow	Poly	"B"	1-1/2" (38)	MCT	25	35
PG-5405	8' (2.4)	Yellow	Poly	Round	1-1/2" (38)	LLP	25	36
PG-5423	8' (2.4)	Yellow	Poly	"B"	1-1/2" (38)	LLP	25	36
PG-5462	8' (2.4)	Yellow	Poly	"B"	1-1/2" (38)	2 LLP	25	33
RPG-5618	8' (2.4)	Yellow/Reflective Tape	PVC	Round	1-1/2" (38)	PT/SLS	25	33
RPG-MS-10469	8' (2.4)	Yellow/Reflective Tape	Poly	"B"	1-1/2" (38)	LLP	25	36
PG-5738	8' (2.4)	Orange	Poly	Round	1-1/2" (38)	PT/SLS	25	34
PG-5708	8' (2.4)	Gray	Poly	Round	1-1/2" (38)	PT/SLS	25	34
PG-5708-P	8' (2.4)	Gray	Poly	"B"	1-1/2" (38)	PT/CT	25	36
PG-MS-7578	8' (2.4)	Yellow	Poly	Round	2" (51)	PT/SLS	25	49

Note: For different lengths, attachments, and/or the addition of reflective tape, contact your PLP representative or Preformed Line Products.

Tree Guard

NOMENCLATURE





Length: Standard lengths are shown in separate tables on the catalog pages.
Wall Thickness: Provides a barrier, preventing physical contact with the conductor or its covering.
Color: PVC = Light Gray
Polyethylene = Black

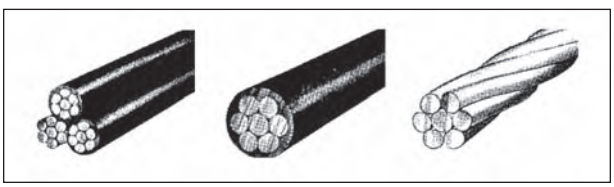
GENERAL RECOMMENDATIONS

PROTECTION. Tree Guards are designed to protect bare conductors and fabric or plastic covered cables against mechanical abrasion caused by tree limbs or other obstructions.

MATERIAL. Tree Guards are manufactured from a high-impact polyvinyl chloride or polyethylene selected because of these materials resistance to extreme abrasion and strong weathering endurance. Although the plastics have high dielectric properties, Tree Guards are not designed for insulation purposes.

LENGTHS. PVC Tree Guards come in 3 ft. and 6 ft. lengths and Polyethylene Tree Guards come in 8 inch and 6 ft. lengths. Tree Guards can be butted together with other Tree guards of like materials to achieve a combination of lengths.

SIZE SELECTION. Tree Guard size is determined by the effective diameter of single or grouped conductors. To select the proper size for two or more conductors, arrange the cables to provide a bundle with the smallest possible diameter. The diameter of this bundle, when located within a range on the catalog page, will provide the proper size Tree Guard.



SAFETY CONSIDERATIONS

1. This product may be reused if in good condition.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED™ Tree Guards before application.
5. PREFORMED™ Tree Guards are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

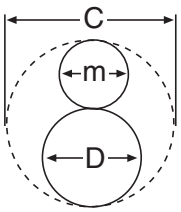
Tree Guard

GENERAL RECOMMENDATIONS

Size Selection: In selecting the proper size PVC Tree Guard it is necessary to determine the smallest circumscribing circle that will enclose the messenger and cables.

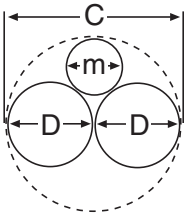
For grouping only one cable with messenger, add the diameters and multiply by a factor of .850.

C = (D + m) x .850



For grouping two equal diameter cables, multiply the diameter of one cable times 2.00. Then find the diameter of the maximum messenger that will fit in the interstices of the cables, multiply the diameter of one cable times .666.

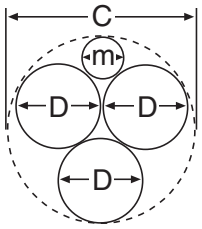
C = D x 2.00



m = D x .666

For grouping three equal diameter cables, multiply the diameter of one cable times 2.155. Then to find the diameter of the maximum messenger that will fit in the interstices of the cables multiply the diameter of one cable times .483.

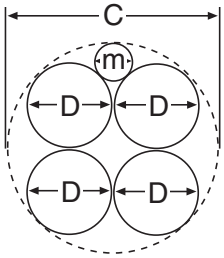
C = D x 2.155



m = D x .483

For grouping four equal diameter cables; multiply the diameter of one cable times 2.414. Then to find the diameter of the maximum messenger that will fit in the interstices of the cables multiply the diameter of one cable times .414.

C = D x 2.414

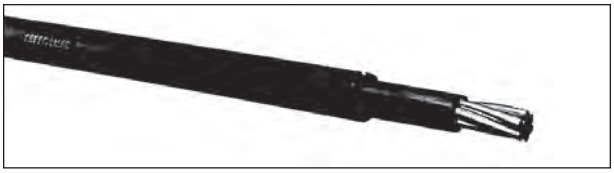


m = D x .414

For grouping unequal diameter cables or messengers too large to fit into the interstices above, the minimum diameter grouping can best be determined by a graphic layout scale.

Tree Guard

6 Ft. Length – PVC



For use on:
All Cables and Conductors

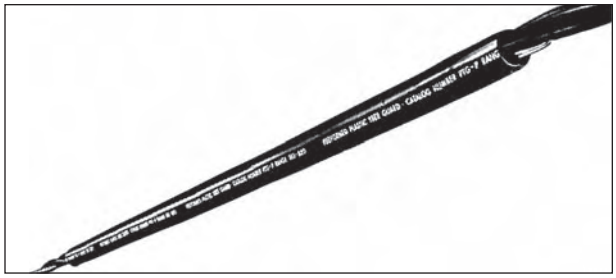
CATALOG NUMBER	DIAMETER RANGE (INCHES)		UNITS	WEIGHT (LBS.)	LENGTH (FEET)	WALL THICKNESS (INCHES)
	MIN.	MAX.	PER CARTON			
PTG-0101	.238	.266	100	24	6	1/16
PTG-0104	.267	.296	100	26	6	1/16
PTG-0107	.297	.328	100	28	6	1/16
PTG-0110	.329	.358	100	30	6	1/16
PTG-0113	.359	.389	100	32	6	1/16
PTG-0116	.390	.421	100	34	6	1/16
PTG-0119	.422	.453	100	36	6	1/16
PTG-0122	.454	.478	75	30	6	1/16
PTG-0125	.479	.511	75	32	6	1/16
PTG-0128	.512	.542	75	32	6	1/16
PTG-0131	.543	.568	75	44	6	5/64
PGT-0134	.569	.598	75	46	6	5/64
PTG-0137	.599	.641	75	48	6	5/64
PTG-0140	.642	.706	75	52	6	5/64
PTG-0143	.707	.762	50	46	6	3/32
PTG-0146	.763	.820	50	48	6	3/32
PTG-0149	.821	.882	50	52	6	3/32
PTG-0152	.883	.947	50	56	6	3/32
PTG-0155	.948	1.010	50	58	6	3/32
PTG-0158	1.011	1.074	50	62	6	3/32
PTG-0161	1.075	1.131	25	66	6	3/32
PTG-0164	1.132	1.194	25	36	6	3/32
PTG-0167	1.195	1.255	25	36	6	3/32
PTG-0170	1.256	1.328	25	38	6	3/32
PTG-0173	1.329	1.450	25	42	6	3/32
PTG-0176	1.451	1.578	25	46	6	3/32
PTG-0179	1.579	1.705	10	48	6	3/32
PTG-0182	1.706	1.832	10	50	6	3/32

EXPLANATORY NOTES:

(1) Nominal Size indicates one of various single or grouped conductors within each range. To select the proper size for two or more conductors not shown, refer to "General Recommendations", first page in this section.

Tree Guard

3 Ft. Length – PVC



For use on:
All Cables and Conductors

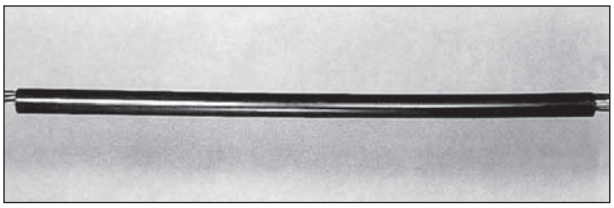
CATALOG NUMBER	DIAMETER RANGE (INCHES)		UNITS	WEIGHT (LBS.)	LENGTH (FEET)	WALL THICKNESS (INCHES)
	MIN.	MAX.	PER CARTON			
PTG-0100	.238	.266	100	12	3	1/16
PTG-0103	.267	.296	100	14	3	1/16
PTG-0106	.297	.328	100	15	3	1/16
PTG-0109	.329	.358	100	16	3	1/16
PTG-0112	.359	.389	100	18	3	1/16
PTG-0115	.390	.421	100	18	3	1/16
PTG-0118	.422	.453	100	20	3	1/16
PTG-0121	.454	.478	100	20	3	1/16
PTG-0124	.479	.511	100	22	3	1/16
PTG-0127	.512	.542	100	24	3	1/16
PTG-0130	.543	.568	100	30	3	5/64
PTG-0133	.569	.598	100	30	3	5/64
PTG-0136	.599	.641	100	32	3	5/64
PTG-0139	.642	.706	100	34	3	5/64
PTG-0142	.707	.762	100	46	3	3/32
PTG-0145	.763	.820	100	50	3	3/32
PTG-0148	.821	.882	100	52	3	3/32
PTG-0151	.883	.947	100	56	3	3/32
PTG-0154	.948	1.010	100	58	3	3/32

EXPLANATORY NOTES:

(1) Nominal Size indicates one of various single or grouped conductors within each range. To select the proper size for two or more conductors not shown, refer to "General Recommendations", first page in this section.

Tree Guard – Polyethylene

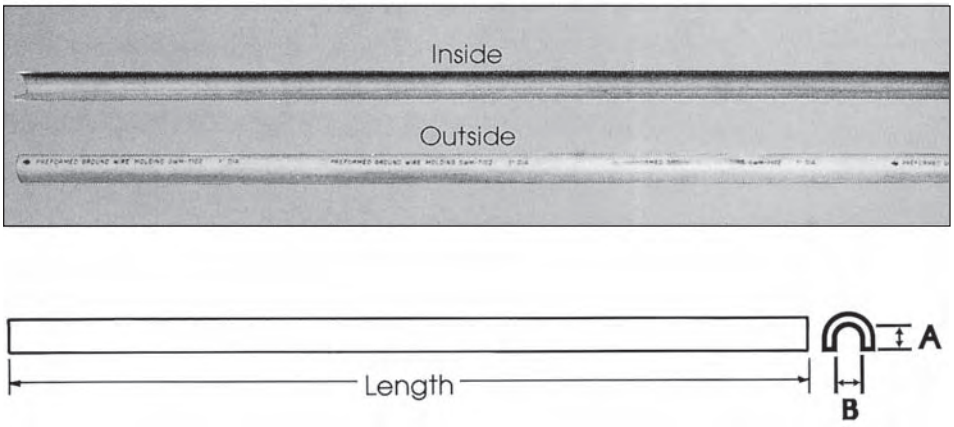
For use on:
All Cables and Conductors



INSIDE DIAMETER (INCHES)	CATALOG NUMBER	DIAMETER RANGE (INCHES)		LENGTH	UNITS	WT./LBS.
		MIN.	MAX.		PER CARTON	
.5	PTG-0200	.238	.500	8 in.	1,000	35
	PTG-0201	.238	.500	6 ft.	150	46
1	PTG-0202	.501	1.00	8 in.	500	34
	PTG-0203	.501	1.00	6 ft.	60	39
1.5	PTG-0204	1.01	1.50	8 in.	250	30
	PTG-0205	1.01	1.50	6 ft.	25	25
2	PTG-0206	1.51	2.00	8 in.	175	25
	PTG-0207	1.51	2.00	6 ft.	20	26
3	PTG-0208	2.01	3.00	6 ft.	12	25

Ground Wire Molding

NOMENCLATURE





Available in three nominal widths: 1/2", 3/4" & 1"

GENERAL INFORMATION

Intended Use: PREFORMED LINE PRODUCTS Ground Wire Molding protects and covers surface-mounted cable, wire, or conductor.

Color: Soft gray coloring provides a natural blend for industrial and urban situations.

Material: Corrosion resistant, lightweight polyethylene provides retention of good physical characteristics over temperature ranges and exposure to ultraviolet radiation. It will provide many years of protection and is easily handled and stored.

INSTALLATION GUIDELINES

Standard lineman's tools (hammer & staples) are all that is required for quick and easy application.

When installing the staple, drive the staple in until it comes in contact with the exterior of the Ground Wire Molding. If the staple is driven in too far, the Ground Wire Molding will be deformed and can pull away from the pole.

When in doubt about particular application, consult your PREFORMED™ Sales Representative or Preformed Line Products.

SAFETY CONSIDERATIONS

1. This product may be reused, if in good condition.
2. This product is intended for use by trained craftspeople only. This product SHOULD NOT BE USED by anyone who is not familiar with and trained in the use of it.
3. When working in the area of energized lines with this product, EXTRA CARE should be taken to prevent accidental electrical contact.
4. For PROPER PERFORMANCE AND PERSONAL SAFETY be sure to select the proper size PREFORMED Ground Wire Molding before application.
5. PREFORMED Ground Wire Moldings are precision devices. To insure proper performance, they should be stored in cartons under cover and handled carefully.

CATALOG NUMBER	LENGTH IN FEET	UNITS CARTON	COLOR	DIMENSIONS A&B (INCHES)
GWM-7100	8	125	Gray - Poly	1/2
GWM-7101	8	100	Gray - Poly	3/4
GWM-7102	8	50	Gray - Poly	1
GWM-7200	8	125	Black - Poly	1/2
GWM-7201	8	100	Black - Poly	3/4
GWM-7202	8	50	Black - Poly	1

PREFORMED LINE PRODUCTS

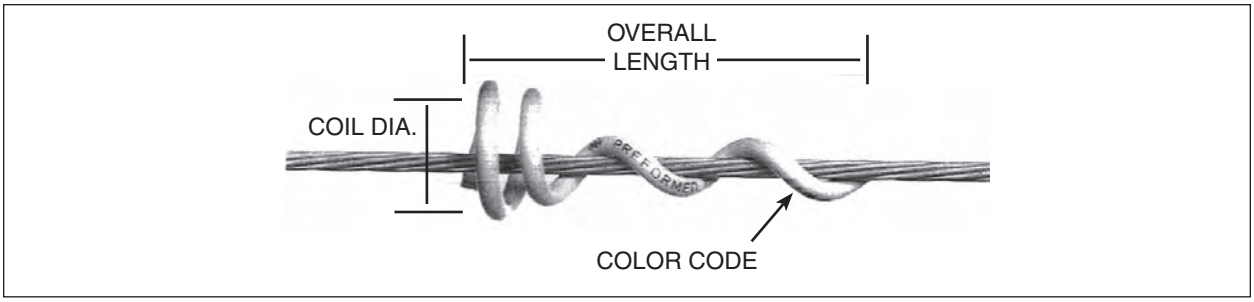
Section 18 – Distribution (Overhead): Wildlife Protection

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BIRD-FLIGHT™ Diverters 18-1
Wildlife Protectors 18-3
Protector Tubing 18-5

BIRD-FLIGHT™ Diverter

NOMENCLATURE



Length: Distance product covers the conductor.

Color Code: Identifies conductor range, corresponding to tabular information on the following page.

Color: Yellow or Gray

Material: Outdoor grade PVC

Coil Diameter: Internal diameter of diverter coil

GENERAL RECOMMENDATIONS

The BIRD-FLIGHT Diverter is designed to make overhead lines and guyed structures visible to birds and provides an economical means of reducing the hazard to both lines and birds. For low and medium voltage construction, the BIRD-FLIGHT Diverter is applied to the phase conductors (bare or jacketed). For high voltages, it is used on the shield wire.

The BIRD-FLIGHT Diverter is lightweight, offers little wind resistance and is easily and quickly applied by hand or by hot stick. The positive grip on the conductor ensures that the Bird-Flight Diverter remains in the applied position and cannot move along the span under aeolian vibration or other conditions.

Visibility: The diverter section increases the visible profile of the cable or conductor to a degree necessary to ensure safety, but avoids an undesirably bulky outline.

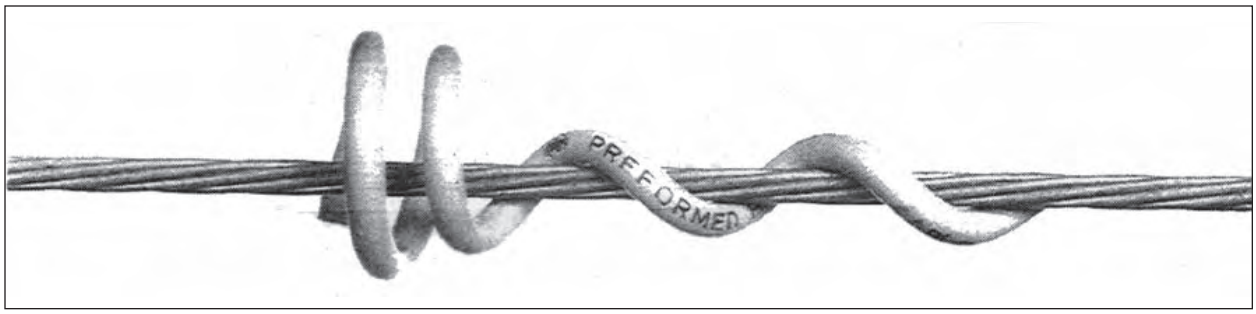
Material: Manufactured from rigid .375" and .500" high impact polyvinyl chloride (PVC) possessing excellent chemical resistance and tensile strength properties, the BIRD-FLIGHT Diverter will retain good physical characteristics within a range of extreme temperatures. Aging tests confirm the material does not deteriorate in function or appearance from the effects of severe weather conditions. Industrial fumes and salt water cannot seriously degrade the properties of rigid PVC.

APPLICATIONS

Ensure the correct size BIRD-FLIGHT Diverter is used. For a detailed installation description, refer to the application instructions. Hot stick application is fast and simple with standard equipment.

Spacing: For optimum results, spacing distances are generally recommended at 15' intervals depending upon local conditions. Since wind resistance is very limited, sufficient BIRD-FLIGHT Diverters can be used to ensure adequate visibility without creating stresses on the line. When marking adjacent spans, overall visibility is improved by staggering the application.

BIRD-FLIGHT™ Diverter



For use on:
Bare and Jacketed Conductors & Strand

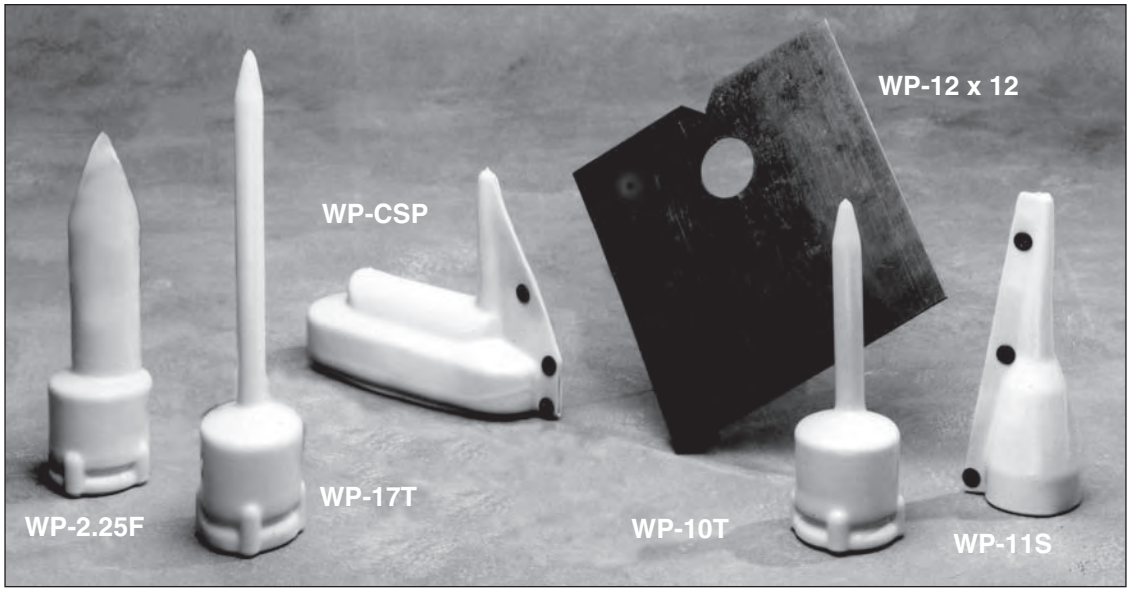
Catalog Number	Material Color	Conductor Range (INCHES) Min	Conductor Range (INCHES) Max	Overall Length (INCHES)	Diameter of Diverter Coil (INCHES)	Diameter of PVC Rod (INCHES)	Color Code
BFD-MS-3331	Yellow	0.175	0.326	7.00	2.25	0.375	Black
BFD-MS-3346	Gray						
BFD-MS-3155	Yellow	0.250	0.349	8.50	2.50	0.375	Blue
BFD-MS-2921	Gray						
BFD-MS-3164	Yellow	0.350	0.449	9.50	2.75	0.375	Brown
BFD-MS-3355	Gray						
BFD-MS-3341	Yellow	0.450	0.599	11.00	3.00	0.375	Green
BFD-MS-3366	Gray						
BFD-MS-3344	Yellow	0.600	0.770	13.00	4.00	0.500	Purple
BFD-MS-3371	Gray						
BFD-MS-3345	Yellow	0.771	0.858	15.00	4.25	0.500	Red
BFD-MS-3376	Gray						

Explanatory Notes:

For field study results, consult Preformed Line Products.

Wildlife Protectors

NOMENCLATURE



CONSTRUCTION

All but one of the wildlife protectors are made from a light gray, high voltage, plastisol compound that is a minimum of 100 mils thick. This material contains ultraviolet stabilizers and fungicides and has a dielectric strength of 240 V/mil. Wildlife Protector WP-12x12 is manufactured from a HDPE (high density polyethylene) material that is minimum 125 mils thick with a similar dielectric strength.

GENERAL RECOMMENDATIONS

These devices are designed to reduce the number of outages experienced on the utility's distribution system by insulating transformer bushings, lighting arrestors, capacitors and switching equipment from incidental contact by animals. This is achieved by covering energized components sufficiently so that an animal can not contact the component and ground potential simultaneously.

INTENDED USE: Plastisol guards are to be secured to the bushings of transformers or similar equipment such that the energized components are covered for a reasonable distance or an insulating medium separates energized components from grounded components in areas open to animal contact.

Wildlife Protectors

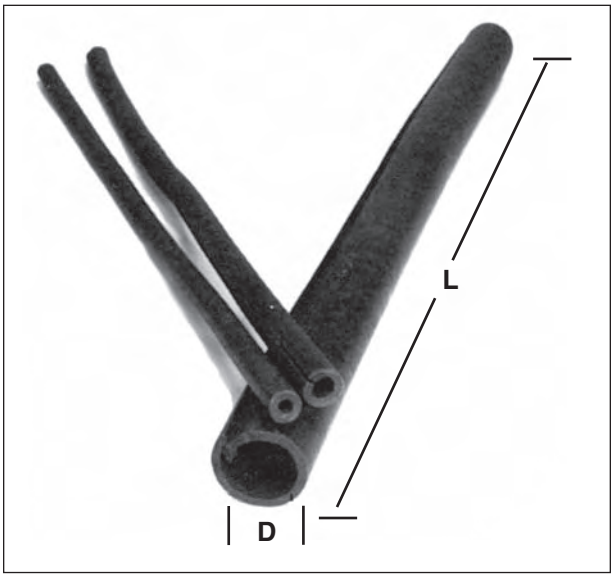
Catalog Number	Carton Quantity	Height (INCHES)	Width (INCHES)	Length (INCHES)	Tap Wire Opening (INCHES)	Description
WP-10T	25	11.75	3.75	3.75	up to 0.75	Single bushing transformer and capacitor. Will cover a maximum of 7.5" of tap wire. Locating tabs hold the guard on the first skirt of the insulator.
WP-17T	25	17.00	3.75	3.75	up to 0.75	Single bushing transformer and capacitor. Will cover a maximum of 12.5" of tap wire. Locking tabs hold the guard on the first skirt of the insulator.
WP-11S	25	11.00	3.50	3.50	0.40	Existing tap retrofit. Apply through slit edge and hold guard in place with the fasteners provided.
WP-CSP	25	8.75	3.50	12.25	0.40	Completely Self-Protected (CSP) transformers. Designed as retrofit. Designed to protect both primary bushing and lighting arrestor.
WP-12x12[(1)]	25	0.125	12.00	12.00	N/A	Single bushing and CSP transformers. Cover the top of the transformer. Fits under the bottom skirt of the transformer. Black HDPE
WP-2.25F[(2)]	25	12.75	3.75	3.75	cut as needed	Single bushing transformer. Covers 2.25" OD current limiting fuse bolted to bushing. Bottom of the double dipped tip indicates point of install for fuse. Locking tabs hold guard on first skirt of the insulator.

EXPLANATORY NOTES:

1. The height dimension is the thickness of the WP-12x12 product.
2. Designed for use with current limiting fuse.
3. Information is effective March 1, 1999 and supersedes prior information.

Protector Tubing

NOMENCLATURE



GENERAL RECOMMENDATIONS

Protector tubing protects energized lines from faults due to incidental contact caused by various types of wildlife. The durable EPDM® tubing is a minimum of 125 mils thick with a dielectric strength of 500 V/mil and has excellent resistance to ozone and petroleum based solvents. The tubing is not intended to insulate energized lines from human contact.

Catalog Number	Inside Diameter (in) D	Length (ft) L	Carton Quantity
PT-216	0.216	8	150
PT-315	0.315	8	100
PT-464	0.464	8	65
PT-665	0.664	8	35
PT-847	0.847	8	25
PT-1084	1.084	8	15
PT-1360	1.360	8	10

EXPLANATORY NOTES:

1. Slit version available, add -S to the end of the catalog number.
2. Continuous rolls available, consult PLP on price and delivery.

PREFORMED LINE PRODUCTS

Section 19 – Distribution (Underground)

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Cable Riser Insulators & Cable Support Blocks 19-12
Cable Cap 19-13

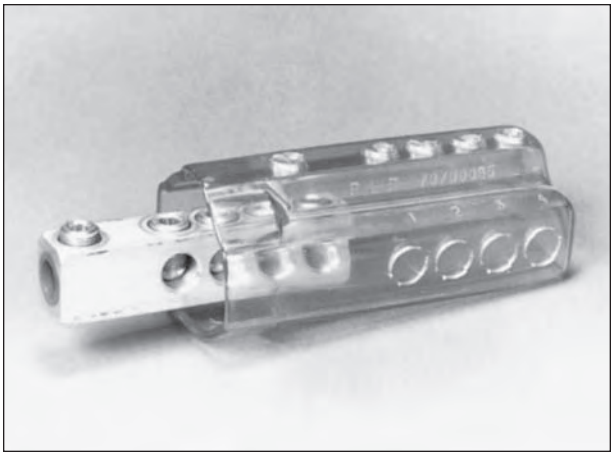
HYDRO-TITE™ Splice Cover

HYDRO-TITE™ Submersible Splice Cover

- Provides a secure, waterproof and insulated splice seal
- Maintains watertight integrity and full insulating value for all direct buried, underground network, residential and overhead service splice joints
- Eliminates taping, reducing material and labor costs for splice preparation
- Rated 600V
- Meets performance requirements of ANSI C119.1 and ANSI C119.4

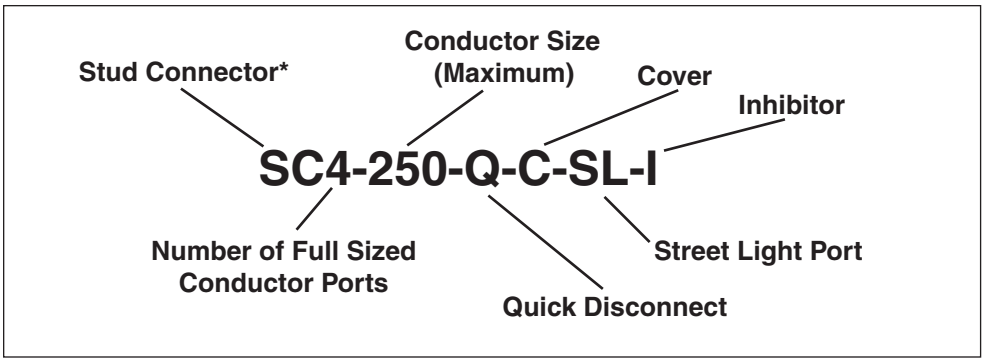
	Conductor Range		Cable Insulation		
Catalog Number	Al	Cu	Diameter Range	"D"	"A"
HT-350	14 – 2/0	14 – 2/0	.150 – .600"	1.3"	4.4"
HT-500	14 – 500	14 – 500	.150 – 1.175"	1.6"	5.3"
HT-500L	14 – 500	14 – 500	.150 – 1.175"	1.6"	7.7"

Underground Connectors



CONNECTOR FEATURES

Connectors are available with many combinations of added features. Add the correct suffix to the catalog number when ordering. The chart below shows an example of the PREFORMED™ Padmount Transformer Connector-Quick Disconnect with various features.



*For Pedestal Connectors, catalog number will start with PC.

Catalog Number	Suffix To Add To Order Each Feature
SC4-250-Q-SL	-SL: STREET LIGHT OPTION
SC4-250-Q-C	-C-COVER
SC4-250-Q-I	-I-INHIBITOR COMPOUND
SC4-250-Q-C-SL-I	-ALL FEATURES INCLUDED

Padmount Transformer Connectors



PADMOUNT TRANSFORMER CONNECTOR – QUICK DISCONNECT

Connector is fabricated from high strength aluminum alloy 6061-T6. Clear plated for low contact resistance. Dual rated for use with both copper and aluminum conductors. Plastisol cover has dielectric strength of 240 volts per mil. Refer to previous page to order optional features.

Custom configurations available.

NOTE: All connectors available in screw-on type. To order, omit -Q from catalog number.

Padmount Transformer Connector—Quick Disconnect

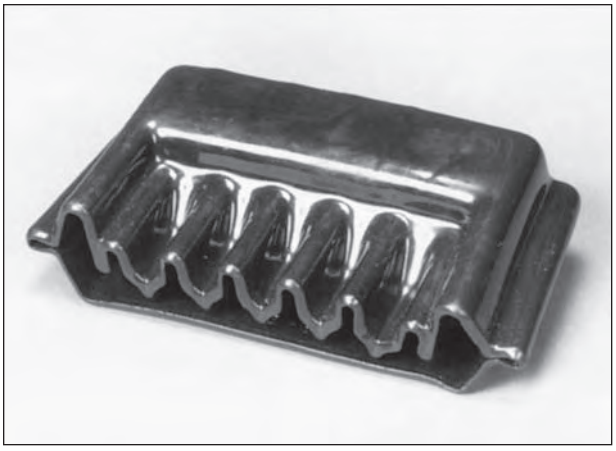
Catalog Number	Conductor Range	Number of Conductors	Fits Stud Size	Approximate Dimensions			
				Length with Street Light Option	Length without Street Light Option	Width	Height
SC2-250-Q	#10 - 250 kcmil	2	5/8"-11 threads per inch	4 -1/8"	3-5/16"	1"	1-1/4"
SC3-250-Q		3		4-15/16"	4-1/8"		
SC4-250-Q		4		5-3/4"	4-15/16"		
SC5-250-Q		5		6-9/16"	5-3/4"		
SC6-250-Q		6		7-3/8"	6-9/16"		
SC7-250-Q		7		8-3/16"	7-3/8"		
SC8-250-Q		8		9"	8-3/16"		
SC2-350-Q	#10 - 350 kcmil	2		4-1/2"	3-37/64"		
SC3-350-Q		3		5-1/2"	4-1/2"		
SC4-350-Q		4		6-7/16"	5-1/2"		
SC5-350-Q		5		7-3/8"	6-7/16"		
SC6-350-Q		6		8-5/16"	7-3/8"		
SC7-350-Q		7		9-9/32"	8-5/16"		
SC8-350-Q		8		10-1/4"	9-9/32"		
SC4-500-Q	#10 - 500 kcmil	4	1"-14 threads per inch	7-7/8"	6-3/4"	1-1/4"	1-3/4"
SC5-500-Q		5		9"	7-7/8"		
SC6-500-Q		6		10-1/8"	9"		
SC7-500-Q		7		11-1/4"	10-1/8"		
SC8-500-Q		8		12-3/8"	11-1/4"		

Pedestal Connectors



PEDESTAL CONNECTORS – BARE

For above grade pedestals—not watertight. Connector is fabricated from high strength aluminum alloy 6061-T6. Clear plated for low contact resistance. Dual rated for use with both copper and aluminum conductors.

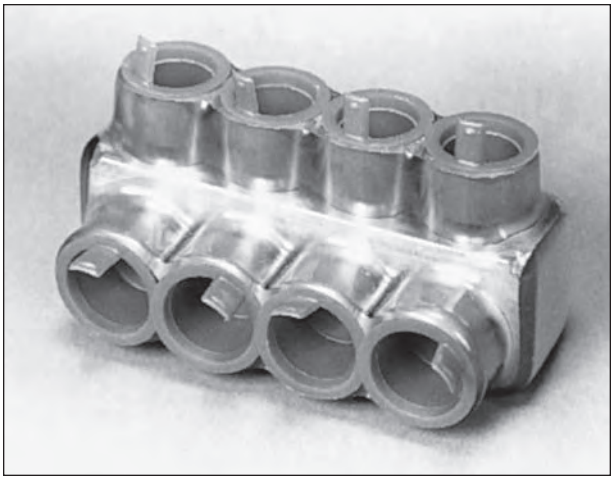


COVER

Plastisol cover has dielectric strength of 240 volts per mil.

Pedestal Connectors-Bare							
Catalog Number	Conductor Range	Number of Conductors	Carton Quantity	Approximate Dimensions			Cover Catalog Number
				Length	Width	Height	
PC2-250	#10-250 kcmil	2	25	1-13/16"	1"	1-1/4"	VB-4
PC3-250		3		2-5/8"			VB-4
PC4-250		4		3-7/16"			VB-4
PC5-250		5		4-1/4"			VB-6
PC6-250		6		5-1/16"			VB-6
PC7-250		7		5-7/8"			N/A
PC8-250		8		6-11/16"			N/A
PC3-350	#10-350 kcmil	3		3-1/32"			VB-4
PC4-350		4		3-31/32"			VB-4
PC5-350		5		4-59/64"			VB-6
PC6-350		6		5-7/8"			VB-6
PC7-350		7		6-13/16"			N/A
PC8-350		8		7-3/4"			N/A

Pedestal Connectors



PEDESTAL CONNECTORS – CLEAR DIPPED PVC

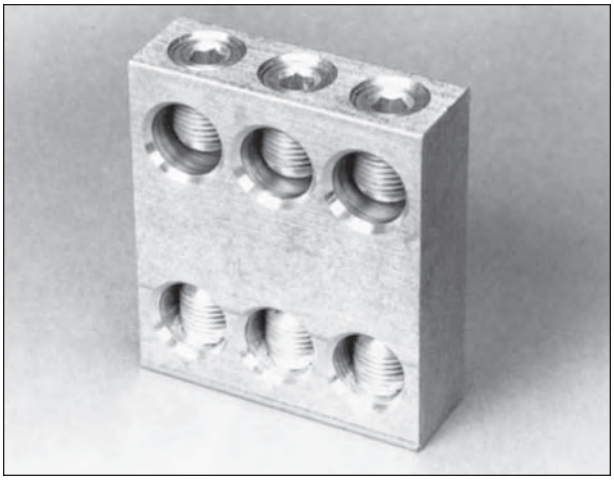
For secondary dead front application. For above grade pedestals only — not watertight. Connector is fabricated from high strength aluminum alloy 6061-T6. Dual rated for use with both copper and aluminum conductors. This connector comes with inhibitor as a standard feature.

NOTE: for 500 MCM pedestals, contact Preformed Line Products.

ALSO AVAILABLE: Pedestal Connector Kits with two covered and one bare connector.

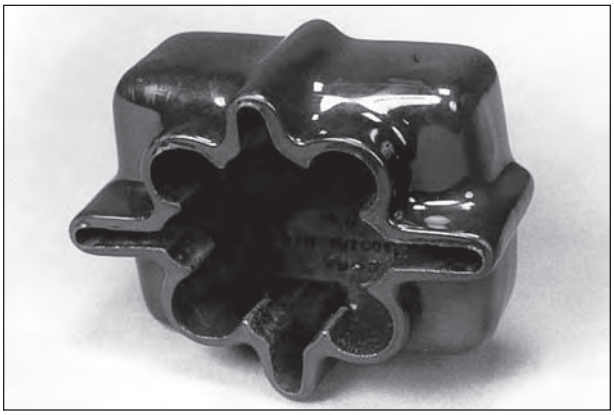
Pedestal Connector - Clear-dipped PVC						
Catalog Number	Conductor Range	Number of Conductors	Carton Quantity	Approximate Dimensions Length	Width	Height
PC2-250CC	#10 -250 kcmil	2	25	2"	2-1/8"	2"
PC3-250CC		3		2-3/4"		
PC4-250CC		4		3-9/16"		
PC5-250CC		5		4-3/8"		
PC6-250CC		6		5-3/16"		
PC7-250CC		7		6"		
PC8-250CC		8		6-13/16"		
PC3-350CC	#10-350 kcmil	3		3-3/16"		
PC4-350CC		4		4"		
PC5-350CC		5		5"		
PC6-350CC		6		6"		
PC7-350CC		7		7"		
PC8-350CC		8		8"		

Pedestal Block Connector



PEDESTAL BLOCK CONNECTOR

Pedestal Block Connector for above grade pedestals- not watertight. Connector is fabricated from high strength aluminum alloy 6061-T6. Clear plated for low contact resistance. Dual rated for use with both copper and aluminum conductors. Pedestal Block Connectors can be ordered with inhibitor. Refer to first page to order optional features.



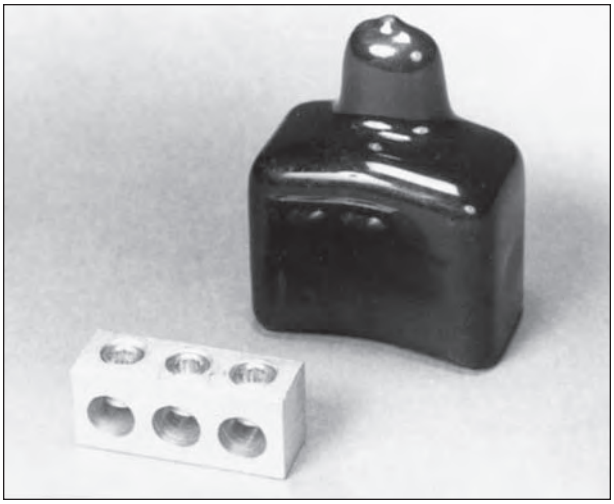
COVER

Plastisol cover has dielectric strength of 240 volts per mil.

Pedestal Block Connector						
Catalog Number	Conductor Range	Number of Conductors	Carton Quantity	Length	Width	Height
PC33-350	#10-350 kcmil	6	25	3-1/2"	3-1/16"	1"
VB-33	COVER FOR ABOVE CONNECTOR					

ALSO AVAILABLE: Pedestal Connector Kits with three connectors and two vinyl boots.

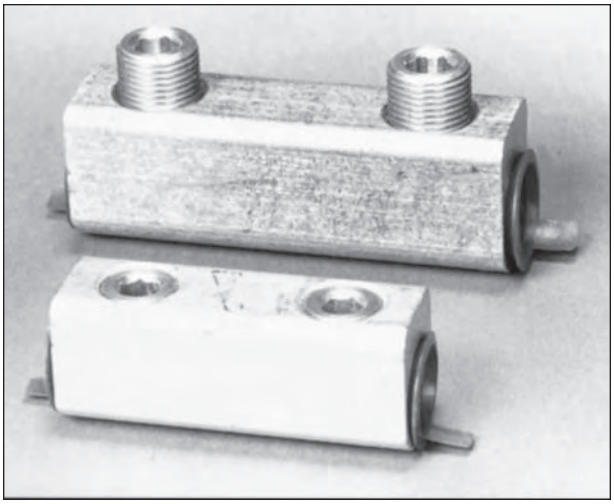
Street Light Connector



A dual-rated AL/CU compact street light connector specifically designed for installation in the base of street light poles. Connector is fabricated from high strength aluminum alloy 6061-T6. Clear plated for low contact resistance. FURNISHED AS A KIT ONLY. Comes complete with snap-on PVC cover.

Street Light Connector Kit		
Catalog Number	Conductor Range MAIN TAP	Standard Carton
SLK-0-3	1/0 #14	10

In-line Splice/Reducer Mechanical

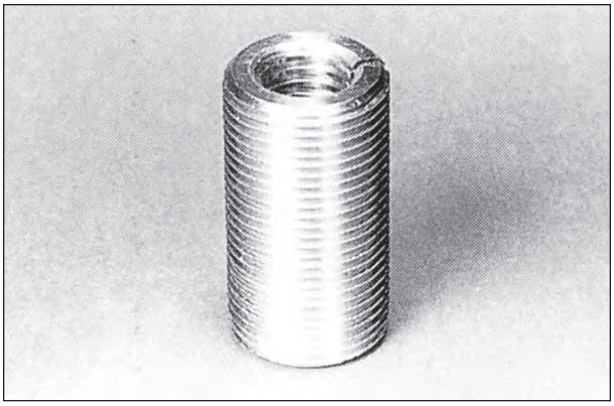


Splice is fabricated from high strength aluminum alloy 6061-T6. Clear plated for low contact resistance. This splice is dual rated AL/CU. Inhibitor is furnished as standard.

In-line Splice/Reducer-Mechanical						
Catalog Number	Conductor Range	Number of Conductors	Carton Quantity	Length	Width	Height
US-250M	#10-250 kcmil	2	25	2.6"	1"	1-1/4"
US-350M*	#10-350 kcmil			2.6"	1"	1-1/4"
US-500M*	#10-500 kcmil			3-3/8"	1-1/8"	1-15/32"

* Lower range can be limited by using different length of screws. Example: 500 MCM to 3/0. (Limits overall height)

Reducer Adaptor

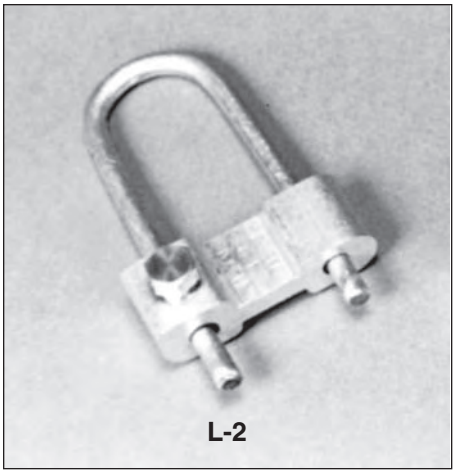


Padmount Transformer Connector

Inner and outer threads permit the use of 1" stud hole connectors on 5/8" studs.

Reducer Adaptor - Padmount Transformer Connector		
Catalog Number	**Fits Stud Size**	**Application**
RA-158	5/8" - 11 Threads per Inch	Screws on to 5/8" Stud - Permits Use of 1"-14 Stud Connectors on 5/8"-11 Stud.

Disposable Enclosure Lock



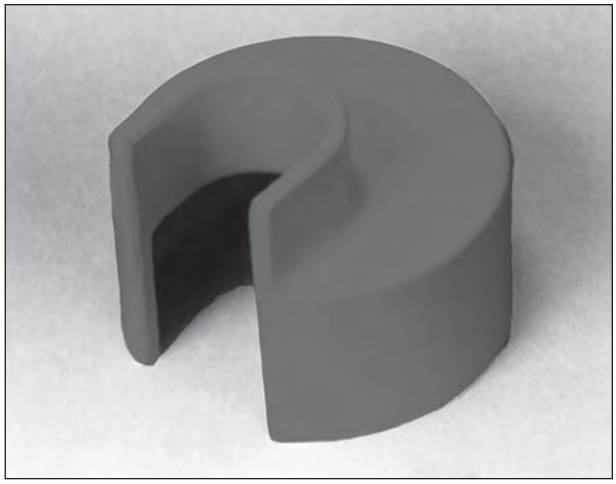
L-2

The Disposable Enclosure Lock with shear head screws are time-tested and proven to be cost-effective alternatives to key locks. The shear head screw allows universal application and security for all enclosures.

Disposable Enclosure Locks

Catalog Number	Hasp Length (inches)	Hasp Diameter (inches)	Hasp Material Aluminum Clad Steel	Carton Quantity	Weight (lbs) Per 100
L-2	3	1	#4	100	11

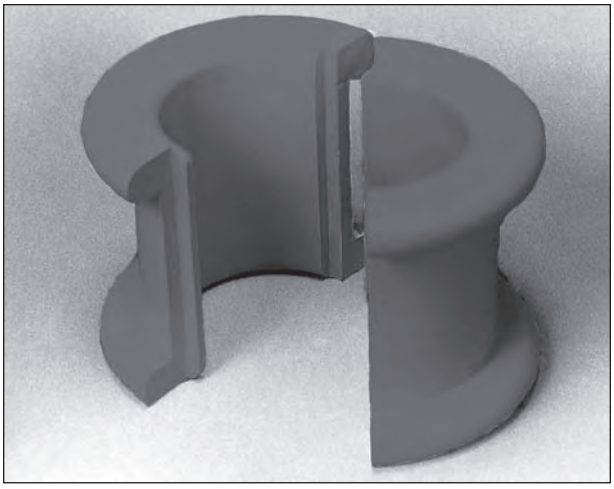
Conduit Riser Caps



Conduit Riser Caps adapt schedule 40 PVC conduit to schedule 40 Cable Riser Shield. Conduit Riser Caps are made of black, UV stabilized flame-retardant, rigid, thermoset urethane. Custom sizes available upon request.

Conduit Riser Caps		
Catalog Number	Description	Carton Quantity
5060300	3 to 2 unit. Adapts 3" conduit to 2" riser shield	50
5060301	4 to 2 unit. Adapts 4" conduit to 2" riser shield	50

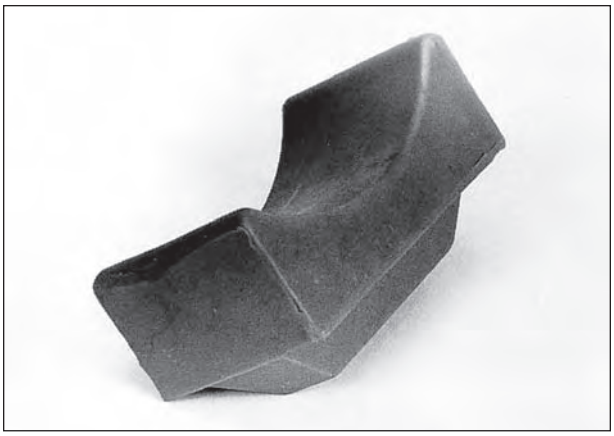
Cable Riser Insulators & Cable Support Blocks



DONUT™ CABLE RISER INSULATORS

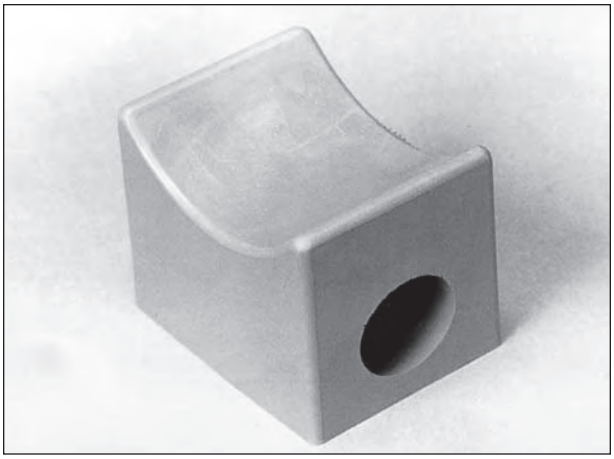
DONUT™ Cable Riser Insulators support riser cables in conjunction with mounting brackets. The material is black, UV stabilized, and flame-retardant rigid thermoset urethane. DONUT Cable Riser Insulator consists of two halves. The brackets are not supplied by PLP®. Catalog number 5060200 fits a 2.5" (nominal) diameter cable. Smaller diameter cables can be accommodated by using elastomeric filler tubes. Consult PLP for details.

Catalog Number: 5060200



CABLE SUPPORT BLOCKS

Cable Support Blocks support underground cables in manholes, vaults, and conduit. They are made from unbreakable flame-retardant, flexible, thermoset urethane. Other sizes and shapes can be custom-molded as needed. **Consult PLP with design requirements.**



Cable Cap



Cable Caps for 2-1/4" conductors are made from a high grade, UV stabilized, PVC material. Cable Caps provide superior protection from contamination for cut conductors during underground construction.

Cable Cap			
Catalog Number	Description	Weight Per Unit	Units Per Carton
C-2.25	Protects cut cable ends from contamination during underground construction	6.4 oz.	25

PREFORMED LINE PRODUCTS

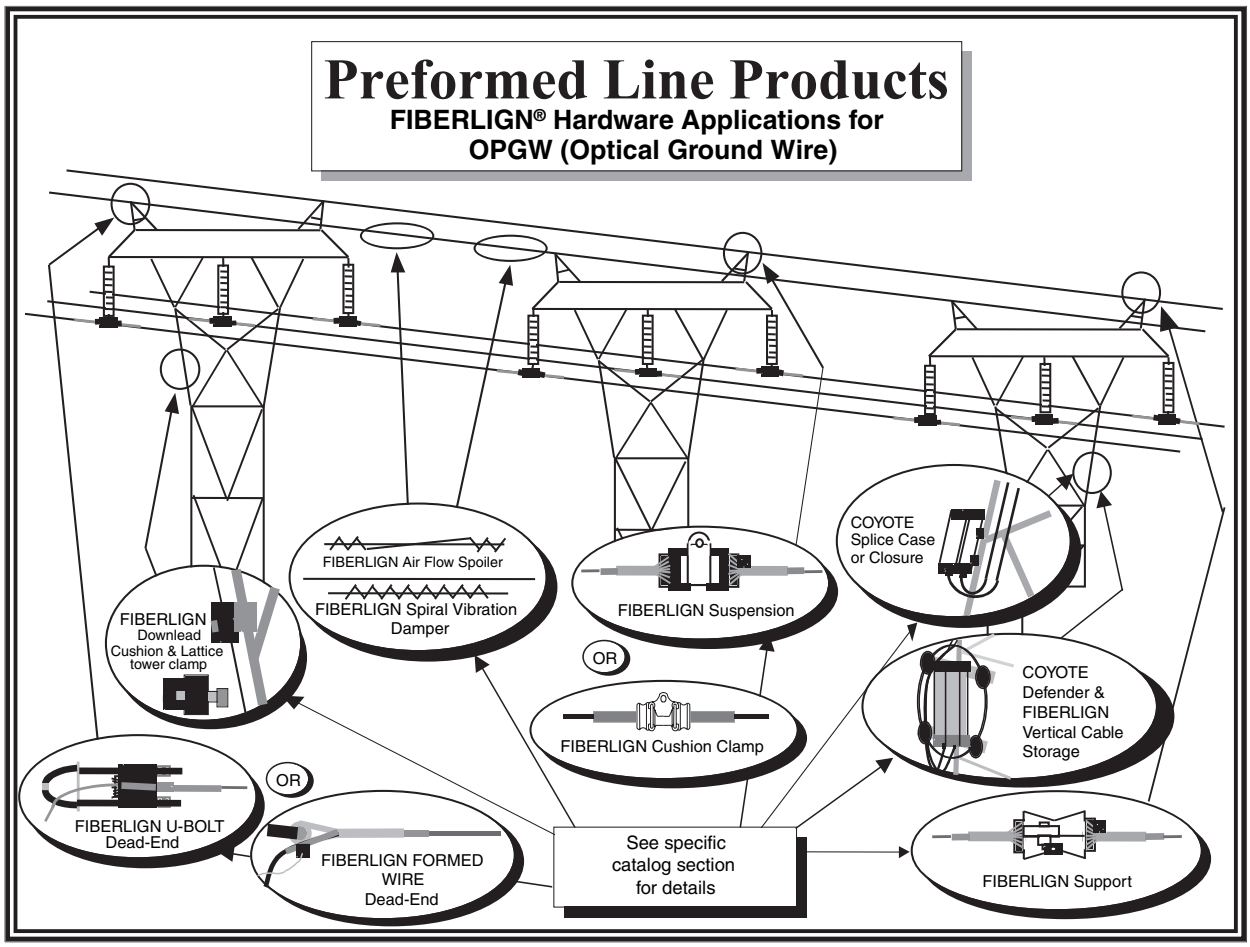
Section 20 – Fiber Optics: FIBERLIGN® Hardware for OPGW

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FIBERLIGN® Formed Wire Dead-end 20-5
FIBERLIGN® Suspension for OPGW 20-9
FIBERLIGN® Cushion Clamp for OPGW 20-14
FIBERLIGN® Repair Rods for OPGW 20-17

Fiber Optic Products

OPGW Product Layout



FIBERLIGN® Dead-end for OPGW

Retaining Rods: Aluminum Covered Steel, with Conductive Grit Applied.

Nuts: Galvanized Steel

U-bolt, Spacer Bar: Galvanized Steel

Housing: Galvanized Iron

Wedges: Aluminum Alloy

Grounding Bolt And Lock Washer: (included but not shown)**:** Galvanized Steel

APPLICATION:

The FIBERLIGN Dead-end is designed to terminate Optical Ground Wire (OPGW) while minimizing any compression stresses that may be transferred to the core or optical elements within. The Retaining Rods act with the Wedge and Housing to distribute the axial and compressive loading over a large area of the OPGW. Standard units have left-hand lay rods.

The FIBERLIGN® Dead-end sketch at the bottom of this page includes reference to the exposed rod length "L_E" or the rod length beyond the housing. This dimension is listed in the catalog table to help with VORTX™ Damper placement.

The slotted Housing design allows for the application of the FIBERLIGN Dead-end at any location on the OPGW.

BONDING: Provisions for electrically bonding the OPGW to the supporting structure or ground lead are an integral part of the Housing. A 1" x 1/2"-13 UNC, 2A galvanized Grounding Bolt and Lock Washer are provided.

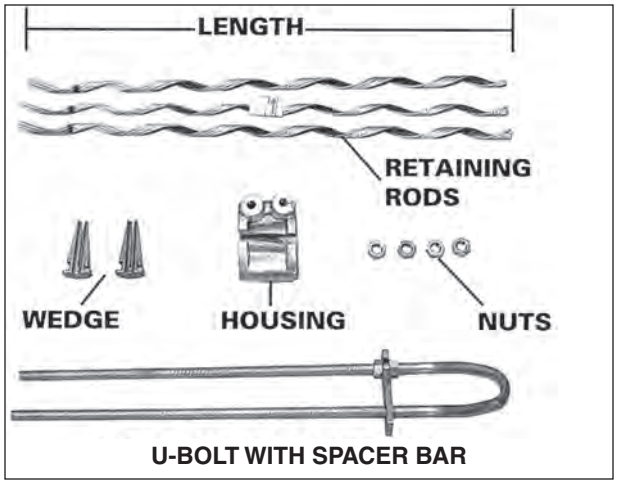
GROUNDING WIRE ASSEMBLY OPTIONS: A 4' ground wire with compression terminal can be provided. This assembly can be connected from the FIBERLIGN Dead-end to the ground lead in your system. Two types of ground materials are offered (copper or aluminum). To included the preferred ground wire assembly in the same carton with the Dead-end, add the appropriate suffix code to the Dead-end catalog number (see accessory table on page 286).

ADJUSTMENT: The U-Bolt provides up to 18 inches of take-up to allow for tension adjustment and extra clearance distance without the need for external hardware such as a turnbuckle or extension links.

COMPONENT STRENGTH: The value shown in the table on the following page reflects the strength of the standard housing and U-bolt. Higher strength requirements can be accommodated. Contact PLP® for more information.

HOLDING STRENGTH: Specific holding strengths on an OPGW cable will depend upon that cable's internal construction design and composition of the materials used for the individual strands. The highest holding capabilities exist with cables that use all aluminum clad steel strands in a single layer. Use of multiple layers and/or aluminum alloy strands may reduce holding capabilities. Consult PLP for information regarding holding abilities of the FIBERLIGN OPGW Dead-end for a specific OPGW design.

NOMENCLATURE



U-BOLT WITH SPACER BAR

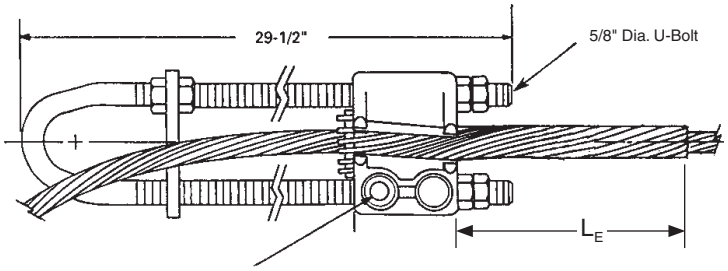
LAY DIRECTION: Left-hand lay is standard. Custom right-hand lay units are available. Contact PLP with cable specifications for further information.

ATTACHMENT FITTINGS: The dead-end U-bolt component should be applied over pins, sheave wheels, or other fittings that have smooth contours, appropriate diameters and adequate strength for proper fit and support under loading conditions.

- For 5/8" U-bolts used in standard dead-ends designed for cable diameters less than or equal to .749" diameter - Adequate fitting or pin diameters range from 5/8" to 1-7/8".
- For 3/4" U-bolts used in standard dead-ends designed for cable diameters greater than .749" diameter cable - Adequate fitting or pin diameters range from 5/8" to 13/16".
- For either U-bolt size connnected to a vang or structure plate, the holes in the plate should be chamfered - an example of an acceptable plate is maximum thickness of 1-1/16" (27 mm), Hole diameter 1" (25 mm), Chamfer 1/8" x 450) (3.2 mm x 450), and Installation clearance 1-15/16" (24 mm).

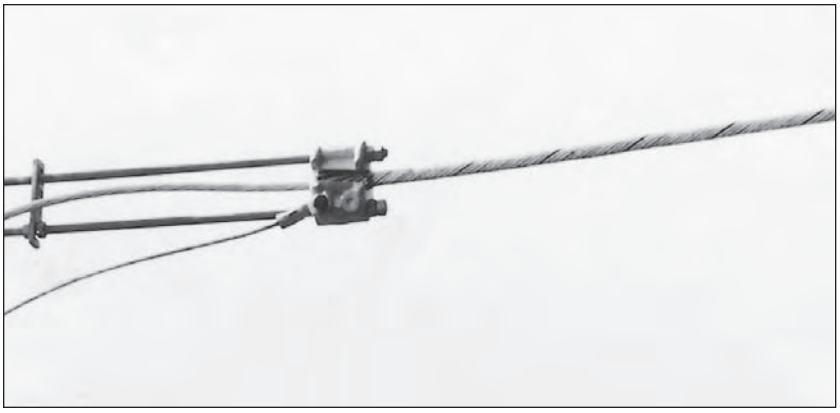
Consult PLP® for installation to other plates or fittings.

COMPONENT REUSE: The retaining rods and wedges may be reused once for retensioning after initial installation. The hardware components may be reused as desired if in good condition. Do not modify any component.



Threaded Hole (1/2-13 UNC, 7/8" deep) to fit class 2A Galvanized Bolt for Grounding Connection.

FIBERLIGN® Dead-end for OPGW



FIBERLIGN Dead-end for OPTICAL GROUND WIRE (OPGW)
Patented

Catalog Number	Diameter Range Min. (in)	Max. (in)	Min. (mm)	Max. (mm)	Overall Rod Length (in)	Rods per set	Subset	Color Code	Compo-nents Rated Strength (lbs.)	Exposed Rod Length for (L_E) VORTX™ placement (in)	(mm)
280110266	.358	.374	9.1	9.5	24	9	3-3-3	Blue	25,000	21	533
2801300	.375	.391	9.5	9.9	24	9	3-3-3	Pink	25,000	21	533
2801301	.392	.410	10.0	10.3	24	9	3-3-3	Pink	25,000	21	533
2801302	.411	.425	10.4	10.7	26	10	3-3-4	White	25,000	23	584
2801303	.426	.443	10.8	11.2	26	10	3-3-4	White	25,000	23	584
2801304	.444	.460	11.3	11.6	27	10	3-3-4	Brown	25,000	24	609
2801305	.461	.477	11.7	12.0	27	10	3-3-4	Brown	25,000	24	609
2801306	.478	.494	12.1	12.5	29	11	3-4-4	Purple	25,000	26	660
2801307	.495	.511	12.6	12.9	29	11	3-4-4	Purple	25,000	26	660
2801308	.512	.528	13.0	13.3	31	12	3-3-3-3	Yellow	25,000	28	711
2801309	.529	.545	13.4	13.8	31	12	3-3-3-3	Yellow	25,000	28	711
2801310	.546	.562	13.9	14.2	32	12	3-3-3-3	Blue	25,000	29	737
2801311	.563	.579	14.3	14.6	32	12	3-3-3-3	Blue	25,000	29	737

See figure on page 20-2

Left-hand lay standard

FIBERLIGN® Dead-end for OPGW

ORDERING INSTRUCTIONS: Select the appropriate FIBERLIGN Dead-end from the catalog table in this section.

Consult PLP® for designs for OPGW diameters, strengths, or lay directions not shown. Also call PLP for availability of all sizes and designs.

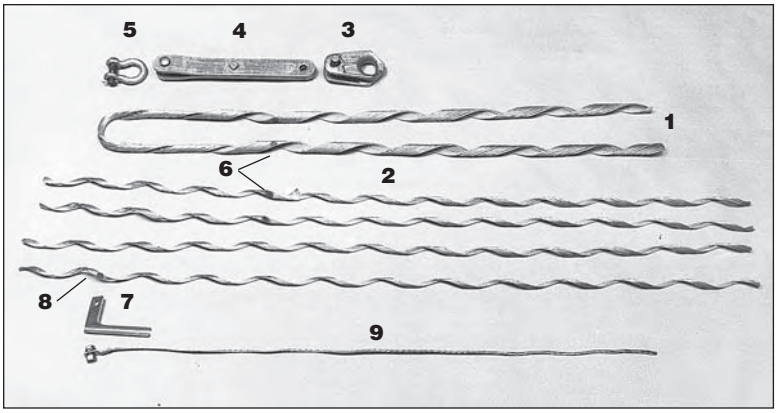
ACCESSORIES: Accessories may be included in the same container with the Dead-end by adding the appropriate suffix code.

CAUTION: Determine the appropriate material and size wire necessary to provide adequate grounding for your system before ordering the ground wire assemblies. For proper performance and personal safety be sure to select the proper ground wire before application.

Cat. No.	Suffix Code	Description
710010016	G	4' long (1.2 m) #4(7W) copper ground wire with terminal on one end
710010294	GA	4' (1.2 m) long 4/0 (7W) aluminum ground wire with terminal on one end
710011205	GA2	5' (1.5 m) long 95 mm2 (7W) aluminum ground wire with terminals at both ends

CATALOG NUMBER	Diameter Range				Rod Length (inches)	Rods per set	Subset	Color Code	Components Rated Strength (lbs.)	Exposed Rod Length (L_E) for VORTX™	
	Min. (in)	Max. (in)	Min. (mm)	Max. (mm)						Damper (in.)	Placement (mm)
2801312	.580	.596	14.7	15.1	34	12	3-3-3-3	Orange	25,000	31	787
2801313	.597	.613	15.2	15.5	34	12	3-3-3-3	Orange	25,000	31	787
2801314	.614	.630	15.6	15.9	36	11	3-4-4	Red	25,000	33	838
2801315	.631	.647	16.0	16.4	36	11	3-4-4	Red	25,000	33	838
2801316	.648	.664	16.5	16.9	38	12	3-3-3-3	Black	25,000	35	889
2801317	.665	.681	17.0	17.2	38	12	3-3-3-3	Black	25,000	35	889
2801318	.682	.698	17.3	17.7	40	12	3-3-3-3	Green	25,000	37	939
2801319	.699	.715	17.8	18.0	40	12	3-3-3-3	Green	25,000	37	939
2801320	.716	.732	18.1	18.5	41	12	3-3-3-3	Brown	25,000	38	965
2801321	.733	.749	18.6	18.9	41	12	3-3-3-3	Brown	25,000	38	965
2801322	.750	.766	19.0	19.4	59	12	3-3-3-3	Purple	30,000	56	1422
2801323	.767	.783	19.5	19.8	59	12	3-3-3-3	Purple	30,000	56	1422
2801324	.784	.800	19.9	20.2	64	12	3-3-3-3	Yellow	30,000	61	1549
2801325	.801	.817	20.3	20.7	64	12	3-3-3-3	Yellow	30,000	61	1549
2801326	.818	.834	20.8	21.1	66	13	3-3-3-4	Blue	30,000	63	1600
2801327	.835	.851	21.2	21.5	66	13	3-3-3-4	Blue	30,000	63	1600
2801328	.852	.868	21.6	22.0	70	12	3-3-3-3	Orange	30,000	67	1701
2801329	.869	.885	22.1	22.4	70	12	3-3-3-3	Orange	30,000	67	1701
2801330	.886	.902	22.5	22.8	72	12	3-3-3-3	Red	30,000	69	1753
2801331	.903	.919	22.9	23.2	72	12	3-3-3-3	Red	30,000	69	1753
2801332	.920	.936	23.3	23.8	74	13	3-3-3-4	Black	30,000	71	1803

FIBERLIGN® Formed Wire Dead-end for OPGW



NOMENCLATURE

1. **DEAD-END COMPONENT:** Aluminum Covered Steel with Grit Applied
2. **STRUCTURAL REINFORCING RODS:** Aluminum Covered Steel with Grit
3. **THIMBLE CLEVIS:** Galvanized Ductile Iron
4. **EXTENSION LINK (option):** Extension Link & Pin are galvanized steel or galvanized ductile iron. A stainless steel cotter key is provided to capture the pin.
5. **ANCHOR SHACKLE (option):** Galvanized steel forging.
6. **COLOR CODE AND CROSSOVER MARKS**
7. **CURRENT TRANSFER TAB:** High Strength Aluminum Alloy.
8. **CURRENT TRANSFER TAB LOCATION MARK**
9. **GROUNDING WIRE ASSEMBLY (option):** Copper or aluminum conductor with aluminum compatible lug

APPLICATION

The FIBERLIGN Formed Wire Dead-end offers an alternate method for dead-ending OPGW. Unlike the FIBERLIGN® Dead-end "U-Bolt Type" design shown at the beginning of this section, the Formed Wire Dead-end uses two helically shaped formed wire components: an inner layer of Structural Reinforcing Rods andam outer layer Dead-end component. The FIBERLIGN® Formed Wire Dead-end does not provide take-up adjestment.

The formed wire inner and outer layer components are designed to transfer axial tensile loads and distribute radial compressive forces over the surface in contact with the OPGW to minimize effects on the central core and internal optical fibers.

Standard designs offered for left-hand lay single layer strand OPGW are listed in the table in this section. The standard Structural Reinforcing Rod component is right-hand lay and the standard Dead-end Component is left-hand lay.

The rated breaking strength of OPGW with multi-layer strand construction may exceed the rated holding strength of a Formed Wire Dead-end. Consult PLP before using this product for multi-layer applications.

Useful dimensions for VORTX™ damper placement are listed in the catalog table and shown in a reference drawing above the catalog table.

FIBERLIGN® Formed Wire Dead-end for OPGW



FIBERLIGN Formed Wire Dead-end Installed

CURRENT TRANSFER TAB: The Current Transfer Tab provides direct electrical bonding between the OPGW and a ground lead. The Structural Reinforcing Rod Layer conveniently applies proper compression to retain the current transfer tab against the OPGW without fasteners. The current transfer tab has a 1/2" diameter bolt hole to accommodate a standard 1/2"-13, UNC bolt for compatible ground lug attachment.

The standard current transfer tab accomodates left-hand lay OPGW and is rated for 80 kA^2S to 150 kA^2S depending on size of dead-end unit. Right-hand lay units for special applications are also available. Consult PLP for specifics.

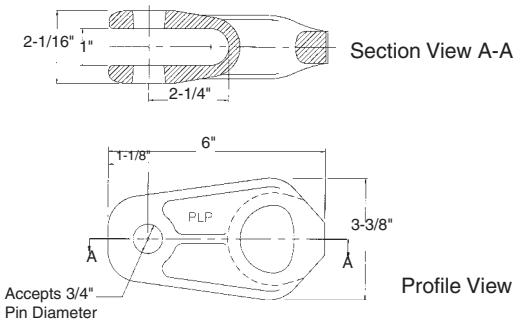
GROUNDING WIRE ASSEMBLY OPTIONS: A 4' long ground wire with compression terminal, 1/2"-13 x 1" long bolt, 1/2"-13 nut, and lock washer can be provided. Two types of ground wire material are offered (copper or aluminum). To order the ground wire assembly with the Formed Wire Dead-end, add the appropriate suffix code to the catalog number (see catalog table in this section).

COMPONENT STRENGTH: The strength of the thimble clevis, extension link, and anchor shackle are designed to meet or exceed the maximum rated holding strength of 25,000 pounds.

HOLDING STRENGTH: Specific holding strengths on an OPGW cable will depend upon that cable's internal construction design and composition of the materials used for the individual strands. The highest holding capabilities exist with cable that use all aluminum clad steel strands in a single layer. Use of multi-layer and/or aluminum alloy strands may reduce holding capabilities. Consult PLP for information regarding holding abilities of the FIBERLIGN FORMED WIRE Dead-end for a specific OPGW design.

LAY DIRECTION: Left-hand lay is standard. Right-hand lay units for right-hand lay OPGW are available. Contact PLP with cable specifications for further information.

ATTACHMENT FITTINGS: Dimensions of the thimble clevis provided (cat. no. TC-6F) are shown below. These are provided for proper selection of an extension link. PLP offers a 14" extension link as listed in the accessories section following the catalog table.



TC-6F Thimble Clevis

COMPONENT REUSE: Once installed, structural reinforcing rods and dead-end components may be removed and reinstalled once for repositioning purposes; do not reuse after this initial installation. The hardware components may be reused as long as they are in good condition. Do not modify any components.

FIBERLIGN® Formed Wire Dead-end for OPGW

ORDERING INSTRUCTIONS: Select the appropriate FIBERLIGN Formed Wire Dead-end for OPGW from the following table in this section.

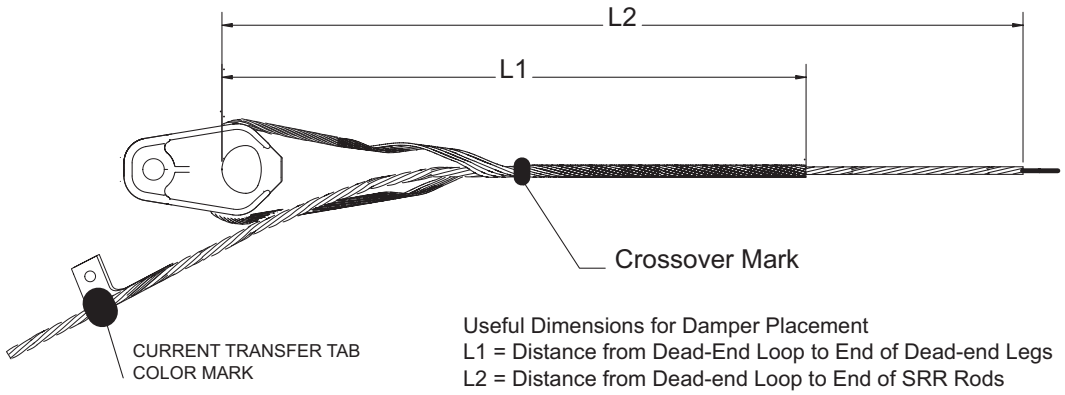
ACCESSORIES: Ground wire assemblies and other hardware accessories may be ordered with the Formed Wire Dead-end by adding the appropriate SUFFIX CODE from the adjacent table. Note: Suffix code C4 is part of standard equipment and is included in the catalog number. The sequence for remaining accessory suffix codes is Extension Link "E2" followed by Anchor Shackle "S2" followed by Ground Wire Assembly "G" or "GA". Example - 2890001C4E2S2G includes a Formed Wire Dead-end with standard thimble clevis (C4), 14" extension link (E2), Anchor Shackle (S2) and copper ground wire assembly (G).

Suffix Code	Description
E2	14" (356 mm) Extension Link (Catalog no. 00060132), 25,000#
S2	Anchor Shackle (Catalog. no. 72905002), 25,000#
G	4' (1.212 m) long #4 (7W) Copper Ground Wire with terminal on one end. 1/2"-13x1-1/2" long galvanized steel bolt, hex nut and lock washer are included for attachment. (Catalog. no. 710010015). Rated for 35 KA^2S.
GA	4' (1.212 m) long 4/0 (7W) Aluminum Ground Wire with terminal on one end. 1/2"-13x1-1/2" long galvanized steel bolt, hex nut and lock washer are i ncluded for attachment. (Catalog. no. 710010293) Rated for 80 KA^2S.
GA2	5' (1.5 m) long 95mm^2 (7 w) Aluminum Ground wire with terminals at both ends.

CAUTION: Determine appropriate material and size wire necessary to provide adequate grounding for your system before ordering the ground wire assemblies. For proper performance and personal safety be sure to select the proper ground wire before application.

Catalog Number	Diameter Range				Color Code	Rated Holding Strength* (Pounds)	Overall Structural Reinforcing Rod (SRR) Length in. (M)	Usefull Dimensions for Vortxtm Damper Placement		
	Min. (in)	Max. (in)	Min. (mm)	Max. (mm)				Srr Rod Diameter in. (mm)	Dead-end Component Length "L1" in. (mm)	Partial SRR Length "L2" In. (Mm)
2890020C4	0.355	0.399	9.0	10.1	Blue	20,000	44 (1.12)	.114 (2.9)	34 (863)	37.0 (939)
2890001C4	0.4	0.449	10.2	11.4	Blue	20,000	49 (1.24)	.114 (2.9)	36 (914)	40.5 (1028)
2890002C4	0.45	0.504	11.5	12.8	Red	25,000	54 (1.37)	.114 (2.9)	39 (990)	45.0 (1143)
2890003C4	0.505	0.555	12.9	14.1	Orange	25,000	58 (1.47)	.114 (2.9)	42 (1066)	47.5 (1206)
2890004C4	0.556	0.61	14.2	15.5	Black	25,000	63 (1.60)	.128 (3.2)	45 (1143)	51.5 (1308)
2890005C4	0.611	0.68	15.6	17.2	Green	25,000	68 (1.73)	.128 (3.2)	49 (1244)	56.0 (1422)
2890006C4	0.681	0.755	17.3	19.1	Pink	25,000	85 (2.16)	.144 (3.7)	64 (1625)	71.5 (1816)
2890007C4	0.756	0.83	19.2	21.1	Yellow	25,000	91 (2.31)	.144 (3.7)	68 (1727)	76.0 (1930)
2890008C4	0.831	0.925	21.2	23.5	Brown	25,000	98 (2.49)	.144 (3.7)	73 (1854)	81.5 (2057)
2890009C4	0.926	1.03	23.6	26.2	Purple	25,000	107 (2.72)	.144 (3.7)	79 (2006)	89.5 (2273)

* Based on OPGW with all aluminum clad steel strands in a single layer.

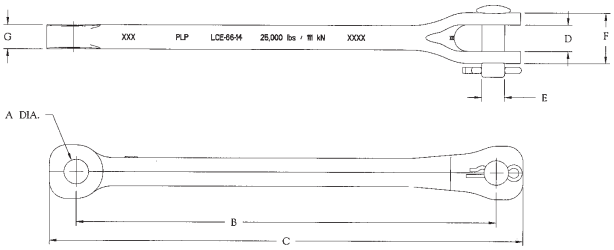


Useful Dimensions for Damper Placement
L1 = Distance from Dead-End Loop to End of Dead-end Legs
L2 = Distance from Dead-end Loop to End of SRR Rods

FIBERLIGN® Formed Wire Dead-end for OPGW

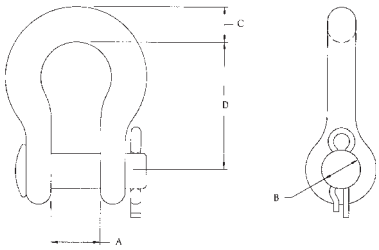
FIBERLIGN Formed Wire Dead-end Accessories

Extension Link with Pin and Cotter Key
suffix code **E2**, catalog number **00060132**



A (Dia.) Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)	F Inches (mm)	G Inches (mm)	Ultimate Tensile Strength (kN)
13/16 (20.6)	14 (356)	16-1/2 max. (419)	7/8 (22.2)	3/4 (19.1)	1-43/64 (42.5)	51/64 max. (20.2)	25,000 (111)

Anchor Shackle
suffix code **S2**,
catalog number **72905002**

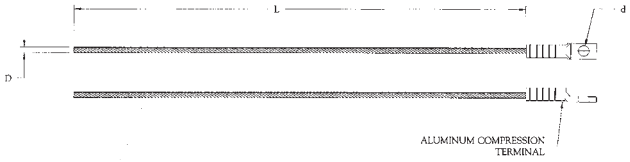


A Max. Width of Opening Inches (mm)	B Max. Pin Diameter Inches (mm)	C Shackle Thickness Inches (mm)	D Inches (mm)	Ultimate Strength (kN)
7/8" (22.2)	5/8" (15.9)	1/2" (12.7)	2-23/32 (69.1)	25,000 (111)

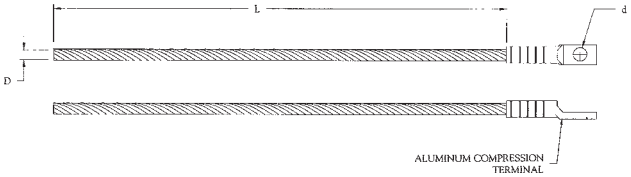
Grounding Wire Assemblies

Catalog Number	Suffix Code	Dimensions Inches L Length	D Conductor Dia.	d Lug Hole Dia.	e Lug Hole Dia.	Conductor Material	Conductor Type	Attachment Ground Bolt Size (supplied w/nut and lock washer)
710010015	G	48 (1.2 m)	.232 (6 mm)	9/16 (14 mm)	-	Copper	#4 (7W)	1/2"-13 x 1-1/2" long
710010293	GA	48 (1.2 m)	.522 (13 mm)	9/16 (14 mm)	-	Aluminum	4/0 (7W)	1/2"-13 x 1-1/2" long
710011205	GA2	60 (1.5m)	.495 (12.5)	17/32 (13.5 mm)	11/16 (17.5 mm)	Aluminum	95 mm² (7W)	M12 x 30 mm long M16 x 38 mm long

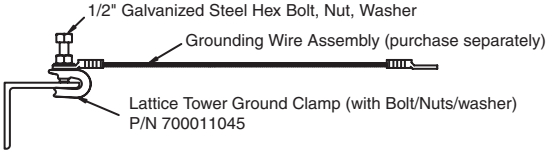
Copper

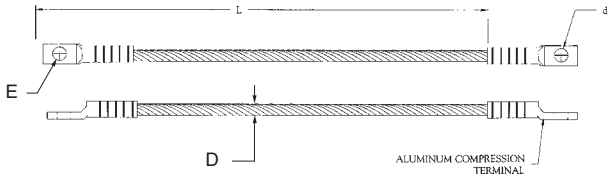


Aluminum



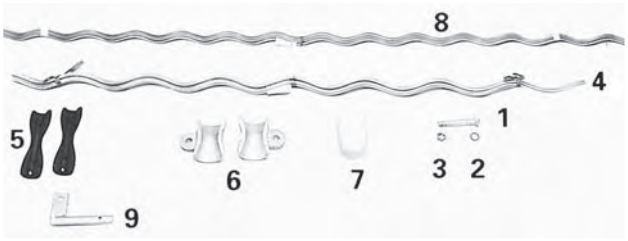
LIGHT DUTY LATTICE TOWER CLAMP
Catalog No. 70001045





FIBERLIGN® Suspension for OPGW

NOMENCLATURE



1. Bolt
2. Lock washer
3. Lock nut
4. Outer Rods
5. Insert
6. Housing
7. Strap
8. Structural Reinforcing Rods
9. Current Transfer Tab (for OPGW only)



SINGLE FIBERLIGN SUSPENSION FOR OPTICAL GROUND WIRE (OPGW)

Bolt, Washer, Lock Nut: Galvanized Steel.

Strap: High-strength Aluminum Alloy.

Insert: An elastomer specifically formulated for resistance to ozone attack, weathering, extreme high and low temperature variations, and compression set. An Aluminum Alloy reinforcement is molded into the elastomer.

Housing: High-strength aluminum alloy casting

Structural reinforcing rods and outer rods: High-strength Aluminum Alloy.

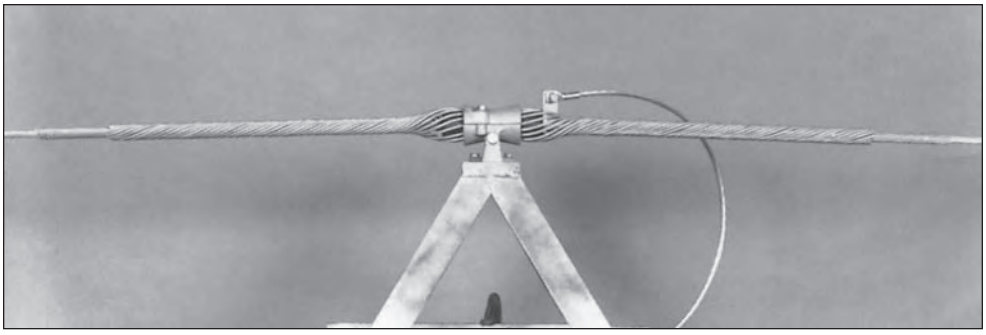
Current Transfer Tab: (Supplied for OPGW Applications only) High Strength Aluminum Alloy.

APPLICATION

The FIBERLIGN Suspension provides superior cable and fiber protection at the support point. The combination of Structural Reinforcing Rods, Outer Rods, boltless housing and resilient inserts reduces compression, clamping, and bending stresses on cable. Negative weather related cable motion, such as aeolian vibration, galloping, and wind sway are also minimized.

The FIBERLIGN Suspension is specially designed for supporting all installations of Optical Ground Wire (OPGW). Due to different performance requirements and cable characteristics OPGW and ADSS cables require different design FIBERLIGN Suspension Units; refer to page 21-15 of the next section for ADSS.

For trunnion or bracket mounting, a FIBERLIGN Trunnion Support for OPGW is available. This unit has a housing designed to fit a trunnion cap or bracket with dimensions consistent with those specified in ANSI C29.7-1986, Class 57. Consult PLP® for specific information.



Trunnion mount FIBERLIGN Support for OPGW

FIBERLIGN® Suspension for OPGW

DOUBLE FIBERLIGN SUSPENSION FOR OPTICAL GROUND WIRE (OPGW)



The Current Transfer Tab provides direct electrical bonding between OPGW and a ground lead. The current transfer tab eliminates current transfer through components of the suspension unit. The standard current transfer tab accommodates left-hand lay OPGW. Right-hand lay and larger units for special applications are also available. Consult PLP for specifics.

The current transfer tab is not required or supplied for ADSS applications.

GROUNDING WIRE ASSEMBLY OPTIONS: A 4' ground wire with compression terminal can be provided. This assembly can be connected from the FIBERLIGN Suspension to the ground lead in your system. Two types of ground wire materials are offered (copper or aluminum). To include the preferred ground wire assembly in the same carton with the current transfer tab, add the appropriate suffix code to the suspension catalog number (see table on next page).

ULTIMATE VERTICAL STRENGTH & HOUSING & FITTING DIMENSIONS: Refer to dimensional table in this section.

LAY DIRECTION: Left-hand lay is standard although FIBERLIGN Suspension or Support units for OPGW may be used on right-hand lay OPGW at reduced slip loads, or custom ordered right-hand lay units are available.

SLIP LOAD: When initially installed, the FIBERLIGN Suspension has a slip load of approximately 10-20% of a standard OPGW rated strength, but significantly higher loads can be expected after the unit has been in service for a period of time.

LINE ANGLES: The maximum recommended line angle for a single FIBERLIGN Suspension is 30°. For OPGW line angles between 30° and 60°, the FIBERLIGN Suspension: Double is recommended, although double dead-ending is another option. Double units for ADSS cable are available on custom order although double dead-ends are also an option.

FITTINGS: An appropriate fitting such as a Y-clevis or clevis eye may be required to attach the Suspension unit to the structure or other hardware. These fittings must match the dimensions of the suspension housing. (See dimensional tables on page 20-12)

FITTING SUFFIX CODES: To include the Y-clevis and clevis-eye fittings in the same carton with the suspensions, add the appropriate suffix code to the suspension catalog number (see table on next page).

COMPONENT REUSE: Once installed, do not reuse the rod components. The hardware components may be reused as desired as long as they are in good condition. Do not modify any components.

FIBERLIGN® Suspension for OPGW

Single and Double FIBERLIGN Suspensions for OPGW

ORDERING INSTRUCTIONS: Select the appropriate FIBERLIGN Suspension for OPGW from the following table. Consult PLP® for trunnion or bracket type mounting OPGW applications and for the availability of all sizes and designs.

ACCESSORIES AND FITTINGS: Ground wire assemblies and fittings may be included in the same container with the suspension by adding the appropriate SUFFIX CODE from the adjacent table. **Note:** the suffix sequence is grounding wire first and fittings second. Example - 4300100GYC includes a 4300100 single suspension with copper ground wire assembly (G) and Y-clevis eye (YC).

Suffix Code	Description
G	4' (1.2 m) long #4 (7W) Copper with terminal on one end. Catalog #710010015
GA	4' (1.2 m) long 4/0 (7W) Aluminum conductor with terminal on one end. Catalog #710010293
GA2	5' (1.5 m) long 95 mm² (7w) Aluminum Ground wire with terminals at both ends

CAUTION: Determine appropriate material and size wire necessary to provide adequate grounding for your system before ordering the ground wire assemblies. For proper performance and personal safety be sure to select the proper ground wire before application.

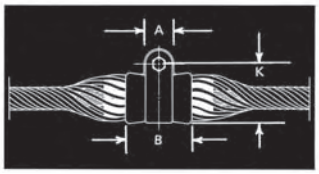
S2	Anchor Shackle (Catalog no 72905002), 25,000#
YC	One (1) Y-clevis to fit selected suspension. Single suspension applications.
CE	One (1) clevis-eye to fit selected suspension. Single suspension applications.
CEYP	Two (2) clevis-eyes with yoke plate to fit selected suspension. Double suspension applications.

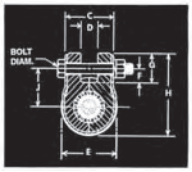
Catalog Number		Diameter Range				Structural Reinforcement Rods					Outer Rods				
Single	Double	Min. (in)	Max. (in)	Min. (mm)	Max. (mm)	Single Length (inches)	Double Length (inches)	Rod Dia. (inches)	Rods per set	Color Code	Single Length (inches)	Double Length (inches)	Rod Dia. (inches)	Rods per set	Color Code
4300100	4300200	.354	.381	8.9	9.6	66	84	.146	9	Blue	42	60	.204	11	Blue
4300101	4300201	.382	.398	9.7	10.1	66	84	.146	9	Green	42	60	.204	11	Green
4300102	4300202	.399	.418	10.2	10.6	66	84	.146	10	Yellow	42	60	.204	11	Yellow
4300103	4300203	.419	.439	10.7	11.1	67	84	.146	10	Black	42	60	.204	11	Black
4300104	4300204	.440	.458	11.2	11.6	68	84	.146	11	White	43	61	.204	11	White
4300105	4300205	.459	.461	11.7	11.7	72	90	.167	10	Purple	46	64	.250	10	Orange
4300106	4300206	.462	.476	11.8	12.0	72	90	.167	10	Purple	46	64	.250	10	Purple
4300107	4300207	.477	.503	12.1	12.7	73	90	.146	11	Orange	46	64	.250	10	Orange
4300108	4300208	.504	.511	12.8	12.9	76	90	.146	12	Red	46	64	.250	10	Purple
4300109	4300209	.512	.536	13.0	13.6	76	94	.167	11	Blue	49	67	.250	11	Blue
4300110	4300210	.537	.559	13.7	14.1	77	94	.167	11	Green	49	67	.250	11	Green
4300111	4300211	.560	.565	14.2	14.3	77	94	.167	11	Green	49	67	.250	11	Green
4300112	4300212	.566	.573	14.4	14.5	79	102	.182	11	Black	54	76	.250	12	Black
4300113	4300213	.574	.598	14.6	15.1	79	102	.182	11	Black	54	76	.250	12	White
4300114	4300214	.599	.625	15.2	15.8	81	102	.182	11	Brown	54	76	.250	12	Brown
4300116	4300216	.626	.632	15.9	16.0	94	120	.204	11	Red	63	89	.310	11	Red
4300117	4300217	.633	.666	16.1	16.9	94	120	.204	11	Red	63	89	.310	11	Blue
4300118	4300218	.667	.682	17.0	17.3	94	120	.204	11	Yellow	63	89	.310	11	Green
4300119	4300219	.683	.710	17.4	18.0	94	120	.204	11	Yellow	63	89	.310	11	Yellow
4300120	4300220	.711	.728	18.1	18.4	94	120	.204	12	White	63	89	.310	12	Black
4300121	4300221	.729	.744	18.5	18.8	94	120	.204	12	White	63	89	.310	12	White
4300122	4300222	.745	.750	18.9	18.9	94	120	.204	12	White	63	89	.310	12	White
4300123	4300223	.751	.786	19.0	19.9	94	120	.204	12	Brown	63	89	.310	12	Brown
4300124	4300224	.787	.814	20.0	20.6	100	129	.250	11	Green	72	101	.365	11	Green
4300125	4300225	.815	.845	20.7	21.4	100	129	.250	11	Yellow	72	101	.365	11	Yellow
4300126	4300226	.846	.855	21.5	21.6	100	129	.250	11	Blue	72	101	.365	12	Blue
4300127	4300227	.856	.894	21.7	22.6	100	132	.250	12	Black	80	112	.365	12	Black
4300128	4300228	.895	.907	22.7	22.9	100	132	.250	12	White	80	112	.365	12	White
4300129	4300229	.908	.916	23.0	23.2	100	132	.250	12	Purple	80	112	.365	12	Purple
4300153	4300253	.917	.929	23.3	23.5	100	132	.250	12	Brown	80	112	.365	12	Brown
4300154	4300254	.930	.942	23.6	23.9	100	132	.250	12	Red	80	112	.365	12	Red
4300155	4300255	.943	.977	24.0	24.7	100	132	.250	13	Orange	80	112	.365	13	Orange

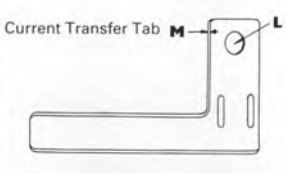
Left-hand lay standard

FIBERLIGN® Suspension Housing Dimensions & Fittings

FIBERLIGN Suspension: Dimensional Tables





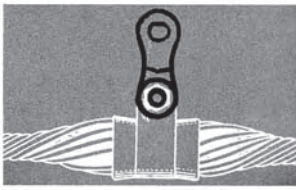


OPGW or ADSS Cable Diameter Range Inches (mm)		Dimensions Inches (mm)													Ultimate Vertical Strength (lbs.)
Min.	Max.	A	B	C	D	E	F	G	H	I	J	K	L	M	
.354 (9)	.458 (11.6)	1-3/4 (44.5)	3-3/4 (95.3)	2-1/4 (57.2)	3/4 (19.1)	2-3/16 (55.6)	1 (25.4)	1-7/8 (47.6)	4-7/16 (112.7)	5/8 (15.9)	2-5/32 (54.8)	3-9/16 (90.5)	5/16 (7.9)	.090 (2.3)	15,000
.459 (11.7)	.565 (14.3)	2 (50.8)	4-17/32 (115.1)	2-11/16 (68.3)	7/8 (22.2)	3-5/16 (84.1)	1 (25.4)	2 (50.8)	5 (127)	5/8 (15.9)	2-11/32 (59.5)	4 (101.6)	9/16 (14.3)	.090 (2.3)	20,000
.566 (14.4)	.625 (15.8)	2 (50.8)	5 (127)	2-15/16 (74.6)	7/8 (22.2)	3-11/16 (93.7)	1 (25.4)	2 (50.8)	5-3/8 (136.5)	5/8 (15.9)	2-17/32 (64.3)	4-3/8 (111.1)	9/16 (14.3)	.090 (2.3)	20,000
.626 (15.9)	.786 (19.9)	2-1/4 (57.2)	5-1/2 (139.7)	3-1/2 (88.9)	1-3/16 (30.2)	4-5/32 (105.6)	1 (25.4)	2-1/8 (54)	5-29/32 (150)	5/8 (15.9)	2-45/64 (68.7)	4-25/32 (121.4)	9/16 (14.3)	.090 (2.3)	25,000
.787 (20)	.977 (24.8)	2-1/4 (57.2)	6 (152.4)	3-5/8 (92.1)	1-1/4 (31.8)	4-13/16 (122.2)	1-1/4 (31.8)	2-3/8 (60.3)	6-11/16 (169.9)	3/4 (19.1)	3-5/32 (80.2)	5-9/16 (141.3)	9/16 (14.3)	.090 (2.3)	25,000
.978 (24.9)	1.016 (25.8)	2-1/4 (57.2)	6-1/2 (165.1)	4-1/8 (104.8)	1-3/8 (34.9)	5-1/16 (128.6)	1-1/8 (28.6)	2-1/4 (57.2)	6-5/8 (168.3)	3/4 (19.1)	2-21/32 (67.5)	5-1/2 (139.7)	N/A	N/A	25,000
1.017 (25.9)	1.057 (26.8)	2-1/4 (57.2)	6-1/2 (165.1)	4-1/8 (104.8)	1-3/8 (34.9)	5-1/16 (128.6)	1-1/8 (28.6)	2-1/4 (57.2)	6-5/8 (168.3)	3/4 (19.1)	2-21/32 (67.5)	5-1/2 (139.7)	N/A	N/A	25,000
1.058 (26.9)	1.079 (27.4)	2-1/2 (63.5)	7 (177.8)	4-11/16 (119.1)	2-1/4 (57.2)	5-19/32 (142.1)	1-1/8 (28.6)	2-3/8 (60.3)	7-1/4 (184.2)	3/4 (19.1)	3-3/16 (81)	6 (152.4)	N/A	N/A	25,000
1.08 (27.5)	1.112 (28.2)	2-1/2 (63.5)	7 (177.8)	4-11/16 (119.1)	2-1/4 (57.2)	5-19/32 (142.1)	1-1/8 (28.6)	2-3/8 (60.3)	7-1/4 (184.2)	3/4 (19.1)	3-3/16 (81)	6 (152.4)	N/A	N/A	25,000
1.113 (28.3)	1.149 (29.2)	2-1/2 (63.5)	7 (177.8)	4-11/16 (119.1)	2-1/4 (57.2)	5-19/32 (142.1)	1-1/8 (28.6)	2-3/8 (60.3)	7-1/4 (184.2)	3/4 (19.1)	3-3/16 (81)	6 (152.4)	N/A	N/A	25,000
1.15 (29.3)	1.19 (30.2)	2-1/2 (63.5)	7 (177.8)	4-11/16 (119.1)	2-1/4 (57.2)	5-19/32 (142.1)	1-1/8 (28.6)	2-3/8 (60.3)	7-1/4 (184.2)	3/4 (19.1)	3-3/16 (81)	6 (152.4)	N/A	N/A	25,000

FITTINGS

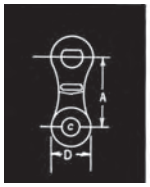
The dimensions of a fitting must correspond to some of the dimensions of the housing of the FIBERLIGN Suspension unit in order to provide proper fit. To select the proper size fitting, identify the outside diameter of the OPGW or ADSS cable and select the appropriate fitting from these tables.

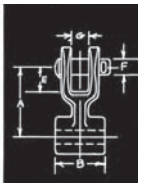
DO NOT use the tables in the ARMOR-GRIP® Suspension section of this catalog.



Clevis Eye

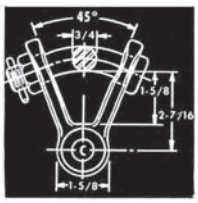
Catalog Number	OPGW or ADSS Cable Diameter Range		General Dimensions							Ultimate Vertical Strength (lbs.)
	Min.-Max. (in)	Min.-Max. (mm)	A in (mm)	B in (mm)	C in (mm)	D in (mm)	E in (mm)	F in (mm)	G in (mm)	
CE-5259	.354-.458	9-11.6	3-1/8 (79.4)	1/2 (12.7)	11/16 (17.5)	1-1/2 (38.1)	1-1/2 (38.1)	5/8 (15.9)	13/16 (20.6)	15,000
CE-5261	.459-.625	11.7-15.9	3-1/8 (79.4)	3/4 (19.1)	11/16 (17.5)	1-1/2 (38.1)	1-1/2 (38.1)	5/8 (15.9)	13/16 (20.6)	20,000
CE-5105	.626-1.057	16.0-26.8	3-1/8 (79.4)	1-1/16 (27)	13/16 (20.6)	1-1/2 (38.1)	1-1/2 (38.1)	5/8 (15.9)	13/16 (20.6)	25,000
CE-5106	1.058-1.208	26.9-30.7	3-1/8 (79.4)	2-1/8 (54)	13/16 (20.6)	1-1/2 (38.1)	1-1/2 (38.1)	5/8 (15.9)	13/16 (20.6)	25,000

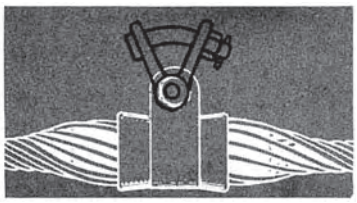




Y-CLEVIS EYE



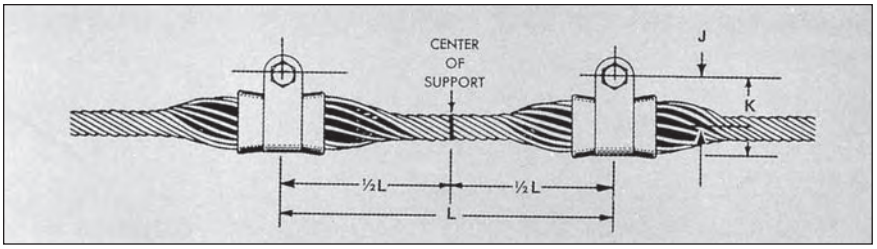




Catalog Number	OPGW or ADSS Cable Diameter Range		General Dimensions		Ultimate Vertical Strength (lbs.)
	Min.-Max. (in)	Min.-Max. (mm)	B in (mm)	C in (mm)	
YC-5206	.354-.458	9.0-11.6	5/8 (15.9)	11/16 (17.5)	15,000
YC-5207	.459-.625	11.7-15.9	3/4 (19.1)	11/16 (17.5)	20,000
YC-5209	.626-1.057	16.0-26.8	1-1/16 (27)	13/16 (20.6)	25,000
YC-5211	1.058-1.208	26.9-30.7	2-1/8 (54)	13/16 (20.6)	25,000

FIBERLIGN® Suspension Housing Dimensions & Fittings

FIBERLIGN Suspension: Double Dimentional Tables



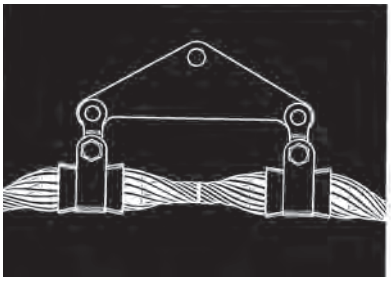
OPGW or ADSS Cable Diameter Range		Dimensions			Ultimate Vertical Strength (lbs.)
Min.-Max. (in)	Min.-Max. (mm)	J in (mm)	K in (mm)	L in (cm)	
.354-.458	9.0-11.6	2-5/32 (54.8)	3-9/16 (90.4)	18 (45.7)	30,000
.459-.565	11.7-14.4	2-11/32 (59.5)	4 (101.6)	18 (45.7)	40,000
.566-.625	14.5-15.9	2-17/32 (64.3)	4-3/8 (111.1)	22 (55.9)	40,000
.626-.786	16.0-20.0	2-45/64 (68.7)	4-25/32 (121.4)	26 (66.0)	50,000
.787-.855	20.1-21.7	3-5/32 (80.2)	5-9/16 (141.3)	29 (73.7)	50,000
.856-1.057	21.8-26.8	2-31/32 (75.4)	5-1/2 (139.7)	32 (81.3)	50,000
1.058-1.208	26.9-30.7	3-3/16 (81.0)	6 (152.4)	37 (94.0)	50,000

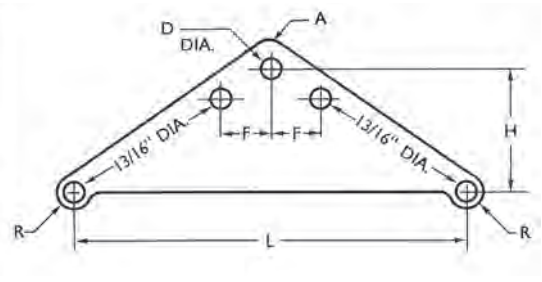
FITTINGS

The "L" dimension of a Yoke Plate must match the "L" dimension between the two housings of the Double Suspension unit. Identify the outside diameter of the OPGW or ADSS cable and select the proper "L" dimension and Yoke Plate from these tables. DO NOT use the tables in the ARMOR-GRIP® Suspension section of this catalog.

A Fitting, such as a Clevis Eye, is required between each Suspension housing and the Yoke Plate. Refer to the tables on page 20-12 for proper fitting selection. Another fitting may be required between the Yoke Plate and structure.

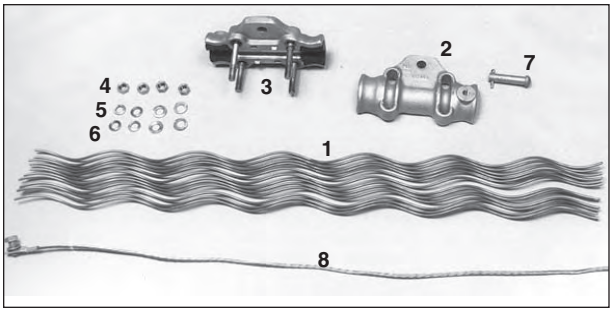
Yoke Plate



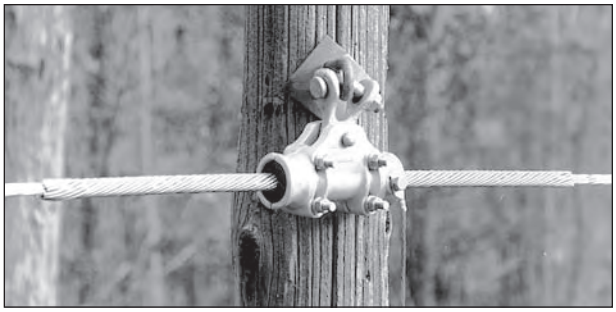


Catalog Number	OPGW or ADSS Cable Diameter Range		Dimensions						Plate Thickness in (mm)
	Min.-Max. (in)	Min.-Max. (mm)	L in (cm)	H in (cm)	D in (mm)	R in (mm)	Radius A in (mm)	F in (cm)	
YP-5908	.354-.565	9.0-14.4	18 (45.7)	6-1/4 (15.9)	1 (25.4)	15/16 (23.8)	1-1/4 (31.8)	3-1/2 (8.9)	5/8 (15.9)
YP-5909	.566-.625	14.5-15.9	22 (55.9)	7-1/4 (18.4)	1 (25.4)	15/16 (23.8)	1-1/4 (31.8)	4-3/16 (10.6)	5/8 (15.9)
YP-5910	.626-.786	16.0-20.0	26 (66.0)	8-1/2 (21.6)	1 (25.4)	15/16 (23.8)	1-1/4 (31.8)	4-15/16 (12.5)	3/4 (19.1)
YP-5911	.787-.855	20.1-21.7	29 (73.7)	9-1/2 (24.1)	1 (25.4)	15/16 (23.8)	1-1/4 (31.8)	5-1/2 (14.0)	3/4 (19.1)
YP-5912	.856-1.057	21.8-26.8	32 (81.3)	10-1/2 (26.7)	1 (25.4)	15/16 (23.8)	1-1/4 (31.8)	6-1/8 (15.6)	3/4 (19.1)
YP-5913	1.058-1.208	26.9-30.7	37 (94.0)	11-3/4 (29.8)	1 (25.4)	15/16 (23.8)	1-1/4 (31.8)	7-1/16 (17.9)	3/4 (19.1)

FIBERLIGN® Cushion Clamp for OPGW



Patent Pending


FIBERLIGN Cushion Clamp installed

NOMENCLATURE

1. **Structural Reinforcing Rods:** High strength aluminum alloy.
2. **Cushion Clamp (keeper half):** An aluminum alloy clamp half with two factory installed elastomer cushion inserts and a 1/2"-13 female threaded boss for ground wire attachment. A galvanized 1/2"-13 x 3/4" long grounding bolt and lock washer are provided.
3. **Cushion Clamp (U-bolt half):** An aluminum alloy clamp half with two factory installed elastomer cushion inserts and two captured 1/2"-13 galvanized steel U-bolts.
4. **1/2"-13 Hex Nuts (4):** Galvanized steel.
5. **Lock Washers (4):** Galvanized steel.
6. **Flat Washers (4):** Galvanized steel.
7. **Pin and Cotter Key:** Pin is galvanized steel and Cotter Key is stainless steel.
8. **Grounding Wire Assembly (ordered separately)**

APPLICATION

The FIBERLIGN Cushion Clamp provides excellent protection to OPGW at support points. The combination of the Structural Reinforcing Rods and the elastomer inserts at the ends of the clamp body halves reduces bending stresses on the OPGW during aeolian vibration or galloping activity.

Bonding:
Provisions for electrically bonding the OPGW to the supporting structure or ground lead are an integral part of the keeper half. The 1/2"-13 x 3/4" long bolt and lock washer are provided with the keeper half for lug terminal attachment.

Grounding Wire Assembly Options:
A 4' ground wire with compression terminal can be provided. Two types of ground wire material are offered (copper or aluminum). The Ground Wire assemblies may be ordered with the Cushion Clamp by adding the appropriate suffix code (see next page).

Ultimate Vertical Strength & Dimensions:
The ultimate vertical strength of the Cushion Clamp body is 20,000 pounds (89 kN). See the table on page 20-16 for dimension of body and associated fittings.

Lay Direction:
The Cushion Clamp can accommodate either left-hand lay or right-hand lay OPGW.

Slip Load:
The Cushion Clamp has a slip load of approximately 10-20% of the OPGW rated strength.

Line Angles:
The maximum recommended line angle for a single FIBERLIGN Cushion Clamp is 30°. For OPGW line angles between 30° and 60°, the Cushion Clamp double is available, although double dead-ending is another option.

Fittings:
An appropriate fitting such as a Y-Clevis, Clevis-Eye, or Anchor Shackle may be required to attach the Cushion Clamp to the structure or other hardware. To include these fittings, add the appropriate suffix code to the catalog number (see next page).

Component Reuse:
Once installed, do not reuse the Structural Reinforcing Rods. The hardware components may be reused as long as they are in good condition. Do not modify any components.

FIBERLIGN® Cushion Clamp for OPGW

Single and Double Fiberlign Cushion Clamp for OPGW

ORDERING INSTRUCTIONS: Select the appropriate FIBERLIGN Cushion Clamp for OPGW from the following table.

ACCESSORIES AND FITTINGS: Ground wire assemblies and fittings may be ordered with the Cushion Clamp by adding the appropriate SUFFIX CODE from the adjacent table. Note: the suffix sequence is ground wire first and fittings second. Example - 4700100GYC includes a 4700100 Single Cushion Clamp with copper ground wire assembly (G) and Y-Clevis (YC).

Suffix Code	Description (m)
G	4' (1) long #4 (7W) Copper Ground Wire with terminal on one end. Catalog No. 710010016
GA	4' (1) long 4/0 (7W) Aluminum Ground Wire with terminal on one end. Catalog No. 710010294
GA2	5' (1.5) long 95 mm^2 (7w) Aluminum Ground Wire with terminals at both ends

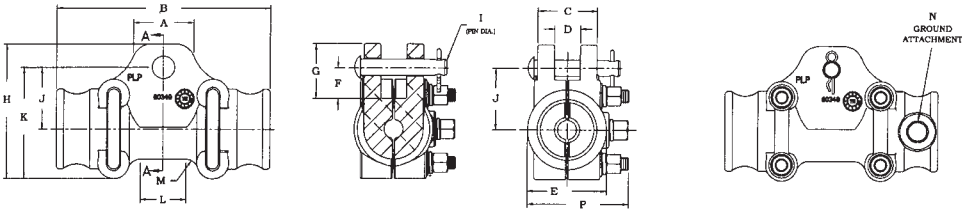
CAUTION: Determine appropriate material and size wire necessary to provide adequate grounding for your system before ordering the ground wire assemblies. For proper performance and personal safety be sure to select the proper ground wire before application.

S2	Anchor Shackle (Catalog no 72905002), 25,000#
YC	One (1) Y-clevis to fit selected suspension. Single suspension.
CE	One (1) clevis-eye to fit selected suspension. Single suspension.
CEYP	Two (2) clevis-eyes with yoke plate to fit selected suspension. Double suspension.
GA2	5' (1.5) long 95 mm^2 (7w) Aluminum Ground wire with terminals at both ends.

Catalog Number		Diameter Range				Structural Reinforcing Rods				Color Code
Single	Double	Min. (in)	Max. (in)	Min. (mm)	Max. (mm)	Single Length	Double Length	Rod Dia.	Rods per Set	
4700100	4700200	0.376	0.387	9.6	9.8	31	60	0.204	7	Orange
4700101	4700201	0.388	0.429	9.9	10.9	32	61	0.182	8	Red
4700102	4700202	0.430	0.459	11.0	11.6	33	62	0.167	9	Black
4700103	4700203	0.460	0.482	11.7	12.2	34	63	0.154	10	Green
4700104	4700204	0.483	0.507	12.3	12.8	35	64	0.182	10	Yellow
4700105	4700205	0.508	0.537	12.9	13.6	36	65	0.167	11	Purple
4700106	4700206	0.538	0.563	13.7	14.3	37	66	0.154	12	Pink
4700107	4700207	0.564	0.585	14.4	14.8	39	68	0.182	11	Brown
4700108	4700208	0.586	0.615	14.9	15.6	40	69	0.167	12	Blue
4700109	4700209	0.616	0.641	15.7	16.3	41	70	0.154	13	Orange
4700110	4700210	0.642	0.664	16.4	16.8	44	73	0.182	12	Red
4700111	4700211	0.665	0.694	16.9	17.6	45	74	0.167	13	Black
4700112	4700212	0.695	0.720	17.7	18.3	46	75	0.154	15	Green
4700113	4700213	0.721	0.742	18.4	18.8	48	77	0.182	13	Yellow
4700114	4700214	0.743	0.772	18.9	19.6	50	79	0.167	14	Purple
4700115	4700215	0.773	0.798	19.7	20.2	51	80	0.154	15	Pink
4700116	4700216	0.799	0.822	20.3	20.8	52	81	0.182	14	Brown
4700117	4700217	0.823	0.855	20.9	21.7	54	83	0.167	16	Blue
4700118	4700218	0.856	0.885	21.8	22.4	55	84	0.146	19	Orange
4700119	4700219	0.886	0.911	22.5	23.1	56	85	0.167	16	Red
4700120	4700220	0.912	0.941	23.2	23.9	57	86	0.154	19	Black
4700121	4700221	0.942	0.975	24.0	24.7	58	87	0.146	20	Green
4700122	4700222	0.976	1.005	24.8	25.5	60	89	0.167	18	Yellow
4700123	4700223	1.006	1.034	25.6	26.3	61	90	0.154	20	Purple

FIBERLIGN® Cushion Clamp for OPGW

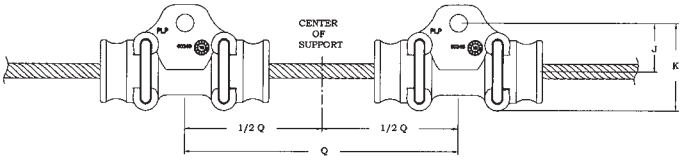
FIBERLIGN Cushion Clamp Dimensions



Section View A-A

Dimensions Inches (mm)															Ultimate Vertical Strength (Single) lbs.
A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	
2-23/64 (59.9)	8-11/32 (211.9)	2-11/32 (59.5)	59/64 (23.4)	3-7/64 (79.0)	1-5/32 (29.4)	2-1/8 (54.0)	5-1/4 (133.4)	5/8 (15.9)	2-11/32 (59.5)	3-41/64 (92.5)	1-25/32 (45.2)	31/64 (12.3)	1/2-13 UNC	3-15/16 (100.0)	20,000

FIBERLIGN Cushion Clamp: Double

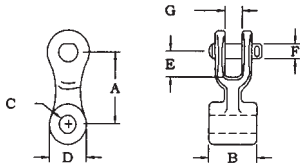


Dimension Q Inches (cm)	Ultimate Vertical Strength (Double) lbs.
22 (55.9)	40,000

Fittings & Yoke Plate

Clevis Eye

Catalog Number	Dimensions Inches (mm) A	B	C	D	E	F	G	Ultimate Vertical Strength (lbs.)
CE-5261	3-1/8 (79.4)	3/4 (19.1)	11/16 (17.5)	1-1/2 (38.1)	1-1/2 (38.1)	5/8 (15.9)	13/16 (20.6)	20,000

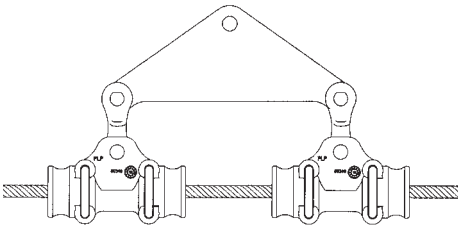


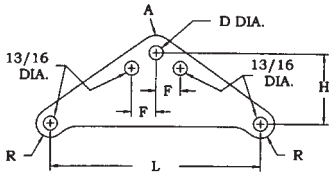
Yoke Plate

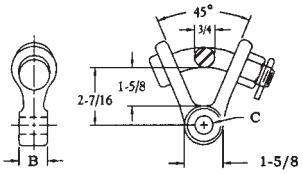
Catalog Number	Dimensions Inches (mm) L	H	D	R	Radius A	F	Plate Thickness
YP-5909	22 (55.9 cm)	7-1/4 (18.4 cm)	1 (25.4 mm)	15/16 (23.8 mm)	1-1/4 (31.8 mm)	4-3/16 (10.6 cm)	5/8 (15.9 mm)

Y-Clevis Eye

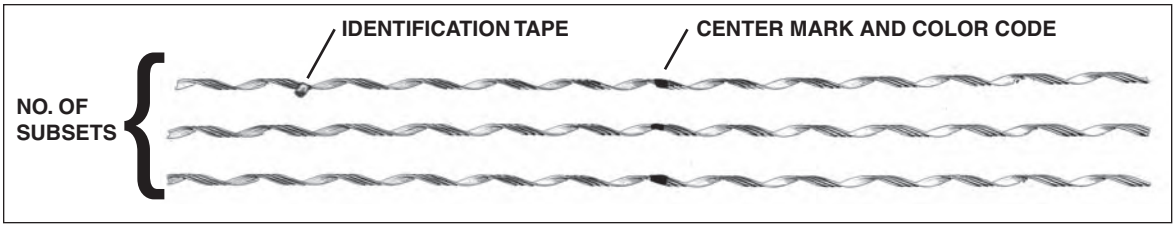
Catalog Number	Dimensions Inches (mm) B	C	Ultimate Vertical Strength (lbs.)
YC-5207	3/4 (19.1)	11/16 (17.5)	20,000







FIBERLIGN® Repair Rods for OPGW



NOMENCLATURE

Subsets: Individual aluminum clad steel rods assembled into groups. The bore is coated with conductive grit.

Center Mark: Establishes recommended alignment of rods during application.

Color code: Provides identification for application of OPGW size that corresponds to the information appearing in the table below.

Identification Tape: Shows catalog number, nominal sizes.

GENERAL RECOMMENDATIONS

FIBERLIGN Repair Rods are designed as a single-component, outer layer assembly for use on OPGW and are intended for repair of the outer mechanical strand members on an OPGW cable. **This is not an optical repair product.**

These OPGW Repair Rods are not designed or tested as splices for use on all-metal overhead shield wire and are not intended for that application.

Restorative-Repair: These Repair Rods will provide varying levels of mechanical and electrical repair depending upon the specific construction, stranding and material of the OPGW.



The extent of mechanical damage that the product can repair for single layer OPGW is up to 50% of the cable rated strength. The 50% rating is established by PLP® based on repair rod performance. Contact the OPGW cable manufacturer to verify the extent of damage that the specific cable design can survive without jeopardizing the performance of the fiber optic elements. If the cable manufacturer limits the repair level to lower than 50%, limit the use of the repair rod to the lower level for that specific cable. Consult PLP for further details.

Lay direction of the Repair Rods should be the same as the outer strands of the OPGW. Left-hand lay is standard, consult PLP for right-hand lay designs.

Repair Rods					
Catalog Number	Diameter Range (inch)	Diameter Range (mm)	Color Code	Length in.	Length M
3600100	.354-.385	8.9-9.7	Red	45	1.14
3600101	.386-.422	9.8-10.7	Black	48	1.22
3600102	.423-.460	10.8-11.6	Orange	50	1.27
3600103	.461-.505	11.7-12.8	Green	54	1.37
3600104	.506-.550	12.9-13.9	Blue	61	1.55
3600105	.551-.602	14.0-15.2	Yellow	65	1.65
3600106	.603-.660	15.3-16.7	Brown	70	1.78
3600107	.661-.719	16.8-18.2	Purple	74	1.88
3600108	.720-.785	18.3-19.9	Pink	80	2.03
3600109	.786-.850	20.0-21.5	Red	86	2.18
3600110	.851-.933	21.6-23.6	Black	94	2.39
3600111	.934-1.020	23.7-25.9	Orange	102	2.59

Left-hand lay standard

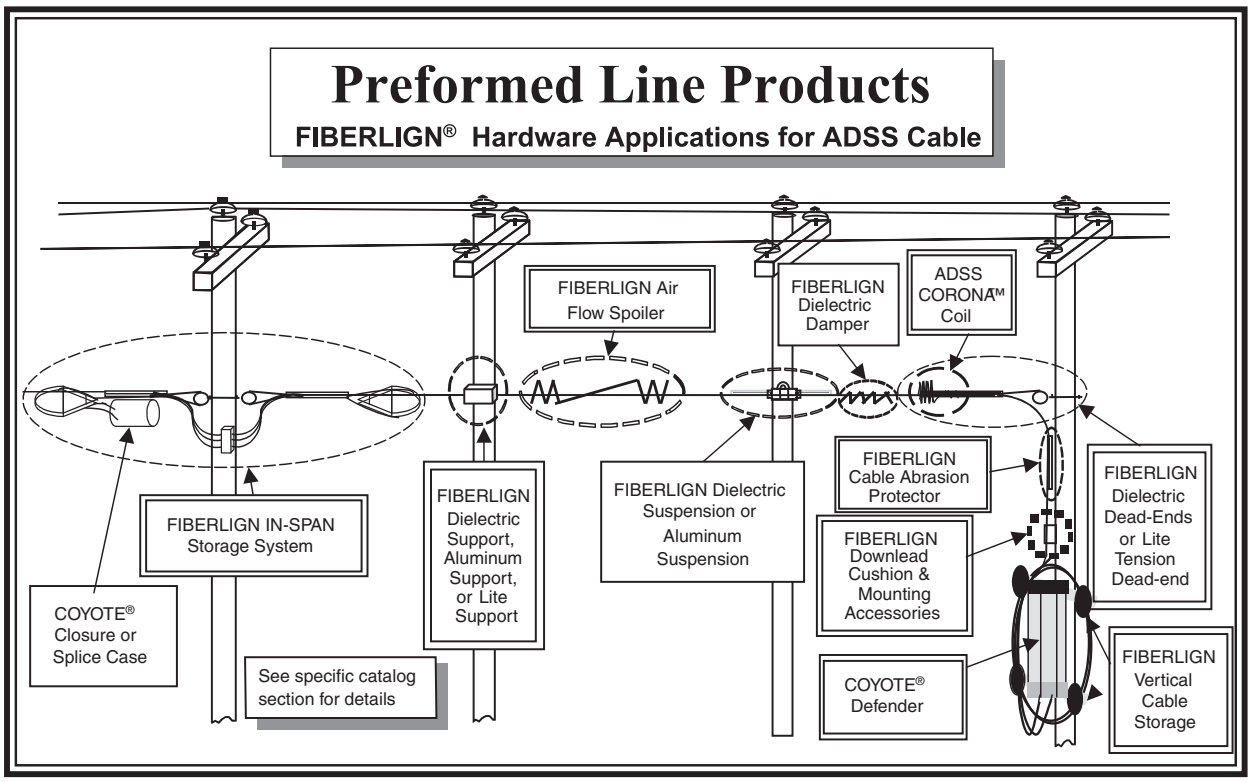
PREFORMED LINE PRODUCTS

Section 21 – Fiber Optics: FIBERLIGN® Hardware for ADSS

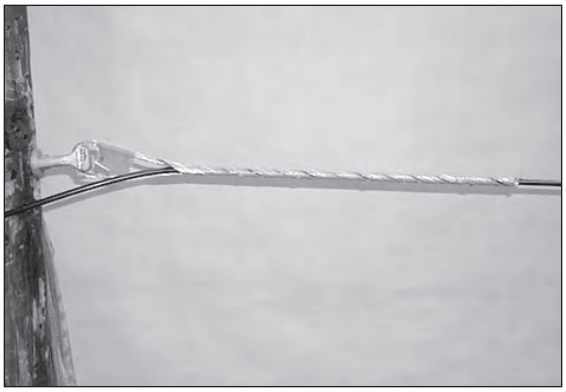
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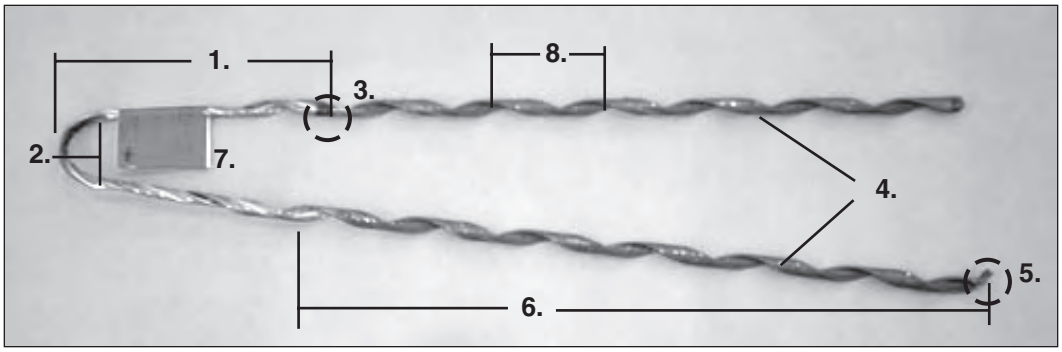
ADSS Product Layout



FIBERLIGN® Lite Tension Dead-end for ADSS



FIBERLIGN® Lite Tension Dead-end for All Dielectric Self-Supporting (ADSS) Fiber Optic Cable Installed



NOMENCLATURE

1. **Loop length:** Length from the color mark to the end of the loop.
2. **Loop diameter:** The loop has a formed diameter designed to interface with standard fittings
3. **Color mark:** The dead-end color mark or crossover mark locates the beginning of dead-end contact with the cable during installation. It is used for identification as well.
4. **Dead-end legs:** The legs wrap onto the cable beginning at the crossover mark.
5. **Flared rod ends:** Special rod end treatment to prevent jacket damage.
6. **Latex coating:** Pliable coating applied over the dead-end legs.
7. **Product ID Tag:** Red Tag includes product description and application information.
8. **Pitch length:** The distance along the leg that represents one complete wrap of the formed helix around the circumference of the cable (360 degrees).

APPLICATION

The FIBERLIGN Lite Tension Dead-end is a dielectric dead-end designed to terminate short span, low tension ADSS fiber optic cables in low voltage environments. Unlike the Limited, Medium, and High Tension FIBERLIGN® Dielectric Dead-end designs found later in this section, the Lite Tension Dead-end is reduced to a single layer component that offers an economical solution for very light loads. The product effectively transfers the low axial load on the cable at the end of the dead-end legs to low uniform radial compression near the dead-end loop.

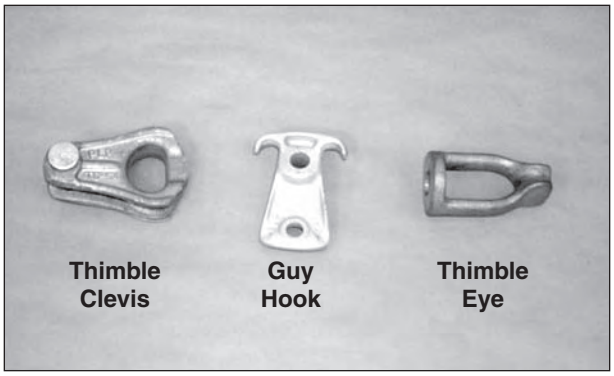
Superior Fatigue Strength: The small diameter wires that comprise each dead-end are a mixture of aluminum and aluminum clad steel to assure long term performance.

FIBERLIGN® Lite Tension Dead-end for ADSS

Dead-end performance depends upon a number of factors including cable brand and design, tension load requirements, temperature and environmental operating conditions among others.

The FIBERLIGN Lite Tension Dead-end has a pliable latex coating and flared rod end treatment that avoids possible damage to the cable jacket during and after installation.

ATTACHING TO THE STRUCTURE: The loop diameter of the Lite Tension Dead-end will fit over a minimum diameter of 1.5" (38mm) and a maximum diameter of 2-1/4" (57 mm). The Lite Tension Dead-end is designed to accept common guy wire dead-end pole fittings like thimble eyes and guy hooks.



Appropriate Fittings

The extended loop of the dead-end reduces the need for an extension link; however, PLP can provide other FIBERLIGN® fittings including extension links (with thimble clevis) if desired. PLP offers the TC-5F Thimble Clevis, Thimble Eye, and LCE-55-14 Extension Link.

In general, Lite Tension Dead-ends are intended for use with these conditions and limitations:

- Light Tensions, approximately:
  -600# (2.7 kN) maximum initial (stringing/nominal axial/long-term) tension
  -800# (3.5 kN) maximum loaded (working/loaded axial/short- term) tension
- Short Spans:
  -300' (91 m) maximum spans
  -not recommended for critical crossing spans (highways, rivers, etc.) see Medium or High Tension Dead-ends
- Very low strength cables
- "Standard" jackets
- Most cable brands
- No excessive operating conditions, cable motion or high temperatures

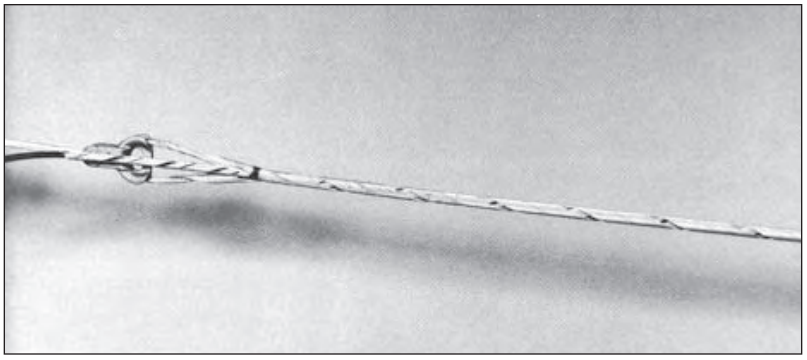
Lite Tension Dead-end features:

- Standard design parameters
- Broad cable OD ranges, listed on ID tags
- Economical single component design
- Optimized compact length
- Fast easy installation
- Accepts standard pole line fittings
- Latex coated with flared rod ends
- Uniform pressure design
- Superior fatigue strength wire design

Catalog* Number	Cable Diameter Range				Color Code	Overall Length	
	Min (in)	Max (in)	Min (mm)	Max (mm)		inches	meter
2875001	.375	.414	9.5	10.5	Red	28	.71
2875002	.415	.459	10.6	11.6	Orange	31	.79
2875003	.460	.505	11.7	12.8	Green	33	.84
2875004	.506	.557	12.9	14.1	Pink	37	.94
2875005	.558	.615	14.2	15.6	Yellow	42	1.07
2875006	.616	.680	15.7	17.3	Blue	45	1.14
2875007	.681	.750	17.4	19.1	Brown	49	1.24

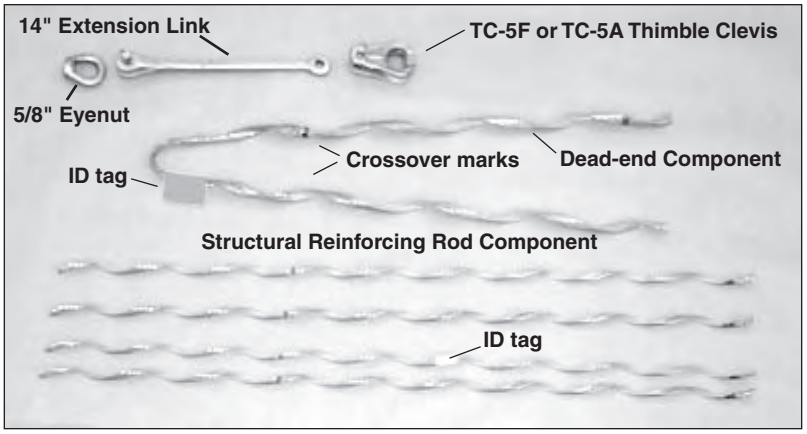
*Add suffix code TE to include Thimble Eye (Cat. No. TE-5) Number - Mount with 5/8" or 16 m bolt and nut

FIBERLIGN® Dielectric Dead-end for ADSS



FIBERLIGN Dielectric Dead-end installed

NOMENCLATURE



GENERAL INFORMATION

The FIBERLIGN Dielectric Dead-end product line has been designed to securely but gently terminate All Dielectric Self-Supporting (ADSS) aerial fiber optic cable. A two component design consisting of appropriate size and length of Structural Reinforcing Rods and dead-end component is required to transfer axial tensile loads and distribute radial compressive forces through the plastic jacket and onto the internal strength members without damaging the fragile plastic jacket or internal optical fibers.

APPLICATION & PRODUCT SELECTION

Specific dead-end design and performance depends upon a number of factors such as cable brand and design, strength member construction, jacket type, tension load requirements, temperature and environmental operating conditions, and so on. Due to these factors, three types of dead-ends are offered:

- Limited Tension Dielectric Dead-ends
- Medium Tension Dielectric Dead-ends
- High Tension Dielectric Dead-ends

Limited Tension Dead-ends:
Intended for relatively low tension application usually associated with short span construction. They are not cable or line design specific but are designed to fit broad diameter ranges. Holding performance will vary by specific cable brand and operating conditions. Therefore, no specific holding strength rating is possible.

In general, Limited Tension Dead-ends are intended for use with these conditions and limitations:

- Low tensions, approximately:
  -1,000# (4.4kN) maximum initial (stringing/nominal axial/long-term) tension -2,500# (11.1 kN) maximum loaded (working/loaded axial/short-term) tension
- Short spans:
  -300' - 600' (91-183 m) typical maximum spans depending upon cable OD and tensions
  -not recommended for critical crossing spans (highways, rivers, etc.); see Medium or High Tension Dead-ends
- Low strength cables
- “Standard” jackets
- Most cable brands
- No excessive operating conditions, cable motion or high temperatures

FIBERLIGN® Dielectric Dead-end for ADSS

Limited Tension Dead-ends: (continued)
Limited Tension Dead-end features:

- Standard design parameters
- Broad cable OD ranges, listed on ID tags
- Short Structural Reinforcing Rods
- Short dead-end component
- Structural Reinforcing Rods and Dead-end components packaged in same carton.
- Fast, easy installation
- Utilizes economical TC-5F Thimble Clevis

Limited Tension Dead-ends				
Catalog Number*	Cable O.D. Range (inch)	Cable O.D. Range (mm)	Overall Length in. (m)	Color Code
2872001	.400-.424	10-11	48 (1.2)	Black
2872002	.425-.451	11-11	48 (1.2)	Yellow
2872003	.452-.481	12-12	48 (1.2)	Green
2872004	.482-.510	12-13	48 (1.2)	Orange
2872005	.511-.542	13-14	48 (1.2)	Blue
2872006	.543-.577	14-15	48 (1.2)	White
2872007	.578-.613	15-16	48 (1.2)	Red
2872008	.614-.651	16-17	48 (1.2)	Black
2872009	.652-.692	17-18	48 (1.2)	Yellow
2872010	.693-.737	18-19	48 (1.2)	Green
2872011	.738-.784	19-20	48 (1.2)	Orange
2872012	.785-.834	20-21	48 (1.2)	Blue
2872013	.835-.889	21-23	48 (1.2)	White
2872014	.890-.945	23-24	48 (1.2)	Red
2872015	.946-1.007	24-26	48 (1.2)	Black
2872016	1.008-1.073	26-27	60 (1.5)	Yellow
2872017	1.074-1.140	27-29	60 (1.5)	Green
2872018	1.141-1.212	29-31	60 (1.5)	Orange
2872019	1.213-1.288	31-33	60 (1.5)	Blue

*To include accessories in same carton, add suffix code(s) to Dead-end catalog number. Example: Cat. No. 2872001C1E1 includes Dead-end #2872001, TC-5F Thimble Clevis and Extension Link #71002366 in the same carton. See Dielectric Dead-end accessories in this section.

CAUTION: Some ADSS cables are not suitable for use with Limited Tension Dead-ends. Limited Tension Dead-ends are not recommended for track-resistant jacket applications. Consult PLP for specifics.

Medium Tension Dead-ends:
Designed for medium tension applications. Holding performance will vary by specific cable brand and operating conditions; therefore no, specific holding rating is possible.

In general, Medium Tension Dead-ends are intended for use with these conditions:

- Moderate tensions, approximately -2,000# (8.9 kN) maximum initial (everyday/stringing) tension -4,000# (17.8 kN) maximum loaded (short-term/working) tension maximum span length is dependent on cable O.D. and tensions
- For “standard” and most “track-resistant” jacket types of ADSS cables. (Contact PLP to verify acceptable track-resistant cable.)
- For severe operating temperatures and conditions
- Structural Reinforcing Rod length ranges from 85" to 105" (2.2 m — 2.7 m)

Medium Tension Dead-end features:

- Standard design parameters
- Broad cable OD ranges, listed on ID tags
- Moderate length
- Structural Reinforcing Rods and Dead-end components packaged in same carton
- Utilize TC-5F (or TC-6F) Thimble Clevis
- Accessories can be ordered with Dead-end components using suffix codes

Medium Tension Dead-ends				
Catalog Number	Cable O.D. Range (inch)	Cable O.D. Range (mm)	Overall Length in. (m)	Color Code
2872100	.482-.510	12-13	85 (2.2)	Orange
2872101	.511-.542	13-14	85 (2.2)	Blue
2872102	.543-.577	14-15	85 (2.2)	White
2872103	.578-.613	15-16	85 (2.2)	Red
2872104	.614-.651	16-17	85 (2.2)	Black
2872105	.652-.692	17-18	85 (2.2)	Yellow
2872106	.693-.737	18-19	85 (2.2)	Green
2872107	.738-.784	19-20	85 (2.2)	Orange
2872108	.785-.834	20-21	90 (2.3)	Blue
2872109	.835-.889	21-23	90 (2.3)	White
2872110	.890-.945	23-24	95 (2.4)	Red
2872111	.946-1.007	24-26	95 (2.4)	Black
2872112	1.008-1.073	26-27	97 (2.5)	Purple
2872113	1.074-1.140	27-29	100 (2.5)	Pink
2872114	1.141-1.212	29-31	103 (2.6)	Brown
2872115	1.213-1.288	31-33	105 (2.7)	Orange

FIBERLIGN® Dielectric Dead-end for ADSS

High Tension Dead-ends:
Custom designed and manufactured for more stringent holding requirements and operating conditions than Limited and Medium Tension Dead-ends. Holding performance will vary depending upon the specific cable brand and operating conditions, therefore no general holding strength rating is possible. Consult PLP® for the proper dead-end application.

In general, High Tension Dead-ends are intended for use with these conditions:

- High tensions, approximately
  - over 2,000# (8.9 kN) initial (everyday/stringing) tension
  - over 4,000# (17.8 kN) loaded tension
- Long spans - varies according to cable OD and tensions
- High strength circular cables
- "Standard" and "track resistant" jackets
- All cable brands
- Selection and design considers excessive operating conditions, cable motion and high temperature environments

High Tension Dead-end features:

- Custom design parameters
- Designed for specific cable diameter and OD ranges, listed on ID tags
- Custom length Structural Reinforcing Rods and Dead-ends to match tension applications
- Structural Reinforcing Rods and Dead-end components packaged in same carton
- Utilizes either ATC-20M and TC-6F Thimble Clevis
- Accessories can be ordered with Dead-end components using suffix codes

Figure 8 Fiber Optic Cable:
For All-Dielectric messengers, the messenger with jacket intact is separated from the fiber bundle and a two piece Dielectric Dead-end is applied over the jacketed messenger. For metallic messengers, a conventional strand dead-end is applied directly to the bare messenger. Consult PLP for specifics for either style messenger.

Component Reuse:
Once installed, the structural reinforcing rods and formed dead-end components may be removed and reinstalled once for repositioning purposes; do not reuse after this initial installation. The hardware may be reused as desired if in good condition. Do not modify any component.

Ordering Instructions:
For Limited Tension and Medium Tension Dead-ends, use the appropriate table in this section if your installation meets the restrictions for this product. For all other dead-ends, contact PLP with cable specifications, line design details and advise of unusual operating conditions or high temperature environments so that proper dead-end designs can be selected.

To have accessories included with any Dead-end, add the appropriate suffix to the dead-end catalog number. Example: #2872001C1E1 includes Dead-end #2872001, Thimble Clevis TC-5F and Extension Link kit. See next page for available accessories.

FIBERLIGN® Dielectric Dead-end for ADSS

All Dielectric Dead-ends require a proper size and strength Thimble Clevis and may utilize an Extension Link.

To include accessories with dead-end, add suffix code(s) to Dead-end catalog number.

Thimble Clevis:
Limited and Medium Tension Dead-ends require the Catalog No. TC-5F Thimble Clevis (Rated Strength 26,900# (119 kN)) suffix Code "C1" or Cat No. TC-5A Thimble Clevis (Rated Strength 12,000# (53 kN)). The galvanized ductile iron #TC-5F is standard with a 2-1/4" minimum seat and 7/8" minimum groove diameter. The aluminum #TC-5A is optional with the same dimensional characteristics.

High Tension Dead-ends require at least the 20,000# (89 kN) ATC-20M Thimble Clevis (code C2) or equal with 3" minimum seat and 1-1/2" minimum groove diameters. For higher loads, use the 42,400# (188 kN) TC-6F (code C4) galvanized iron Thimble Clevis or equal with 2-1/2" minimum seat diameter and 1-1/16" minimum groove diameter.

Extension Link:
An optional 15,000# (67 kN) 14" (356 mm) Extension Link with 5/8" Eye Nut (Cat. #71002366, code E1) is suggested and sometimes recommended by cable suppliers to increase the cable bending radius and reduce stress to the optical fibers at Dead-end locations. This link kit can be used with any type FIBERLIGN Dielectric Dead-end.

For higher loads, use the 25,000# (111 kN), 14" (356 mm) Extension Link (Cat.# LCE-66-14 or P/N 00060132 or code E2).

Loads up to 36,000 pounds can be handled with Cat. No. 000601325 (not shown).

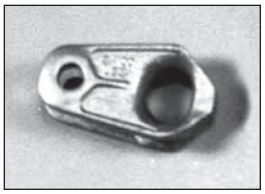
Banding Bracket:
Dielectric Dead-ends can be banded to concrete or steel structures using the 12Klb Banding Bracket Kit (Cat. #710010745, code B1). The kit includes a 5/8"-11x2" long bolt, lockwasher, hex nut and banding bracket. This connects to the Extension Link with 5/8" eye nut referenced above (Cat #71002366). The bracket is rated for 12,000# (53 kN) and should be used with two high strength 1-1/4" steel bands (not supplied).



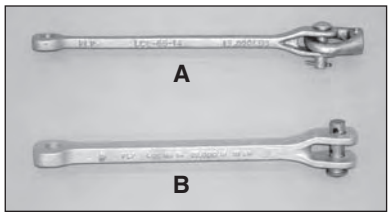
TC-5F Thimble Clevis
(Code C1)



ATC-20M Thimble Clevis
(Code C2)

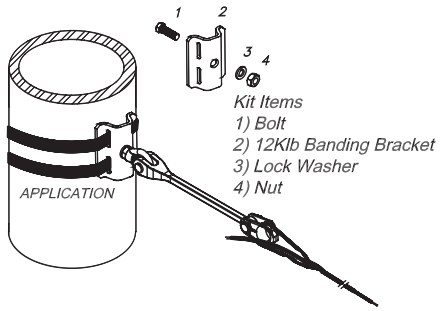


TC-6F Thimble Clevis
(Code C4)



(A) 14" Extension Link with Eye Nut, 15K
(Cat. No. 71002366, code E1)

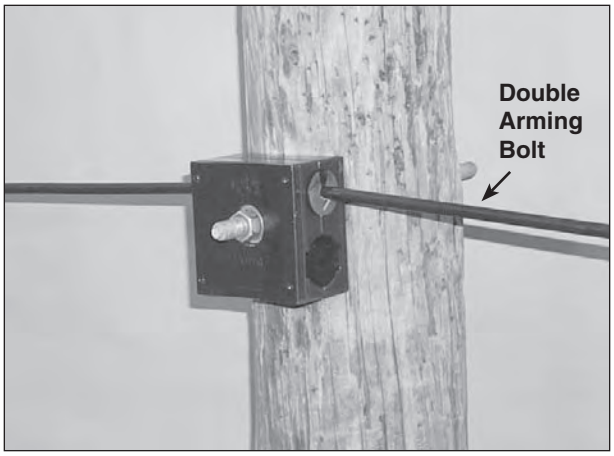
(B) 25K EXTENSION LINK
(Cat. No. LCE-66-14, code E2)



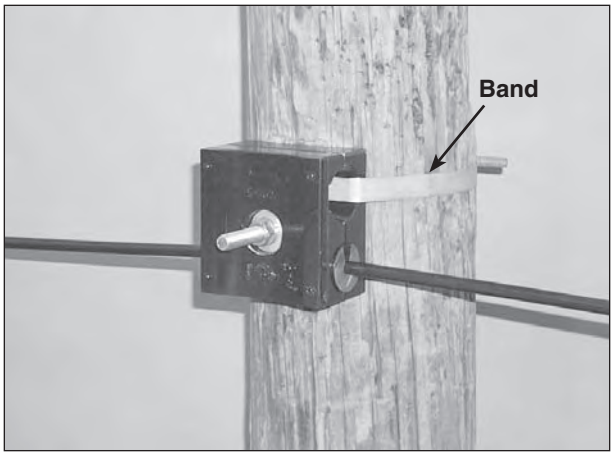
12Klb Banding Bracket Kit
(Cat. No. 710010745, code B1)

FIBERLIGN® Light Support for ADSS

FIBERLIGN Lite Support for All Dielectric Self-Supporting (ADSS) Fiber Optic Cable—Bolt Mounted



FIBERLIGN Lite Support for All Dielectric Self-Supporting (ADSS) Fiber Optic Cable—Band Mounted



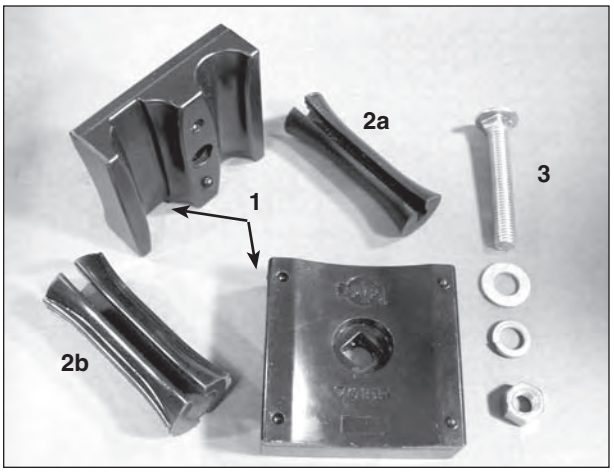
NOMENCLATURE

1. Housing Halves:
Urethane housings have molded cavities to accept cushion inserts. The small cavity accepts a small insert (Item 2a). The large cavity is designed for stringing in cable, capable of handling up to a 1-1/4" (32 mm) diameter mechanical swivel with pulling in grip. The large cavity will accept a large insert (Item 2b) for larger cables or if a dual cable application is desired.

2. Insert:
Softer material than the housing (item 1), one piece inserts are slotted to accept the cable as well as cushion the cable under load. The cable diameter range is molded along the hinge opposite the open slot for identification. The small insert (Item 2a) will accept cable sizes up to .700" (17.8 mm) diameter. The large insert (Item 2b) will accept cable sizes up to 1.03" (26 mm) diameter.

3. Hardware Kit (optional) for Banded Mount:
A 5/8"-11 UNC by 4" long carriage bolt, 5/8" round washer, Lock Washer, and 5/8"-11 UNC nut can be provided for banding applications. (Cat. No. 4800500)

FLS



FIBERLIGN® Light Support for ADSS

APPLICATION

The FIBERLIGN Lite Support (FLS) system is designed to gently but firmly support All Dielectric Self-Supporting (ADSS) cable. It is intended for tangent support installations (see "LINE ANGLES") on lines that feature low voltages, very short spans and low mechanical loads. For products with higher capabilities see the subsequent pages under FIBERLIGN® Dielectric Support, FIBERLIGN Aluminum Support, FIBERLIGN Aluminum Suspension, with and without rods and FIBERLIGN Dielectric Suspension. The two latter products can be used in higher voltage environments where track resistant ADSS cables are required.

Dual Insert Application:
The FLS with small and large inserts can support two cables. Existing FIBERLIGN Dielectric Support (FDS) installations (up to 300' spans) can be replaced or "retrofitted" using the FLS. This option increases capability from one to two cables within minimal pole space.

FTTP:
Fiber to the Premisis drop cables can have round, flat and figure 8 construction. Specially designed Lite Support inserts are available to accept all of these configurations. The catalog table includes these new sizes and detailed information can be found in Section 23.

Stacking:
LITE Support Housings are stackable to add more cables within the same pole space. This can offer a neat alternative to busy "J-Hook" clutter for FTTP drop cable distribution.

Maximum Span Lengths – 300 feet (91 m):
The maximum recommended span length for the FLS is dependent upon the specific cable OD, initial cable tension, ice and wind loading district (NESC), and other factors. It is intended for application on short spans where vertical loading does not exceed 1000# (4.4 kN) under the extreme case.

In general, the approximate recommended maximum span length for the FLS is 300 feet (91 m) under extreme loads (NESC Heavy). Consult PLP for specific span limitations.

Material:
The housing halves are made from a high-strength, dielectric urethane material. The cushioned inserts are made from a softer, pliable dielectric material that gently grips and cushions the ADSS cable within the clamped housing. The hardware (optional) for banded applications is zinc plated.

Mounting:
The housing halves are molded with smooth finish holes to accept a standard 5/8" thru-bolt.

Bolt Mount:
For wood pole or bolt mounting to any structure, a thru bolt can be fed through a hole in the structure leaving 4" to 5" (102-127 mm) of the bolt exposed to accept the FLS and allow for temporary housing separation during installation. At four (4) inches (102 mm), the nut and washers can be left on the end of the bolt while manipulating the housing halves to remove the cable after stringing or accept the insert during final installation.

Band Mount:
For concrete pole or band mounting to any structure, the housing halves have a molded groove that accepts 3/4" wide high-strength banding material. PLP provides the hardware kit (item 3 of the nomenclature) that is used to clamp the housing halves together after the unit is banded to the structure. The housings have a special recessed hole that keeps the carriage bolt from turning during assembly. To include the mounting hardware with the product add the suffix code H2 to the standard FLS catalog number. Banding material is not provided – Consult PLP for further information.

Line Angles:
For most applications, the maximum line angle recommended is 20°; consult PLP for exceptions.

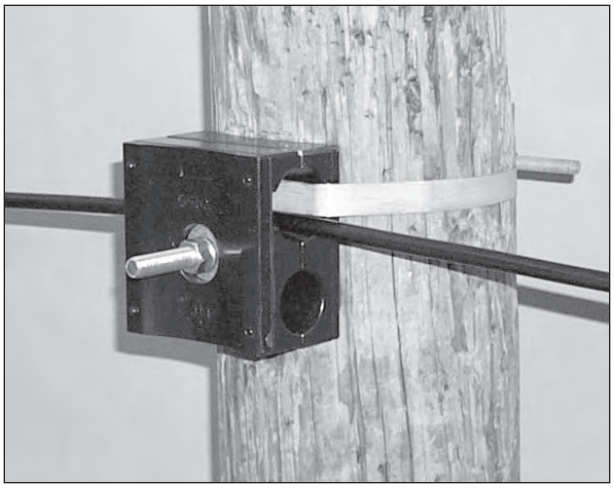
Slip Loads:
The hourglass shape of the insert creates wedge-action holding on the cable when unbalanced loads exist. The wedge works in either direction. Holding capability is enhanced with a special knurled finish on the inserts inner diameter surface. Specific performance will depend upon the specific cable OD and design.

FIBERLIGN® Light Support for ADSS

STRINGING OPERATIONS

The dielectric material of the body provides a highly abrasive-resistant surface that allows the FLS housing assembly to be used as a stringing traveler at the structure. The smooth surfaces of the housing are designed with gentle contours and large radii that allow up to 10° line angles (20° in certain cases – consult PLP). This ability saves installation time and costs by eliminating the use of conventional stringing travelers.

For stringing operations the large molded cavity will accept up to 1-1/4" diameter for pulling in hardware. If you are using cable greater than .699" (18 mm) diameter, you may have a large insert designed for the large molded cavity. If so, remove the large insert from its cavity and temporarily tighten the FLS housing halves against the pole. The small insert can remain in the small cavity of the FLS during stringing.



ORDERING INSTRUCTIONS

Refer to the catalog table and select the proper FLS for the cable's outside diameter. To include the carriage bolt hardware kit for Cat. no. 4800500 band mount, add suffix code H2 (banding material not included).EX: #4800110H2 will include hardware.

Catalog Number	Insert Size	Cable Diameter Range			
		Min (in)	Max (in)	Min (mm)	Max (mm)
4800107	SMALL	.250	.280	6.3	7.0
4800108		.281	.304	7.1	7.7
4800109		.305	.375	7.8	9.5
4800110		.400	.429	10.2	10.8
4800111		.430	.459	10.9	11.6
4800112		.460	.489	11.7	12.4
4800113		.490	.519	12.5	13.1
4800114		.520	.549	13.2	13.9
4800115		.550	.579	14.0	14.7
4800116		.580	.609	14.8	15.4
4800117		.610	.639	15.5	16.2
4800118		.640	.669	16.3	16.9
4800119		.670	.699	17.0	17.8
4800120	LARGE	.700	.723	17.9	18.3
4800122		.724	.779	18.4	19.7
4800124		.780	.834	19.8	21.1
4800126		.835	.889	21.2	22.5
4800128		.890	.944	22.6	23.9
4800130		.945	.999	24.0	25.4
4800132		1.000	1.054	25.5	26.8
DUAL INSERT APPLICATION: Catalog Numbers are available for Small & Large Insert Combinations - Contact PLP					

FIBERLIGN® Dielectric Support for ADSS

APPLICATION

The FIBERLIGN Dielectric Support (FDS) system is designed to gently, but firmly, support All-Dielectric Self-Supporting (ADSS) cable. It is intended for tangent support installations (see "LINE ANGLES") on lines that feature relatively low voltages, short spans and modest mechanical loads. For higher voltages (where "track resistant" ADSS cables are required), longer spans and/or higher loads, use either the FIBERLIGN Aluminum Suspension with Rods or the FIBERLIGN Dielectric Suspension — both products appear later in this section.

Maximum Span Lengths:
The maximum recommended span length for the FDS is dependent upon the specific cable OD, initial cable tension, ice and wind loading district (NESC), and other factors. It is intended for application on relatively short spans where vertical cable loading does not exceed approximately 1,000# (worst case). In general, the approximate recommended maximum span lengths for the FDS are:

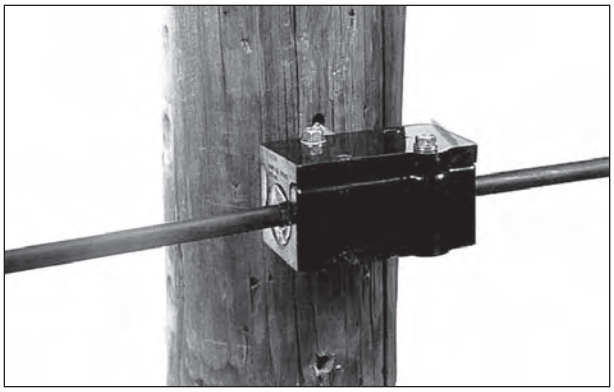
- 600' for < 1.00" OD cable (NESC – heavy).
- 300' for ≤ 1.00" OD cable (NESC – heavy).

When in doubt, consult PLP for specific span limitations.

Material:
The body and top are made from a high-strength, engineered dielectric material. The cushioned inserts are made from a soft, pliable dielectric material that gently grips the ADSS cable. Two captured zinc plated bolts with washers secure the top to the body.

Mounting:
The body threads onto standard 5/8" 11-UNC hot dipped galvanized thru-bolt and may be mounted either horizontally or vertically. For horizontal mounting to a wood pole (or other structures with thru-holes) a double arming bolt (completely threaded–no head) is suggested instead of a fixed length machine bolt. This allows approximately 1-5/8" of bolt length to thread into the body regardless of pole diameter.

FIBERLIGN Dielectric Support installed



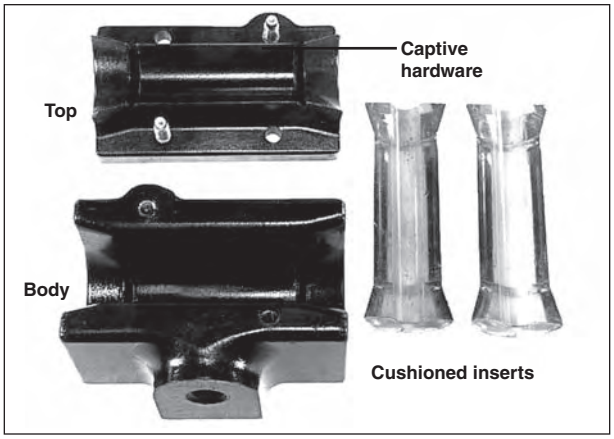
For mounting to concrete or steel structures without thru-holes, use a 5/8" threaded stud of appropriate length or banding system with a mounting bracket. See accessories in this section for details about the Limited Tension Banding Bracket.

Line Angles:
For most applications, the maximum line angle recommended is 20˚; consult PLP® for exceptions that allow 30˚ angles. When angles exceed 20˚ (or 30˚) a double dead-end arrangement is usually preferred. A special double FDS unit can be designed for certain applications; consult PLP for details.

Slip Loads:
The cushioned inserts are designed to gently grip the cable while providing significant slip strength without causing cable jacket damage. Specific performance will depend upon the specific cable O.D. and design.

NOMENCLATURE

FDS



patented

FIBERLIGN® Dielectric Support for ADSS

Stringing Operations:
The dielectric material of the body provides a highly abrasive-resistant surface that allows the FDS body to be used as a stringing traveler at the structure on up to 10˚ line angles (20˚ in certain cases–consult PLP®). This ability saves installation time and costs by eliminating the use of conventional stringing travelers.

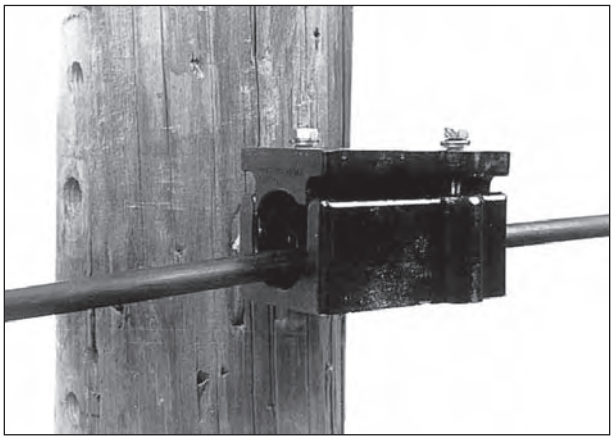
For stringing operations, thread the FDS onto the appropriate bolt, remove the inserts and elevate the top as far away from the bottom as the bolts will allow, to provide as large an opening as possible. Then thread pulling-in cable through the opening.

Component Reuse:
All components of FDS may be reused as desired if in good condition. Do not modify any component.

Ordering Instructions:
For concentric ADSS cable, refer to the catalog table and select the proper FDS for the cable's outside diameter. For non-concentric profiles, such as Figure 8 or other cable sizes and profiles, consult PLP for custom designs. To include accessories with the FIBERLIGN Dielectric Support, add code number to catalog number (example: 44002144B1).

ACCESSORIES

The FIBERLIGN Dielectric Support may be banded to concrete or steel structures using the appropriate Limited Tension Banding Bracket Kit (Cat. #710010577, code B1). The kit includes a 5/8"-11 x 2-1/2" long bolt, lockwasher, hex nut and banding bracket. The bracket is rated for 1,200# vertical load and should be used with a high strength 1-1/4" steel band (band purchased separately).



Cable OD Range inches (mm)	Catalog Number
.275-.325 (7.0-8.3)	44002144
.326-.375 (8.4-9.5)	44000691
.376-.425 (9.6-10.8)	44009998
.426-.475 (10.9-12.1)	44009949
.476-.525 (12.2-13.3)	44009952
.526-.575 (13.4-14.6)	44009823
.576-.625 (14.7-15.9)	44009798
.626-.675 (16.0-17.1)	44009776
.676-.750 (17.2-19.1)	44009799
.751-.825 (19.2-21.0)	44009878
.826-.900 (21.1-22.9)	44009963
.901-.950 (23.0-24.1)	44002213
.951-1.000 (24.2-25.4)	44003915
1.001-1.050 (25.5-26.6)	440010296

FIBERLIGN® Aluminum Support for ADSS



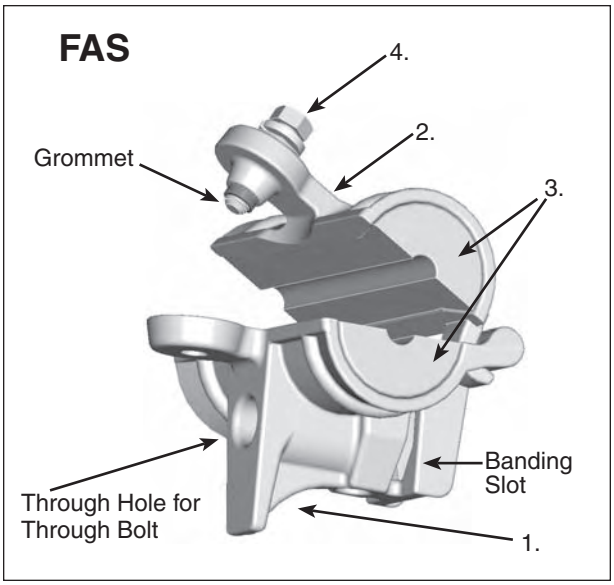
Through-Bolt Mounted



Band Mounted



Multi-Cable Stacking



PATENT PENDING

NOMENCLATURE

1. Base
2. Keeper
3. Cushion Inserts
4. Captured Bolt, Lock Washer & Flat Washer (Captured with grommet)

Base and Keeper: The aluminum alloy base and keeper have an **interlocking hinge** allowing easy access for pulling-in rope and ADSS cable. Closing the keeper captures the cable during stringing and subsequently secures the cable and cushion inserts for permanent installation. The base is designed to accept a 1-1/4" wide x .040" thick (32 mm x 1 mm) band or a 5/8" through bolt (M16) for mounting to the structure. **In multi-cable installations,** modular base surfaces at the mounting bolt and band entry areas provide stable engagement and stacking.

Captured Bolt and Bevel Washer: Galvanized steel bolt, lock washer and washer captured with an elastomer grommet.

Cushion Inserts: A soft pliable dielectric material that gently grips the ADSS cable.
FAS is the acronym for FIBERLIGN Aluminum Support.

APPLICATION

The FIBERLIGN Aluminum Support (FAS) is designed to gently, but firmly support All-Dielectric Self-Supporting (ADSS) cable. The FAS features the following: Integrated bolt or band mount design, Hinged keeper and base, Single-bolt clamping, and Stackability for multi-cable installations. For higher voltages (where track resistant ADSS cables are required), longer spans and/or higher loads, use either the FIBERLIGN Aluminum Suspension w/rods or the FIBERLIGN Dielectric Suspension – both products appear later in this section.

Maximum Span Lengths:
The FAS was designed for short span applications where vertical loading does not exceed 1000# (4.4 kN). The maximum vertical load typically factors-in span length, cable OD, initial cable tension, ice and wind loading district (NESC), multi-cable stacking, etc. As a general idea, the following recommendations are approximate maximum span lengths for the FDS under NESC Heavy conditions:

- 600' (183 m) for < 1.00" (25 mm) OD cable (NESC Heavy)
- 300' (91 m) for > 1.00" (25 mm) OD cable (NESC Heavy)

Mounting:
The FAS can be bolted or banded to a structure. For mounting to wood poles (or other structures with through holes) a 5/8"-11 (M16) through-bolt or double-arming bolt may be used to capture the FAS against the structure. The width of the FAS accounts for about 3.2" (81 mm) of bolt length.

FIBERLIGN® Aluminum Support for ADSS

For mounting to concrete or steel structures without through holes, the FAS may be banded via the band slot cast in the base of the FAS. The band slot is designed to accept a 1-1/4" wide x 0.040" thick (32 mm x 1 mm) high strength band. Banding materials with 45,000 psi (310 MPa) yield strength and 95,000 psi (655 MPa) ultimate strength are recommended to achieve rated vertical load.

Line Angles:
For most applications, the maximum line angle recommended is 20˚ – consult PLP® for exceptions that allow 30˚ angles. When angles exceed 20˚ (or 30˚) the FIBERLIGN Aluminum Suspension (found later in this section) as a single or double attachment may be considered as an alternative.

Longitudinal Holding Capability:
The cushioned inserts are designed to gently grip the cable – providing modest longitudinal holding strength without causing cable damage. Specific performance will depend upon the cable brand, internal construction, and outer diameter.

Stringing Operations:
The cable cavity of the FAS is contoured and smooth to allow the product to be used as a stringing traveler during stringing and sagging operations. The line angles during stringing may go up to 10˚ (20˚ in certain cases – consult PLP).

For stringing, the inserts are removed and the keeper should be fully closed with the bolt fully engaged.



STRINGING

Torque Level:
The keeper is fastened to the base with the 3/8”- 16 captured bolt and should be tightened until the lock washer is flat for proper torque level. This will require 10 foot pounds (120 inch-pounds or 13.5 Newton-meters) of force. DO NOT OVER-TORQUE.

Stacking – Multi Cable Installation:
Multi-cable installations with the FAS save pole space as the first unit mounts against the pole and added units extend horizontally – captured with a common 5/8" (M16) bolt. The length of the bolt must accommodate the stacked FAS units – each width approximately 3.2" (81 mm). For installations of more than two cables, a brace should be used to help support the cantilever load on the through-bolt or band.

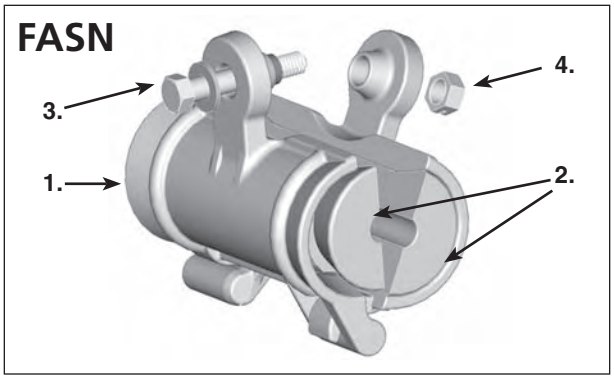
The FAS units stack in such a way that keep adjacent cables in staggered formation, thus reducing the possibility of cable collision due to wind induced cable sway.

ORDERING INSTRUCTIONS

Refer to the catalog table and select the appropriate FAS for the ADSS cableís outside diameter.

FIBERLIGN® Aluminum Support				
	ADSS Cable Range			
Catalog Number	Min (in)	Max (in)	Min (mm)	Max (mm)
4450095	0.226	0.275	5.7	6.9
4450096	0.276	0.325	7.0	8.2
4450097	0.326	0.375	8.3	9.4
4450098	0.376	0.425	9.5	10.7
4450099	0.426	0.475	10.8	12.0
4450100	.476	.525	12.1	13.3
4450101	.526	.575	13.4	14.6
4450102	.576	.625	14.7	15.9
4450103	.626	.675	16.0	17.1
4450104	.676	.750	17.2	19.1
4450105	.751	.825	19.2	21.0
4450106	.826	.900	21.1	22.9
4450107	.901	.975	23.0	24.8
4450108	.976	1.05	24.9	26.7
4450109	1.051	1.25	26.8	28.6
4450110	1.126	1.20	28.7	30.5
4450111	1.201	1.275	30.6	32.4
4450112	1.276	1.35	32.5	34.3
4450113	1.351	1.425	34.4	36.2

FIBERLIGN® Aluminum Suspension for ADSS



NOMENCLATURE

1. Keeper
2. Cushion Inserts (With or Without Grit)
3. Captured Bolt and Washer (Captured with Grommet)
4. Lock Nut
5. Anchor Shackle with Eye-nut (Optional not shown)
6. Structural Reinforcing Rods (optional, not shown)

Keeper:
The aluminum alloy keepers have an interlocking hinge for simple access and cable installation. Closing the keeper captures and secures the cushion inserts and ADSS cable. The keepers join together to form a clevis for attachment to the structure via Cat. No. AS-5L anchor shackle fitting or equivalent.

Cushion Inserts:
A soft pliable dielectric material that gently grips the ADSS cable – supplied either with or without grit on the inner diameter bore. Gritted inserts are applied over optional Structural Reinforcing Rods for medium span applications. The gritted inserts have a conductive aluminum strip located near the center for higher voltage environments.

Captured Bolt, Washer, and Lock Nut:
Galvanized steel bolt and washer captured with an elastomer o-ring. The galvanized steel Lock Nut has a stiff wire locking mechanism designed to engage with the thread of the mating bolt.

Structural Reinforcing Rods (SRR)
are preformed galvanized steel rods – subsetted and gritted. They are intended to provide additional protection to the cable jacket and increase longitudinal holding abilities of the unit.

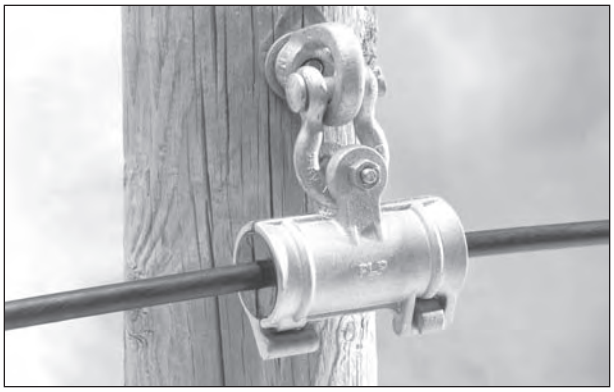
FASN is the acronym for FIBERLIGN ALUMINUM SUSPENSION.

APPLICATION

The FIBERLIGN Aluminum Suspension (FASN) is designed to gently, but firmly support All-Dielectric Self-Supporting (ADSS) cable. The FASN features the following: Interlocking Hinge, Single-bolt clamping, Short to Medium Span Option, Low to High Voltage Environment acceptance. The addition of SRR allows the versatile FASN to go from a distribution environment to a transmission environment. Fittings and brackets are available for wood pole and concrete or metal structure applications.

Span Length Capability
1. For short spans without SRR:
   <600' (183 m) maximum recommended span lengths.
2. For Intermediate spans with SRR:
   <1200' (366 m) maximum recommended span lengths.

For additional cable jacket protection, longer spans and higher longitudinal holdling requirements, the dual rod layer FIBERLIGN Dielectric Suspension (found later in this section) is recommended.



Anchor Shackle w/Eye Nut Option



FASN with Rods

Vertical Load Limit
The FASN has an ultimate vertical load capability of 7000 (31 kN) pounds.

Longitudinal Cable Holding Capabilities
Without SRR, modest longitudinal holding capabilities are provided via compresson of the non-gritted inserts on the cable. Specific values are dependent upon cable brand, internal construction and diameter. Consult PLP for specifics.

With SRR, substantial longitudinal holding capabilities are provided via insert compression and are enhanced by the grit on both the inserts and SRR. Contact PLP for specifics.

Rod End Treatment
In order to avoid scratching, gouging or nicking of the plastic jacket during installation, unbalanced loading, or cable motion, the ends of eh SRR's are factory formed to flare away from the cable surface.

FIBERLIGN® Aluminum Suspension for ADSS

Grounding and Corona Protection:
If positive grounding of the cable and metalic components of the FASN is desired, a grounding wire can be attached to the 3/8" captured bolt. PLP can supply a 4' (1.2m) long #4 copper or 4/0 aluminum grounding wire assembly (Cat. No. 710010016 or 710010294 respectively).

For the FASN, the SRRs have been designed to accept the ADSS-CORONA™ Coil. The ADSS CORONA Coil reduces electrical stress at the ends of the metal rods.
Further catalog information about this product can be found later in this section.

Mounting

- Bolted (Wood Poles): Adding suffix code "S" provides an anchor shackle with 5/8"-11 eye nut accessory (Cat. No. 710010357) for attachment to double arm bolts. The anchor shackle (Cat. No. AS-5L) may be purchased separately to attach to eyebolts.
- Banded (Steel, Concrete Poles): Banding Bracket (Cat. No. 710010577) is offered for low tension/short span support application only. The kit includes a 5/8"-11x 2-1/2" long bolt, lockwasher, hex nut and banding bracket. The bracket is rated for 1,200# (5.3 kN) vertical load and should be used with a high strength 1-1/4" (32 mm) steel band (band purchased separately).

Line Angles
The FASN maximum recommended line angle for a single suspension unit is 30˚ depending on cable brand. Two units can be combined to turn larger angles up to 60˚, although double dead-ending is another option for large angles. Contact PLP for details.

Torque Level
The 3/8" captured bolt should be tightened UNTIL THE LOCK WASHER IS FLAT and the clevis halves are joined flush. This will require about 10 foot-pounds (120 inch-pounds or 13.5 Newton-meters) of force. DO NOT OVER-TORQUE.

FASN Kit Without Structural Reinforcing Rods

Catalog Number*	ADSS Cable Range Min (in)	Max (in)	Min (mm)	Max (mm)
4450195	0.226	0.275	5.7	6.9
4450196	0.276	0.325	7.0	8.2
4450197	0.326	0.375	8.3	9.4
4450198	0.376	0.425	9.5	10.7
4450199	0.426	0.475	10.8	12.0
4450200	0.476"	0.525"	12.1	13.3
4450201	0.526"	0.575"	13.4	14.6
4450202	0.576"	0.625"	14.7	15.9
4450203	0.626"	0.675"	16.0	17.1
4450204	0.676"	0.750"	17.2	19.1
4450205	0.751"	0.825"	19.2	21.0
4450206	0.826"	0.900"	21.1	22.9
4450207	0.901"	0.975"	23.0	24.8
4450208	0.976"	1.050"	24.9	26.7
4450209	1.051"	1.125"	26.8	28.6
4450210	1.126"	1.200"	28.7	30.5
4450211	1.201"	1.275"	30.6	32.4
4450212	1.276"	1.350"	32.5	34.3
4450213	1.351"	1.425"	34.4	36.2

*Add Suffix "S" to Catalog No. to include one #AS-5L Anchor Shackle and 5/8" Eye-Nut

ORDERING INSTRUCTIONS

FASN Kit with Structural Reinforcing Rods

Catalog #*	ADSS Cable Range Min (mm)	Max (mm)	Rod Length (mm)	Rod Dia. (mm)	Color Code
4470200	0.476" (12.1)	0.500" (12.7)	33" (838)	.100" (2.5)	Red
4470201	0.501" (12.8)	0.550" (14.0)	34" (864)	.100" (2.5)	Blue
4470202	0.551" (14.1)	0.625" (15.9)	34" (864)	.100" (2.5)	Black
4470203	0.626" (16.0)	0.700" (17.8)	35" (889)	.100" (2.5)	Orange
4470204	0.701" (17.9)	0.737" (18.7)	36" (914)	.119" (3)	Green
4470205	0.738" (18.9)	0.812" (20.6)	36" (914)	.119" (3)	Pink
4470206	0.813" (20.7)	0.887" (22.5)	37" (940)	.119" (3)	Purple
4470207	0.888" (22.6)	0.962" (24.4)	37" (940)	.119" (3)	White
4470208	0.963" (24.5)	1.037" (26.3)	37" (940)	.119" (3)	Yellow
4470209	1.038" (26.4)	1.112" (28.2)	38" (965)	.119" (3)	Brown
4470210	1.113" (28.3)	1.187" (30.1)	39" (991)	.119" (3)	Red

*Add Suffix "S" to Catalog No. to include one #AS-5L Anchor Shackle

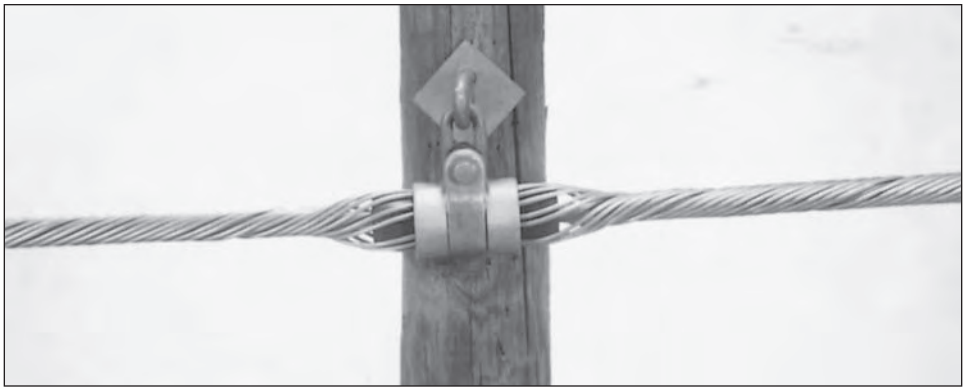
Refer to the catalog tables (with or without rods) and select the appropriate FASN for the ADSS cables outside diameter.

Add suffix code "S" to include anchor shackle with 5/8" eye-nut (Cat. No. 710010357) option.

Order Cat. No. 710010577 to receive the Limited Tension Banding Bracket – see "Mounting" paragraph earlier in this section for details.

Order Cat. No. 710010016 to receive a 4' (1.3 m) long #4 (7W) copper with terminal on one end. Order Catalog No. 710010294 to receive a 4' (1.2 m) long 4/0 (7W) aluminum conductor with terminal on one end.

FIBERLIGN® Dielectric Suspension for ADSS



Fiberlign Dielectric Suspension for All-Dielectric Self-Supporting (ADSS) Cable

APPLICATION

The FIBERLIGN® Dielectric Suspension is specifically designed for installation on ADSS cables and is different than FIBERLIGN® Suspension for OPGW. Due to the relatively fragile nature of the plastic jackets and nonmetallic strength members of ADSS, special care and features are incorporated into the design of the FIBERLIGN Dielectric Suspension.

The unit does use a combination of Structural Reinforcing Rods, Outer Rods, boltless housing and resilient cable inserts to reduce compression clamping and bending stresses on the cable and glass fibers. Negative effects of wind induced cable motions such as aeolian vibration, galloping and wind sway are also minimized.

The double layer of rods also offers critical protection against tearing of the plastic jacket during unbalanced longitudinal loading of the cable while providing substantial holding strength. This holding strength can vary according to cable brand, jacket type, operating temperatures and other factors.

For further details about the product and its components, refer to FIBERLIGN Suspension for OPGW earlier in this section.

Rod End Treatment
In order to avoid scratching, gouging or nicking of the plastic jacket during installation, unbalanced loading, or cable motion, the Structural Reinforcing Rods are slightly flared away from the cable surface. Unflared rod ends can cause damage to the jacket which should be avoided.

Product Selection
As a general guideline, the FIBERLIGN Dielectric Suspension for ADSS is intended for long spans where suspension is desired regardless of span, where very high unbalanced longitudinal holding strengths are desired, or where very high vertical loads are expected.

PLP offers two other products for lighter load/shorter span applications in suspension and support modes. Refer to the FIBERLIGN Dielectric Support (FDS), FIBERLIGN Aluminum Support (FAS) and FIBERLIGN Aluminum Suspension (FASN) products that appear earlier in this section.

ULTIMATE VERTICAL STRENGTH & HOUSING & FITTING DIMENSIONS: Refer to dimensional tables in the FIBERLIGN Suspension for OPGW section of this catalog.

Line Angles
The maximum recommended line angle for a single suspension unit is 40˚. A custom designed FIBERLIGN Dielectric Suspension Double for angles up to 80˚ is available. Double dead-ending for angles over 40˚ is another option.

Fittings
Fittings such as a Y-Clevis, Clevis Eye, Chain Link or Anchor Shackle may be required to attach the Suspension unit to the structure or other hardware. These fittings must match the dimensions of the suspension housing; refer to the dimensional tables and fittings pages in the FIBERLIGN Suspension for OPGW section of this catalog.

Component Reuse
Once installed, do not reuse the rod components. The hardware components may be reused as long as they are in good condition. Do not modify any components.

FIBERLIGN® Dielectric Suspension for ADSS

ORDERING INSTRUCTIONS

Select the appropriate FIBERLIGN Dielectric Suspension for ADSS by cable diameter from the table below. For FIBERLIGN Suspension for OPGW, refer to page section 20-11 of this catalog. For trunnion or bracket-type mounting for ADSS or OPGW, consult PLP®.

Catalog Number	Diameter Range				Structural Reinforcement Rods						Outer Rods					
	Min.-Max. (in)		Min.-Max. (mm)		Length		Rod Diameter		Rods per set	Color Code	Length		Rod Diameter		Rods per set	Color Code
					(in)	(meters)	(in)	(mm)			(in)	(meters)	(in)	(mm)		
430010267	.354	.381	8.9	9.6	80	2.03	.146	3.7	9	Blue	42	1.07	.204	5.2	11	Blue
43003195	.399	.418	10.1	10.6	80	2.03	.146	3.7	10	Yellow	42	1.07	.204	5.2	11	Yellow
43001929	.419	.439	10.7	11.1	80	2.03	.146	3.7	10	Black	42	1.07	.204	5.2	11	Black
43009490	.440	.458	11.2	11.6	81	2.06	.146	3.7	11	White	43	1.09	.204	6.4	11	White
43003233	.459	.461	11.7	11.7	84	2.13	.167	4.2	10	Purple	46	1.17	.250	6.4	10	Orange
43003234	.462	.476	11.8	12.0	84	2.13	.167	4.2	10	Purple	46	1.17	.250	6.4	10	Purple
43004061	.477	.503	12.1	12.7	84	2.13	.146	3.7	12	Orange	46	1.17	.250	6.4	10	Orange
43004164	.504	.511	12.8	12.9	84	2.13	.146	3.7	12	Red	46	1.17	.250	6.4	10	Purple
43009922	.512	.536	13.0	13.6	87	2.21	.167	4.2	11	Blue	49	1.24	.250	6.4	11	Blue
43002246	.537	.559	13.7	14.1	87	2.21	.167	4.2	11	Green	49	1.24	.250	6.4	11	Green
43004100	.560	.565	14.2	14.3	87	2.21	.167	4.2	11	Green	49	1.24	.250	6.4	11	Green
43003235	.566	.573	14.4	14.5	92	2.34	.182	4.6	11	Black	54	1.37	.250	6.4	12	Black
43009945	.574	.598	14.6	15.1	92	2.34	.182	4.6	11	Black	54	1.37	.250	6.4	12	White
43009965	.599	.625	15.2	15.8	92	2.34	.182	4.6	12	Brown	54	1.37	.250	6.4	12	Brown
43003239	.626	.632	15.9	16.0	102	2.59	.204	5.2	11	Red	63	1.6	.310	7.9	11	Red
43009760	.633	.666	16.1	16.9	102	2.59	.204	5.2	11	Red	63	1.6	.310	7.9	11	Blue
43004965	.667	.682	17.0	17.3	102	2.59	.204	5.2	12	Yellow	63	1.6	.310	7.9	11	Green
43009947	.683	.710	17.4	18.0	102	2.59	.204	5.2	12	Yellow	63	1.6	.310	7.9	11	Yellow
43004991	.711	.728	18.1	18.4	102	2.59	.204	5.2	12	White	63	1.6	.310	7.9	12	Black
43009868	.729	.744	18.5	18.8	102	2.59	.204	5.2	12	White	63	1.6	.310	7.9	12	White
43006274	.745	.750	18.9	18.9	102	2.59	.204	5.2	12	White	63	1.6	.310	7.9	12	White
43009842	.751	.786	19.0	19.9	102	2.59	.204	5.2	13	White	63	1.6	.310	7.9	12	Brown
43003240	.787	.814	20.0	20.6	111	2.82	.250	6.4	11	Green	72	1.83	.365	9.3	11	Green
43003058	.815	.845	20.7	21.4	111	2.82	.250	6.4	12	Yellow	72	1.83	.365	9.3	11	Yellow
43003028	.846	.855	21.5	21.6	111	2.82	.250	6.4	12	Green	72	1.83	.365	9.3	12	Blue
43003230	.856	.894	21.7	22.6	119	3.02	.250	6.4	12	Black	80	2.03	.365	9.3	12	Black
43003079	.895	.907	22.7	22.9	119	3.02	.250	6.4	12	White	80	2.03	.365	9.3	12	White
43003241	.908	.916	23.0	23.2	119	3.02	.250	6.4	13	Purple	80	2.03	.365	9.3	12	Purple
43003242	.917	.929	23.3	23.5	119	3.02	.250	6.4	13	Brown	80	2.03	.365	9.3	12	Brown
43003243	.930	.942	23.6	23.9	119	3.02	.250	6.4	13	Red	80	2.03	.365	9.3	12	Red
43003244	.943	.977	24.0	24.7	119	3.02	.250	6.4	13	Orange	80	2.03	.365	9.3	13	Orange
430010305	.978	1.016	24.8	25.7	118	3.00	.250	6.4	13	Purple	80	2.03	.365	9.3	12	Purple
430010306	1.017	1.057	25.8	26.8	118	3.00	.250	6.4	14	Red	80	2.03	.365	9.3	12	Red
430010307	1.058	1.079	26.9	27.3	133	3.38	.250	6.4	14	Blue	95	2.41	.365	9.3	13	Blue
430010308	1.080	1.112	27.4	28.1	133	3.38	.250	6.4	14	Green	95	2.41	.365	9.3	13	Green
430010309	1.113	1.149	28.2	29.1	133	3.38	.250	6.4	15	Yellow	95	2.41	.365	9.3	13	Yellow
43003778	1.150	1.190	29.2	30.1	131	3.33	.250	6.4	15	Red	92	2.34	.365	9.3	15	Red

PREFORMED LINE PRODUCTS

Section 22 – Fiber Optics: FIBERLIGN® Hardware Accessories for OPGW and/or ADSS

Table of Contents Page

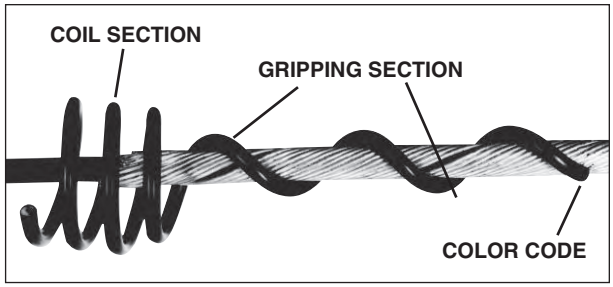
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ADSS-CORONA™ Coil

NOMENCLATURE



GENERAL INFORMATION

ADSS-CORONA Coils are intended to reduce electrical stress at the ends of the metal rods of FIBERLIGN® Dielectric Dead-ends and Suspensions applied on ADSS cables installed in high voltage electrical fields. They are made from a light weight material and are designed to suppress electrical arcing at the ends of metal rods which can occur on some lines and may damage the plastic jacket of ADSS cables. Consult PLP® for specifics.

Application:
One unit is required at dead-end locations and two at suspension installations.

ADSS-CORONA Coils are designed and manufactured to be used only with FIBERLIGN Dielectric Dead-ends or Suspensions manufactured by Preformed Line Products. They should NOT be used with other dead-end or suspension devices.

Installation:
The Corona Suppression Coil section is centered over the ends of the metal rods for maximum stress reduction. The unit is secured in place by wrapping the unique gripping section directly over the Structural Reinforcing Rods of a dead-end and suspension. They will not interfere with the performance of the dead-end or the suspension.

They may be installed at the time of the original dead-end or suspension installation or are easily added later if desired. They can be quickly installed by hand or with conventional hot sticks.

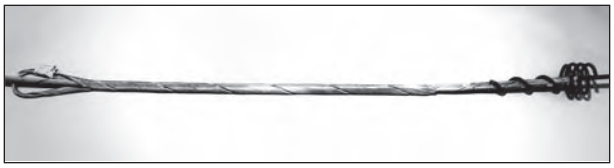
Product Reuse:
Do not reuse ADSS-CORONA Coils once permanently installed. They may be removed and positioned during the initial installation.

Product Selection:
Consult PLP for application recommendations, catalog numbers and product availability.

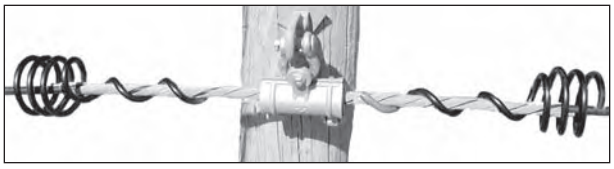
APPLICATION OPTIONS



Used with a FIBERLIGN® Dielectric Suspension



Used with a FIBERLIGN® Dielectric Dead-end



Used with a FIBERLIGN® Aluminum Suspension w/rods

FIBERLIGN® Cable Abrasion Protector & Cable Marker



FIBERLIGN ADSS Cable Abrasion Protector

The FIBERLIGN ADSS Cable Abrasion Protector is intended to protect ADSS cable jacket from abrasion from structures, trees or other cables. It is made from black, low density polyethylene for low cost and superior abrasion resistance. The tube comes in two lengths and three OD sizes. Either tube may be cut in the field to accommodate specific length needs.

Component Reuse:
ADSS Cable Abrasion Protectors may be reused as desired if in good condition.

ORDERING INSTRUCTIONS

Select the appropriate size from the catalog table in this section.

FIBERLIGN ADSS Cable Abrasion Protector

Cable OD Range (in)	Cable OD Range (mm)	Protector ID in (mm)	Protector Length	Catalog Number
.238-.500	6.04-12.7	.5 (12.7)	8" (20.3 cm)	PTG-0200
			6' (1.8 m)	PTG-0201
.501-1.000	12.8-25.4	1.0 (25.4)	8" (20.3 cm)	PTG-0202
			6' (1.8 m)	PTG-0203
1.001-1.500	25.6-38.1	1.5 (38.1)	8" (20.3 cm)	PTG-0204
			6' (1.8 m)	PTG-0205



FIBERLIGN Fiber Optic Cable Marker

Intended Use:
The Fiber Optic Cable Marker is designed to visibly identify fiber optic cable at a wood utility pole or other structure. In addition to marking the cable with a distinct orange color, the word "CAUTION" is used to emphasize the cable type. The bright orange color is easily identifiable from ground level.

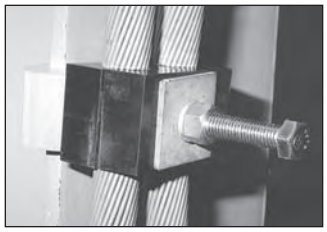
Material:
The fiber optic cable marker is manufactured from corrosion resistant, lightweight polyethylene. Polyethylene provides superior retention of physical characteristics over temperature ranges and exposure to ultraviolet radiation.

Catalog Number	Color	Cable Diameter Range Inches (mm)	Length Inches (mm)
500510903	Orange	0.7 - 1.1 (18-28)	8 (203)
The Fiber Optic Cable Marker is imprinted with the following information: **"CAUTION FIBER OPTIC CABLE"**. The characters are printed in black lettering that is 5/16" high and located opposite the installation split.			

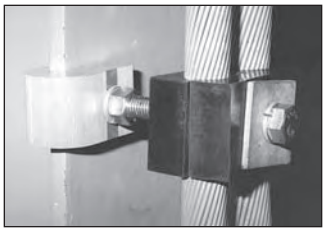
FIBERLIGN® Downlead Cushion for OPGW or ADSS



FIBERLIGN Downlead Cushion mounted to wood pole



FIBERLIGN Downlead Cushion mounted to lattice tower – flush position



FIBERLIGN Downlead Cushion mounted to lattice tower – extended position

FIBERLIGN Downlead Cushion

GENERAL APPLICATION

The FIBERLIGN Downlead Cushion secures Optical Ground Wire (OPGW) downleads or ADSS cable downleads to structures while minimizing compressive clamping forces which could be transferred to the optical elements.

Material:
The FIBERLIGN downlead cushion is offered as an all urethane product for OPGW or ADSS applications, as well as an all aluminum alloy product for OPGW applications.

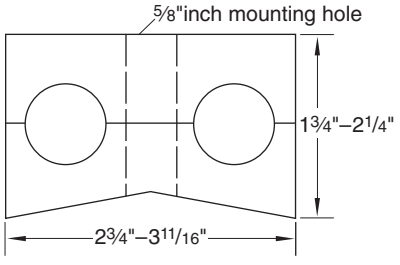
Description/Urethane:
The all urethane material is molded to form a base member and a top member, each containing two grooves which accommodate a specified range of OPGW or ADSS cable diameters. The base member can be applied to either curved pole surfaces or flat surfaces. The weather-resistant urethane is extremely durable yet pliable enough to firmly contain ADSS cable without damaging the plastic jacket.

Description/Aluminum:
The all aluminum product has identical top and bottom halves that are designed for flat surface mounting. The two grooves are machined to accommodate a specified range of OPGW. The aluminum material provides an electrical path from the OPGW cable to the structure for bonding purposes.

Mounting:
The downlead cushion is designed to accept up to 5/8" diameter bolts or screws for mounting purposes. For additional mounting options see the Mounting Accessories on the next page.

Other configurations are available. Consult PLP for availability.

Dimensions for Urethane Downlead Cushion



Urethane Downlead Cushion for ADSS or OPGW				
Catalog Number	Diameter Range			
	Inches		Millimeters	
	Min	Max	Min	Max
8003041	.375	.468	9.5	11.8
8003042	.469	.562	11.9	14.2
8003043	.563	.656	14.3	16.6
8003044	.657	.750	16.7	19.0
8003052	.751	.849	19.1	21.5
8003256	.850	.950	21.6	24.1
8003257	.951	1.050	24.2	26.6
8003379	1.051	1.190	26.7	30.2

Aluminum Downlead Cushion for OPGW				
Catalog Number	Diameter Range			
	Inches		Millimeters	
	Min	Max	Min	Max
8003644	.328	.374	8.3	9.5
8003654	.375	.422	9.5	10.7
8003653	.423	.468	10.7	11.9
8003266	.462	.515	11.7	13.0
8003267	.516	.562	13.1	14.2
8003268	.563	.609	14.3	15.4
8003269	.610	.656	15.5	16.6
8003270	.657	.703	16.7	17.8
8003271	.704	.750	17.9	19.0
8003477	.751	.797	19.1	20.2

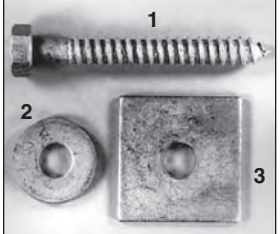
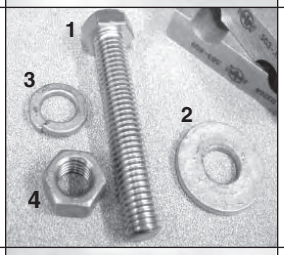
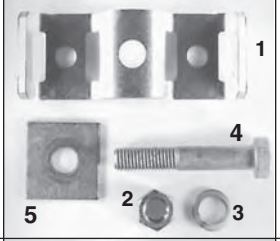
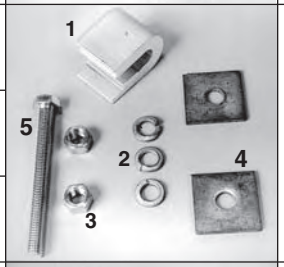
* To include Mounting Accessories, add respective suffix code to cushion catalog number:
- Suffix code H1 includes Hardware Kit for wood pole mount.
- Suffix code H3 includes 1/2–13 hex head bolt mounting kit or steel pole mount.
- Suffix code LTC1 or LTC2 includes Lattice Tower Clamp Kit for latticetower mount.
- Suffix code B1 includes Limited Tension Banding Bracket Kit for concrete or steel structure mount.

FIBERLIGN® Downlead Cushion Mounting Accessories

MOUNTING ACCESSORIES

Mounting kits are offered for Wood Pole, Concrete Pole, Steel Pole, and Lattice Tower Structures. The following table lists the kits for the respective structures.

Downlead Cushion Mounting Accessories

Catalog Number	Suffix Code	Product Name	Kit Contents	Nomenclature	Structure Application
710010017	H1	Wood Pole Hardware Kit		1. 1/2" X 4" long Lag Screw 2. Round Washer 3. Square Washer	Wood Pole
710011655	H3	1/2-13 UNC HEX Head Bolt Hardware Kit		1. 1/2-13 x 3" long Hex Head Bolt 2. Flat Washer 3. Lock Washer 4. Hex Nut	Metal or Concrete Pole with 1/2"-13 UNC Female interface
710010576	B1	Limited Tension Banding Bracket		1. Banding Bracket 2. Hex Nut 3. Lock Washer 4. 5/8-11 x 3-1/2" long Hex Head Bolt 5. Square Washer	Metal or Concrete Pole
7000400	LTC1	Lattice Tower Clamp with 6" (152mm) long bolt		1. Clamp 2. Lock Washer (3) 3. Hex Nut (2) 4. Square Washer (2) 5. 5/8-11 Hex Head Bolt	Lattice Tower
7000401		Lattice Tower Clamp with 10" (254 mm) long bolt			
7000402		Lattice Tower Clamp with 8" (203 mm) long bolt			
700011045	LTC2	Light-Duty Lattice Tower Clamp		1. Clamp 2. Round Washer 3. Lock Washer 4. 1/2-13 x 5" long Hex Head bolt 5. Hex Nut (2)	

ORDERING INSTRUCTIONS

Mounting Kits may be ordered independently by catalog number or included with Downlead Cushions by adding Suffix Code to Downlead Cushion Catalog Numbers found on previous page. Ex. 8003042H1 includes a Urethane Downlead Cushion with Wood Pole Hardware Kit in the same carton.

FIBERLIGN® Downlead Cushion Mounting Accessories

MOUNTING KIT INSTALLATION NOTES

1/2-13 Hex Head Bolt Hardware Kit leaves approximately 1" (25 mm) of exposed thread for mounting engagement

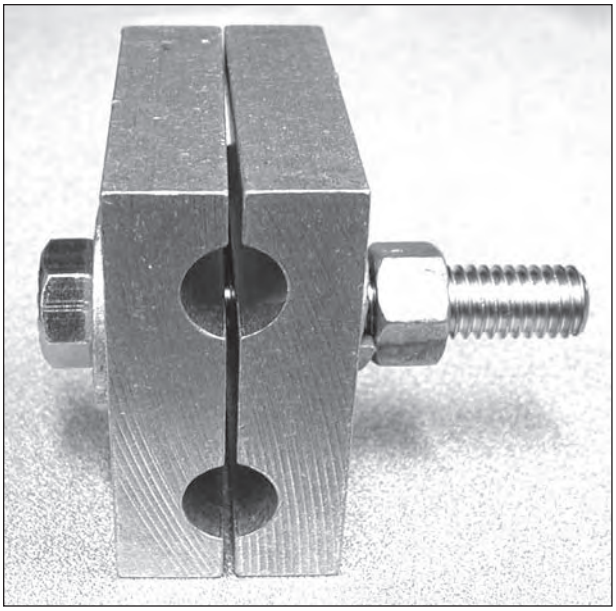
Limited Tension Banding Brackets are used to mount downlead cushions without drilling holes. Using a 3/4" wide High Strength band (not supplied), the banding system will support a 500 pound (2.2 kN) vertical load. All components are galvanized steel.

Lattice Tower Clamps with 6, 10, or 8" long bolts can be Flush mount or Extended mount as shown below.

It is recommended to loosely pre-assemble the components for your application before transporting up the tower. The unit may be installed on any portion of the structure in any orientation.

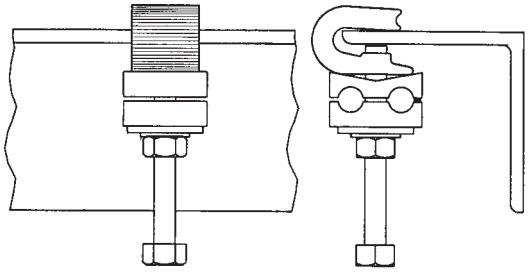
The C-shaped clamp was originally designed to accept a 0.65" (16.5 mm) maximum tower thickness. The latest design will accept up to 1-1/8" (28.5 mm) thick tower members. For applications that require >0.65" thick, contact technical support to assure 1-1/8" clamp is packaged with the kit. The clamp is made from high strength aluminum and all other components are galvanized steel.

LIGHT DUTY Lattice Tower Clamp is provided with a C-Shaped clamp that will accept up to 1-1/8" (28.5 mm) thick tower members. The clamp is made from high strength aluminum and all other components are galvanized steel.

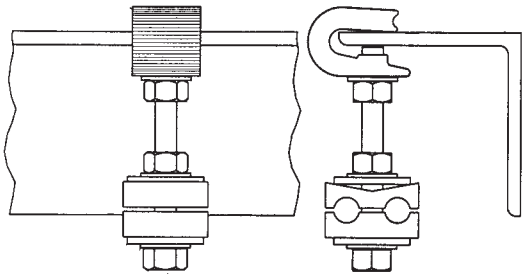


Downlead Cushion shown with mounting kit Catalog number 710011655, suffix code H3

Lattice Tower – Flush Mount

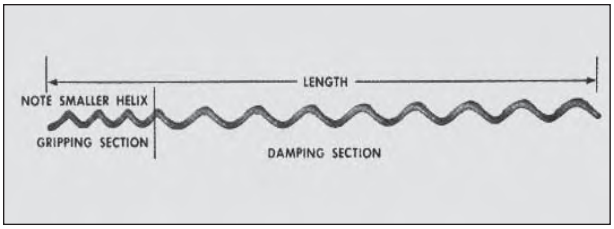


Lattice Tower – Extended Mount



Spiral Vibration Damper/Air Flow Spoiler

FIBERLIGN Dampers for Aeolian Vibration Suppression



FIBERLIGN Spiral Vibration Damper for OPGW

The FIBERLIGN Spiral Vibration Damper effectively reduces levels of aeolian vibration on Optical Ground Wire (OPGW) cables.

Each FIBERLIGN Spiral Vibration Damper has a helically formed dampening section sized for interplay of damper and cable, to provide the action/reaction motion that opposes the natural vibration wave. A smaller gripping section gently grips the cable so that cable and fiber are not damaged or distorted and there is no optical signal loss.

The degree of protection needed for a specific application depends on a number of factors such as cable type, line design, temperature, tension, and exposure to wind flow. Consult PLP® for specific recommendations.

FIBERLIGN Spiral Vibration Dampers for OPGW Cable

Catalog Number	Diameter Range inch	Diameter Range mm	Length inch (m)	Per Units	Carton Weight (lbs)
5050104	.327-.461	8.3-11.6	51 (1.3)	50	34
5050105	.462-.563	11.7-14.3	53(1.3)	50	36
5050106	.564-.760	14.4-19.3	61(1.5)	25	50

Notes:
1. Consult Preformed Line Products for recommendations on the number of dampers required per span.

FIBERLIGN Dielectric Dampers for ADSS Cable

ADSS cables tend to vibrate at higher levels than other cables of comparable size, mainly due to their relatively lighter weight. Also the “soft” nature of their jackets and internal construction requires special consideration.

A special damper, called the FIBERLIGN Dielectric Damper, has been developed specifically for application on ADSS cables. It utilizes the same dampening characteristics as the FIBERLIGN Spiral Vibration Damper, plus provides more gentle gripping.

FIBERLIGN Dielectric Damper for ADSS Cable

Catalog Number	Cable Diameter Range (inches)	Cable Diameter Range (mm)	Length inches (m)	Units (per carton)	Carton Weight (lbs.)
50502393	.250-.326	6.3-8.6	49 (1.24)	50	26
50502272	.327-.461	8.3-11.12	51 (1.30)	50	28
50502274	.462-563	11.7-14.2	53 (1.35)	50	30
50509862	.564-.770	14.3-19.5	65 (1.65)	50	46
50503057	.771-.876	19.5-22.2	71 (1.80)	25	30
50503576	.877-1.00	22.3-25.3	72 (1.91)	25	35
50503909	1.001-1.25	25.4-30.5	75 (2.29)	25	40

Notes:
1. Consult Preformed Line Products for recommendations on the number of dampers required per span.

FIBERLIGN Air Flow Spoiler

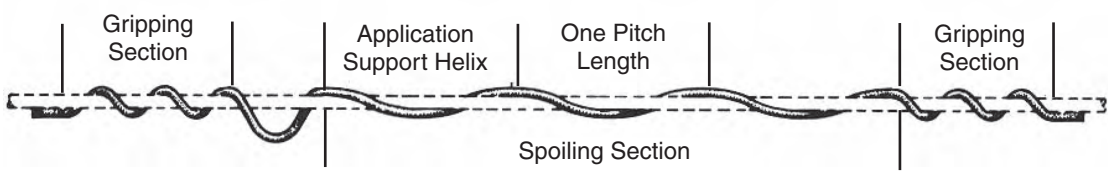
The central spoiling section of the FIBERLIGN Air Flow Spoiler suppresses galloping or dancing motion of OPGW or ADSS cables by providing a constantly changing aerodynamic profile.

Helical gripping sections on both ends of the FIBERLIGN Air Flow Spoiler secure the unit to the cable while minimizing compressive clamping forces.

The number and placement of FIBERLIGN Air Flow Spoilers in each span are determined by a computer program which considers the results of ongoing field and laboratory research.

Consult Preformed Line Products for specific recommendations.

FIBERLIGN Air Flow Spoiler



Patented

FIBERLIGN® In-Span Storage "NM"

FIBERLIGN In-Span Storage with Non-Metallic ("NM") Storage Racks for ADSS Cable

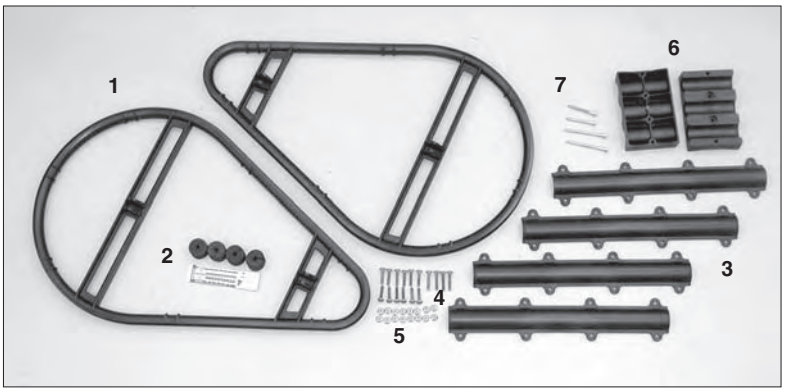
GENERAL INFORMATION

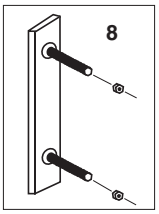
FIBERLIGN IN-SPAN Storage Systems are complete systems for storing slack All-Dielectric Self Supporting (ADSS) cable or slack ADSS cable and a butt splice closure in the span.

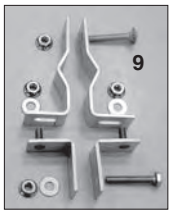
This system is provided with 18" (457 mm) Non-Metallic ("NM") storage racks. All necessary hardware is provided with the option to include cable ties. Note: Splice Closures and dead-ends are sold separately.

FEATURES

- Neatly organizes storage of cable and splice closures in the span instead of on the structure
- Minimizes infringement of poles space
- Maximum cable loop support with 18" (457 mm) storage racks
- No limit to the amount of cable that can stored.
- Non-metallic cable protection bracket that minimizes cable abrasion and organizes cable against pole
- Peel-away grommet allows full range taking from .400" - 1.00" (10 mm - 25 mm) diameter cable – "NM" systems only
- Optional Cable ties can be ordered with kits or separately











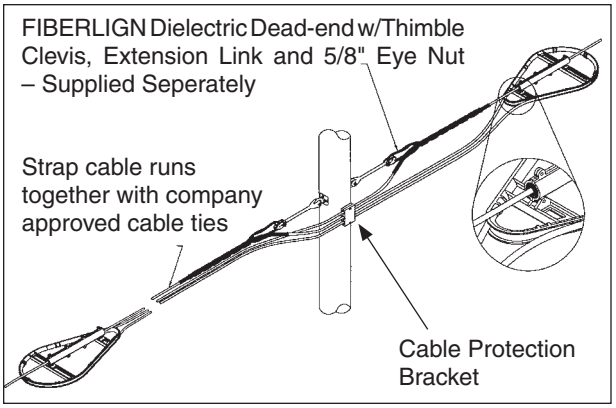


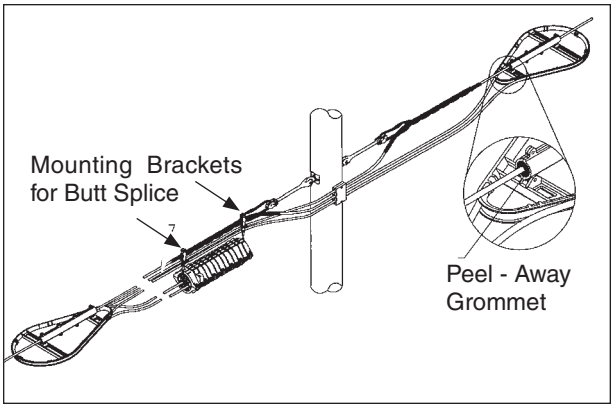


NOMENCLATURE

1. 18" OPTI-LOOP Storage Rack
2. Peel-Away Elastomer Grommet
3. Rack Mounting Sleeve Halves
4. Phillips Stainless Steel Bolts
5. Stainless Steel nuts
6. Pole Mounted Cable Protection Bracket
7. 1/4" Lag Bolts with Flat Washers
8. Banding Bracket adaptor for Protection Bracket mounting to concrete or steel poles
9. Universal Mounting Bracket
10. COYOTE® Closure Brackets for COYOTE PUP, 6 x 22, and 8.5 x 22 Closures
11. COYOTE Runt Brackets
12. COYOTE Splice Case Brackets (or aerial hanger brackets) included with every Stainless Steel COYOTE Splice Case – Not with the In-Span Kit COYOTE Runt brackets
13. Universal Strand Adapter Bracket to interface with any aerial strand bracket that connects Butt Splice

FIBERLIGN® In-Span Storage "NM"





INSTALLATION INFORMATION

FIBERLIGN IN-SPAN "NM" systems has a peel-away grommet that accommodates cable diameters from .40" (10 mm) through 1.00" (25 mm). Application procedures included with the product can also be found on PLP's website. Instructions are provided for cable storage only, as well as cable storage with butt splice. For wood pole installations, the Cable Protection Bracket is mounted with lag screws. For concrete or steel poles, a banding bracket can be used to mount the cable protection bracket.

Cable ties are used to strap the cable to storage racks and cable runs together. PLP offers UV resistant cable ties with the kits as an option.

ORDERING INSTRUCTIONS

To order the FIBERLIGN IN-SPAN STORAGE "NM" simply select the desired kit from the catalog table in this section. You can order kits for cable storage only, or kits for butt splice applications. The butt splice kits include the appropriate mounting brackets for the respective COYOTE Closure or Splice Case product. The Universal Strand Adaptor Bracket provides a 0.3" (7.6 mm) diameter mounting interface for aerial hanger brackets designed to connect butt splices to messenger strand.

To order Mounting Brackets seperately see table later in this section.

FIBERLIGN IN-SPAN "NM" FOR CABLE STORAGE AND COYOTE CLOSURE OR SPLICE CASE MOUNTING. (Splice Closure and Dead-end sold separately)

FIBERLIGN In-Span Storage "NM"	
Catalog Number	**Description**
710011124	In-Span Storage "NM" Cable Storage only
710011188C	In-Span Storage "NM" with COYOTE Closure (PUP 6x22 & 8x22 in) Mounting Brackets
710011188R	In-Span Storage "NM" with COYOTE RUNT Mounting Brackets
710011188S	In-Span Storage "NM" with COYOTE Splice Case Mounting Brackets
710011189	UV resistant Cable Ties - Package of 50 ties
710011008	Banding Bracket Adaptor – Protection Block Mounting on Steel or Concrete Poles
710011124T	In-Span "NM" and 50 Cable Ties
710011188CT	In-Span Storage "NM" with COYOTE Closure (PUP 6x22 & 8x22 in) Mounting Brackets & 50 Cable Ties
710011188RT	In-span Storage "NM" with COYOTE RUNT Mounting Brackets & 50 Cable Ties
710011188ST	In-span Storage "NM" with COYOTE Splice Case Mounting Brackets & 50 Cable Ties
710011400	In-span Storage "NM" with universal strand adaptor bracket adapts any butt splice aerial hanger bracket designed for messenger

FIBERLIGN® In-Span Storage "NM"

Mounting Kits

Separate Mounting Kits are also available for mounting COYOTE Closures or COYOTE Splice Cases directly to a FIBERLIGN Dielectric Dead-end or ADSS Armor Rods.

Cat. No.	Description
8003459	Mounting Kit for COYOTE Closures (icluding COYOTE® PUP Closure), includes two End Plate brackets and one Universal Mounting Kit
8003474	Mounting Kit for COYOTE RUNT Closure
8003460	Mounting Kit for COYOTE Splice Cases (all sizes), includes one Universal Mounting Kit
80807541	Universal Strand Adaptor Bracket to interface with any aerial strand bracket that connects Butt Splice

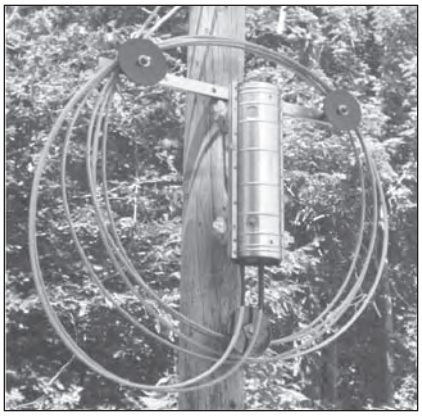
ADSS Armor Rods

Separate ADSS Armor Rods are available for ADSS cable protection at locations where Mounting Brackets are installed away from Dead-ends. All sets have an overall length of 27" (0.68 meters).

Catalog Number	Cable O.D. Range		Rod Dia. (mm)	Rods per set	Subsets	Color Code
	in	mm				
AR-0172	.400-.450	10.1-11.4	.102" (2.6)	15	5-5-5	Red
AR-0173	.451-.509	11.5-12.9	.102" (2.6)	15	5-5-5	Black
AR-0174	.510-.575	13.0-14.6	.102" (2.6)	16	4-4-4-4	Blue
AR-0175	.576-.649	14.7-16.4	.102" (2.6)	18	5-5-4-4	Orange
AR-0176	.650-.730	16.5-18.5	.121" (3)	17	5-4-4-4	Green
AR-0177	.731-.820	18.6-20.8	.121" (3)	19	5-5-5-4	Brown
AR-0178	.821-.920	20.9-23.3	.136" (3.5)	19	5-5-5-4	Yellow
AR-0179	.921-1.007	23.4-25.6	.146" (3.7)	20	5-5-5-5	Purple

FIBERLIGN® Cable Storage Systems

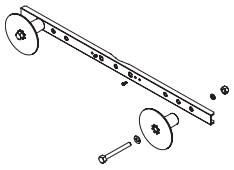
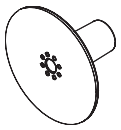
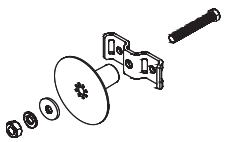
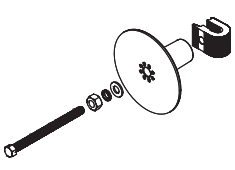
FIBERLIGN Vertical Cable Storage Assemblies for ADSS or OPGW Fiber Optic Cable



GENERAL INFORMATION

FIBERLIGN Vertical Cable Storage Assemblies provide a method for storing ADSS or OPGW cable on wood poles, metal poles, concrete poles, and lattice towers. Four basic kits can be combined into various configurations to suit your specific application. Cable ties (not supplied) can be used to neatly group cable and secure cable to spools if desired. The fundamental component of each basic kit is a durable urethane storage spool that provides a smooth curved surface for proper support of the stored cable. The four basic kit catalog numbers are found in the following table.

FIBERLIGN CABLE STORAGE ASSEMBLIES: BASIC KIT INFORMATION

CATALOG NUMBER	KIT DESCRIPTION	STORAGE SPOOL (mm)	FEATURE COMPONENT INFORMATION (mm)	FASTENERS (5/8"-11 UNC THREAD) (mm)	OPTIONAL MOUNTING APPLICATIONS	IMAGE OF KIT
8003493	Vertical Cable Storage Assembly	Qty 2 7.5" (191) Flange OD, 2.2" (56) Stem OD, 4.1" (104) Stem Length	Cross Arm Galvanized Steel 2" x 1" (51 x 25.4) C-channel x 44" (1118) long, Max Spool to Spool Position 35" (889)	2 each: 6" (152) long bolt Flat Washer, Lock Washer, Hex Nut, 5/16" (8) Self tap Screw*	Thru Bolt, DA bolt, or Banded	
8003503	Cable Storage Spool	Qty 1 7.5" (191) Flange OD, 2.2" (56) Barrel OD, 4.1" (104) Stem Length	Polyurethane Spool	None	Thru Bolt or DA Bolt	
8003503B1	Cable Storage Spool w/Banding Bracket	Qty 1 7.5" (191) Flange OD, 2.2" (56) Barrel OD, 4.1" (104) Stem Length	Banding Bracket, Galvanized Steel 6" long x 2.3" wide,(152 x 58) Accepts Max 1-1/4" (32) metal band	1 each: 6" (152) long Bolt, Flat Washer, Lock Washer, Hex Nut	Banding	
8003503LTC1	Cable Storage Spool & Lattice Tower Clamp	Qty 1 7.5" (191) Flange OD, 2.2" (56) Barrel OD, 4.1" (104) Stem Length	C-Clamp Aluminum alloy, Mounts on Max 5/8" (16) thick tower leg	1 each: 8" (203) long Bolt, Flat Washer, Lock Washer, Hex Nut	Clamp for Lattice Tower	

Note: Thru Bolts, Double Arming Bolts (DA Bolts), and bands are not supplied with the kits.

Features:

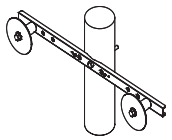
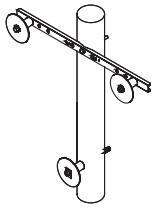
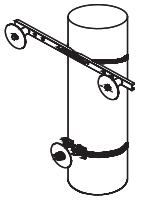
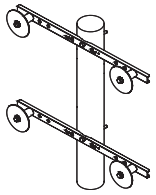
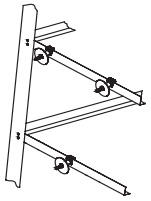
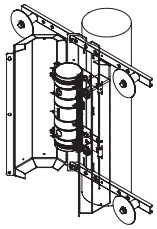
- Flexible Configurations
- Optional Mounting conforms to most structures
- Accommodates cable manufacturer suggested storage diameters
- Black Urethane Storage Spool provides soft curved support for cable
- Steel Components are galvanized or zinc plated.
- COYOTE Defender Application - Simple Self Tapping Screw stops.

FIBERLIGN® Cable Storage Systems

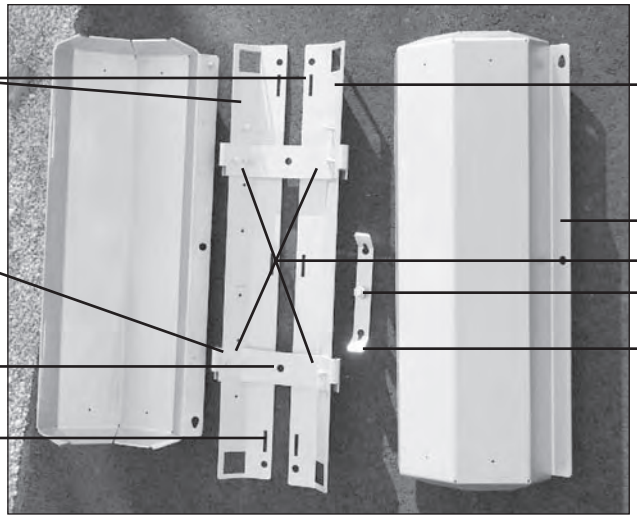
ORDERING INSTRUCTIONS

The basic kits can be combined into various configurations. Here are some suggested arrangements:

FIBERLIGN VERTICAL CABLE STORAGE KIT COMBINATIONS FOR SUGGESTED CONFIGURATIONS

CONFIGURATION DESCRIPTION	CATALOG COMBINATION & QUANTITY		CONFIGURATION
	ORDER QUANTITY	CATALOG NUMBERS	
Single Arm	1	8003493	
Triple Spool/Single Arm	1	8003493	
	1	8003503	
Banded Triple Spool/ Single Arm	1	8003493	
	1	8003503B1	
Double Arm Application	1	8003569	
Lattice Tower Clamped Triple Spool	3	8003503LTC1	
COYOTE Defender Double Arm	1	8003569	

COYOTE® Defender



Nomenclature:

1. Mounting Frame
2. Hex Head Self Tapping Screws, 5/16"x1" Long
3. Adjustable Horizontal Bracket
4. Hex Head Bolt, 5/8"-11x1.5" Long
5. Door
6. Vertical Mounting Bracket for Splice Cases
7. Adapter Bracket for COYOTE Closures

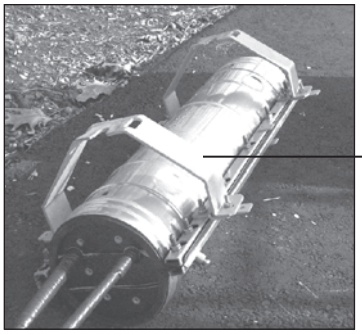
GENERAL INFORMATION

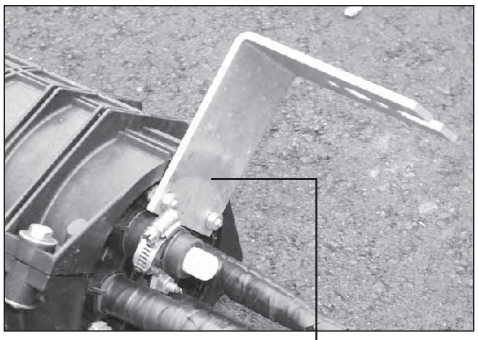
The COYOTE Defender provides added protection for a) COYOTE Splice Case sizes 6.5", 8", and 9.5" up to 28" long and b) COYOTE Closure sizes 6.0" and 8.5" – all lengths. The Mounting Frame comes assembled from the factory – Hinge Brackets and Vertical Bracket components are fastened with 5/16"x1" long self tapping screws. The Hinge Brackets are positioned 19" apart to mount the 28" long COYOTE Splice Cases. All other Splice Cases and Closures are accommodated with the Adjustable Horizontal Bracket. Two large doors and the mounting frame surround the closure or splice case and allow easy access for future maintenance or expansion. The frame can be installed first, followed by each door (door weight 38# each) thus reducing the chore of lifting a bulky steel unit – this makes the Lineman's task manageable and less hazardous.

MOUNTING OPTIONS: The COYOTE Defender can be mounted with thru bolts, DA bolts, or banding. The frame will accept standard 5/8" thru bolts and DA bolts. Use the mounting frame as a template to locate positions for drill through on wood pole structures. Double Arming bolts must not extend 1.5" beyond the Hinge Bracket surface to avoid splice case interference. Banding slots are provided in 6 positions along the frame. The band slots will accept up to 1.5" wide banding. For banding applications, 5/8" x 1.5" bolts are used to provide attachment to the mounting frame.

ORDERING INSTRUCTIONS

Two catalog numbers are available, one for COYOTE Splice Case applications, and the other for the COYOTE Closure applications. The Defender kit for the COYOTE SPLICE CASE (#8003491) includes a Vertical mounting bracket kit to hang the case onto the mounting frame of the Defender. Likewise, the Defender kit for the COYOTE Closure (#8003492) includes an adapter bracket kit to hang the closure onto the mounting frame of the Defender.

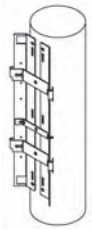
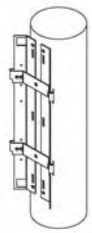
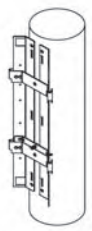
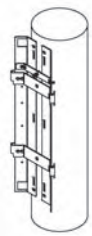




COYOTE® Defender

The Adjustable Horizontal Bracket is not required for the 28" long Splice Cases. However this bracket can be positioned on the mounting frame to adapt the other sizes - these positions are listed in the FRAME CONFIGURATION column of the following table.

Coyote Defender Catalog Numbers and Frame Configuration

Application		Defender Catalog No.	Frame Configuration
Type	**Size (Mm)**		
Coyote Splice Case	6.5" X 22" (165 X 559)	8003491	
	6.5" X 28", 8" X 28", 9.5" X 28" (165 X 711, 203 X 711, 241 X 711)	8003491	
Coyote Closure	6" X 17" Coyote Pup (152 X 432)	8003492	
	6" X 22", 8.5" X 22" (152 X 559, 216 X 559)"	8003492	

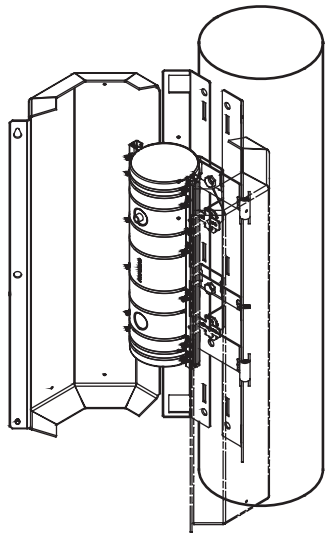
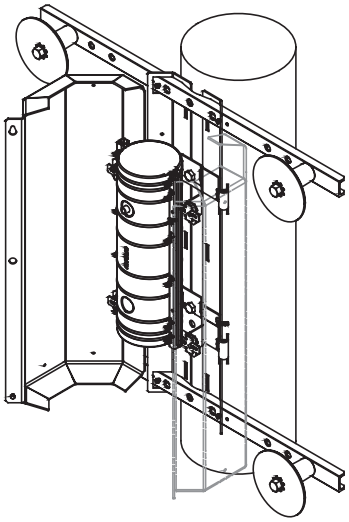
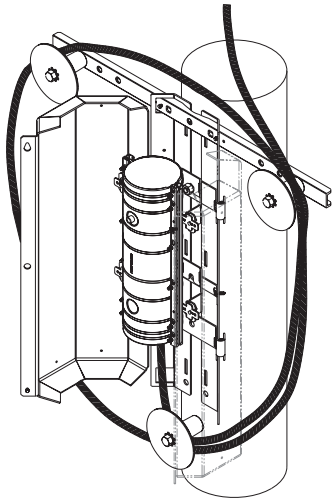
Accessories:
Vertical Cable Storage Assemblies:
1) Double Arm Configuration: Order 1 Ea. Catalog No. 8003569
2) Triple Spool /single Arm :order 1 Ea. Cat No. 8003493 And 1 Ea. Cat No. 8003503
3) Banded Triple Spool/ Single Arm: Order 1 Ea. Cat No. 8003493 And 1 Ea. Cat. No. 8003503b1
Note: The Coyote Defender Frame Accepts The Standard Cross Arm Of Vertical Cable Storage Assemblies, 5/16"x1" Self Tapping Screws Lock Arms Into Place

COYOTE® Defender

ACCESSORIES

Vertical Cable Storage Assemblies found earlier in this section can be used with the COYOTE Defender. Large rectangular slots at the top and bottom of the mounting frame accept the Cable Storage Cross Arm.

COYOTE Defender with and Without Vertical Cable Storage Accessories

		
Basic Kit*	**Kit With Double Arm Storage Assemby***	**Kit With One Cable Storage Assembly and One Spool***

***Splice Case not included**

PREFORMED LINE PRODUCTS

Section 23 – Fiber Optics: FIBERLIGN® Hardware for Aerial FTTP Applications

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FIBERLIGN® Midspan Drop 23-3

FIBERLIGN® LITE Support 23-4

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FIBERLIGN® Products for Figure 8 Drop Cable Applications

FIBERLIGN® Figure 8 Drop Cable Dead-end 23-7

FIBERLIGN® LITE Support 23-8

FIBERLIGN® Tangent Support 23-9

FIBERLIGN® Products for ADSS Applications

GENERAL INFORMATION

All Dielectric Self Supporting (ADSS) cables designed for the last mile are relatively small and have very low load requirements for pole-to-pole distribution and pole-to-premise service drops. Distribution span lengths are typically less than 300' and service drops are typically less than 150'. ADSS type drop cables are supported with non-metallic strength members and protected by an outer plastic sheath. This section covers attachment hardware products for ADSS cables followed by similar products for Figure 8 cables.

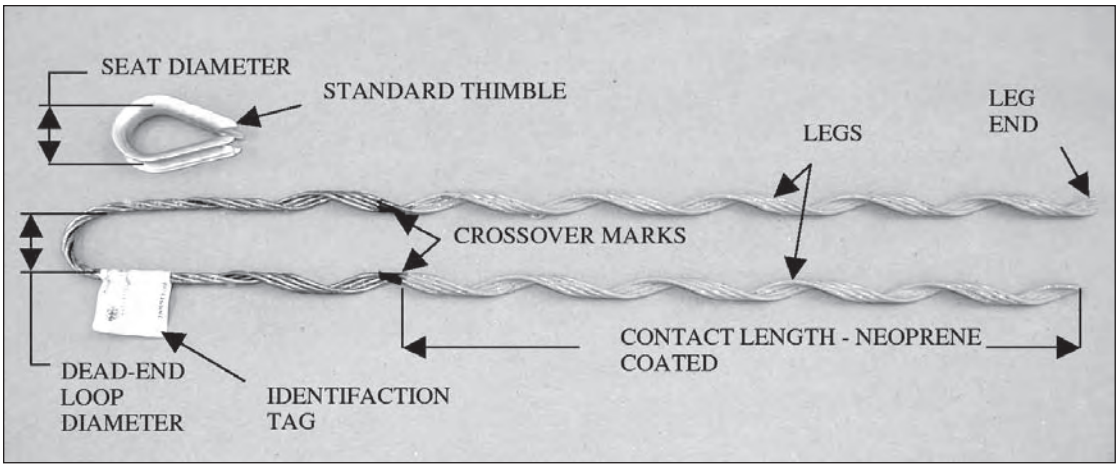
ADSS Drop cables are available in round and flat profile construction. FIBERLIGN® Products for ADSS are designed for both round and flat profile cables.

FIBERLIGN Products for ADSS include:

- FIBERLIGN® ADSS Drop Cable Dead-end
- FIBERLIGN® Midspan Drop
- FIBERLIGN® LITE Support
- FIBERLIGN® Tangent Support

FIBERLIGN® Products for ADSS Applications

FIBERLIGN® ADSS Drop Cable Dead-end



Formed Wire Design

Classified as a formed wire design, The FIBERLIGN® ADSS Drop Cable Dead-end is able to secure the soft pliable surface of a drop cable without causing attenuation. Unlike wedge type dead-ends, the formed wire dead-end effectively transfers the axial load on the cable at the end of the dead-end legs to a low uniform radial compression near the dead end loop. This transition of force is distributed over the length of the product thus allowing secure holding capability with minimized pressure on the cable or messenger.

It was determined through testing that traditional wedge clamps used on copper communications cables can cause fiber attenuation on ADSS drop cables due to concentrated loads from high localized pressure. In addition, the single wire bail of the wedge clamp has much less strength than the multi-wire loop section of the formed wire design. The FIBERLIGN® ADSS Drop Cable Dead-end is applied directly to the pliable surface of the cable without damage to the jacket or fiber signal. The corrosion resistant aluminum alloy dead-ends are neoprene coated to provide a compatible interface with the polyethylene cable jacket.

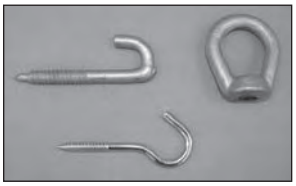
Drop Cable System Characteristics:
Due to the variety of cable designs from various manufacturers, the holding capabilities of drop cable dead-ends will vary as well. The following characteristics are presented for a general idea of the typical requirements for a drop cable application (see Caution Statement below).

- Distribution Max Span Length Approx 300' (91 m)
- Service Drop Max Span Length Approx. 200' (61 m)
- Installation Load Approx. 70# to 100# (311 to 444 N)
- Loaded Tension Approx. 200# to 500# (890 to 2220N)

Caution: Contact the cable manufacturer for specific cable capabilities to determine proper sag and tension levels for your system.

Attachment Fittings:
The loop of the FIBERLIGN ADSS Drop Cable Dead-end will fit over a minimum diameter of 1.0" (25 mm) and a maximum diameter of 1-5/8" (41 mm). The dead-end is designed to fit over common guy wire dead-end pole fittings. Thimbles can be used for fittings that may cause high stress in the loop of the dead-end. PLP offers a ½" standard thimble P/N 00065474. Optimal fittings provide proper loop support without a thimble.

Thimble Required



Optimal Fittings – No Thimble Required

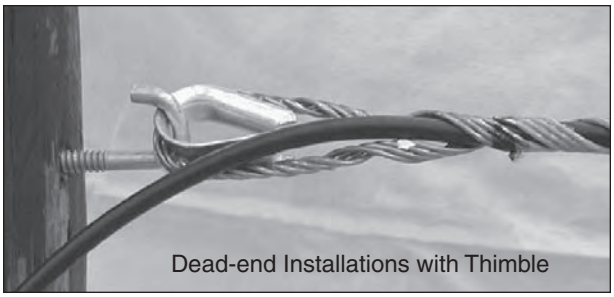


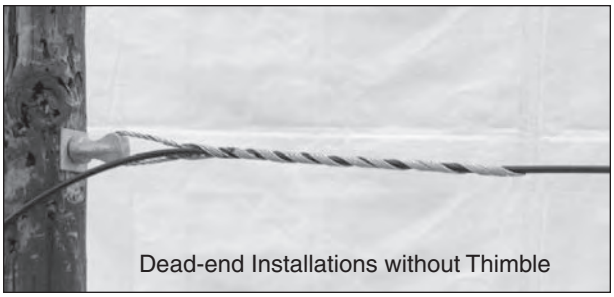
FIBERLIGN® Products for ADSS Applications

FIBERLIGN® ADSS Drop Cable Dead-end continued

ORDERING INSTRUCTIONS

- FIBERLIGN ADSS Drop Cable Dead-end (Round profile) – Select the appropriate FIBERLIGN ADSS Drop cable Dead-end based on the cable diameter – the first catalog table in this section lists the range for each dead-end. If your cable does not fall within any of the published ranges, please contact the PLP for further assistance. Add Suffix code "T" to receive a ½" Galvanized Steel Standard Thimble with the dead-end.
- FIBERLIGN ADSS Drop Cable Dead-end (Flat profile) – FIBERLIGN ADSS Drop Cable dead-ends are listed for the appropriate flat cable design. If your cable does not fall within any of the published ranges, please contact PLP for part number and further assistance. Add Suffix code "T" to receive a ½" Galvanized Steel Standard Thimble with the dead-end.


Dead-end Installations with Thimble


Dead-end Installations without Thimble

FIBERLIGN(R) ADSS Drop Cable Dead-ends – Round Profile

ADSS Drop Dead-end Catalog No.[1]	Cable Diameter Range[2] Inches	mm	Color Code	Length Inches	Units Per Carton	Wt./lbs.
288811285	0.251-0.260	6.4-6.6	Red	18	50	4
288811337	0.301-0.310	7.6-7.9	Red	22	50	8
288811274	0.351-0.360	8.9-9.1	Black	24	50	9
288811269	0.361-0.370	9.2-9.4	Black	22	50	8
288811353	0.371-0.380	9.4-9.6	Yellow	27	50	12

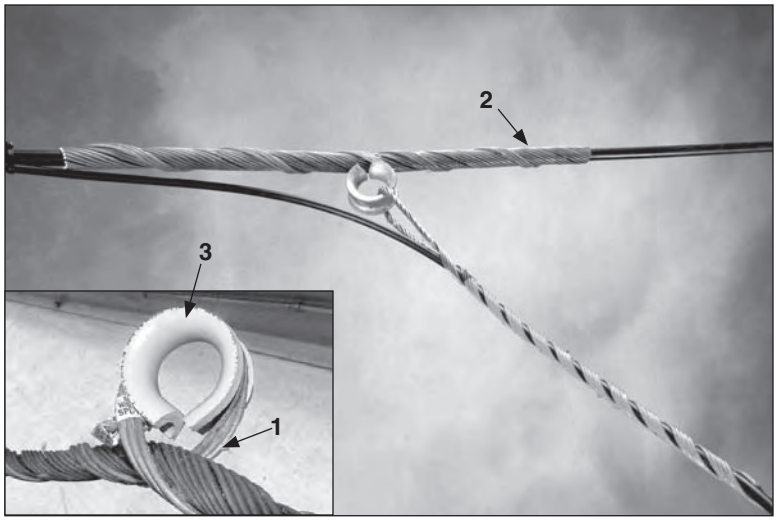
FIBERLIGN(R) ADSS Drop Cable Dead-ends – Flat Profile

ADSS Drop Dead-end Catalog No.[1]	Flat Cable Information[2] Dimension[3] L x W inches (mm)	Mfg.	Color Code	Length Inches	Units Per Carton	Wt./lbs.
288811353	.330 x .172 (8.3 x 4.3)	Corning	Yellow	27	50	12

[1] Add suffix code "T" to dead-end catalog number to receive P/N 00065474 Thimble. P/N 00065474 is a 1/2" standard thimble - weight is 0.12 lbs. each.
[2] Contact PLP for cable applications not shown
[3] Dimensions L x W represent Length x Width of the Flat Cable Cross-section.

FIBERLIGN® Products for ADSS Applications

FIBERLIGN® ADSS Midspan Drop



NOMENCLATURE

1. Midspan Connector
2. Structural Reinforcing Rods
3. Thimble

APPLICATION

If direct attachment from the pole to the premise is obstructed or restricted for clearance reasons, it may be beneficial to re-direct cable drops from mid-span. The FIBERLIGN® ADSS Midspan Drop (FAMD) can be applied anywhere along the backbone cable. The ADSS Backbone cable must be strong enough to endure the system side-load requirements. The FAMD can be loaded to 500# maximum perpendicular load.

The Structural Reinforcing Rods (SRR) protect the ADSS branch cable from excessive bending and allow side-loads without fiber attenuation. The Midspan Connector is installed over the SRR and provides the loop attachment point. A durable PVC thimble reinforces the loop area of the FAMD and provides proper loop support for the joining drop cable dead-ends. No tools are required for installation.

CAPABILITIES

- Connect up to two Cable Drops
- Supports FIBERLIGN® Drop Cable Dead-ends
- Maximum Perpendicular Load 500#

ORDERING INSTRUCTIONS

Select the appropriate FAMD based on the ADSS Branch Cable diameter.

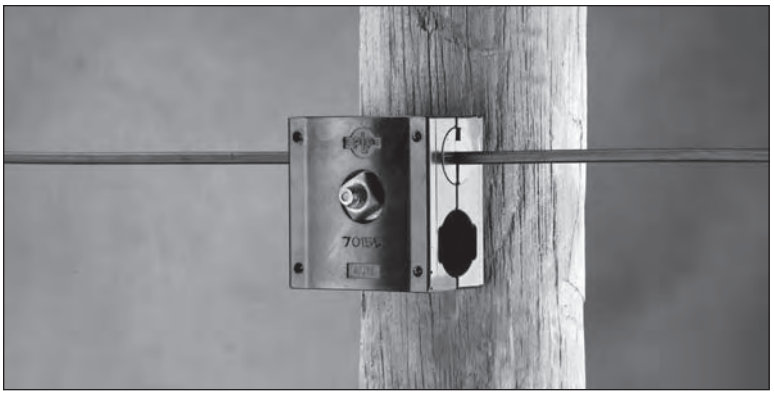
ADSS Midspan Drop

Catalog Number	Cable Range		Color Code
	Inches	mm	
3800005	.350-.399	8.9-10.1	White
3800006	.400-.450	10.2-11.4	Red
3800007	.451-.509	11.5-12.9	Black
3800008	.510-.575	13.0-14.6	Blue
3800009	.576-.649	14.7-16.5	Orange
3800010	.650-.730	16.6-18.5	Green
3800011	.731-.820	18.6-20.8	Brown
3800012	.821-.920	20.9-23.4	Yellow
3800013	.921-1.007	23.5-25.6	Purple

Overall Length = 27 inches, 685 mm.
Thimble Catalog No. 00070253

FIBERLIGN® Products for ADSS Applications

FIBERLIGN® LITE Support for ADSS Drop Cables



APPLICATION

As referenced in Section 21 of this catalog, the FIBERLIGN® LITE Support (FLS) sizes were expanded to accommodate drop cables. For service drops, the FLS can provide a solution for intermediate pole locations. The FLS is the perfect product for distribution of multiple drop cables in an FTTP system as each FLS can support two cables and the FLS has stackable housings. One 5/8" double arming bolt or through bolt can secure stacked FLS units within the same pole space. This keeps cables neatly secured to the pole.

CAPABILITIES

- Accepts round and flat profile ADSS drop cables
- Span lengths up to 300' nesc heavy
- Line angles up to 20 degrees
- Multi-cable options
- Two cables per housing
- Unbalanced load up to 130 lbs. Depending on cable diameter.
- Stackable housings for 4 or more cables

ORDERING INSTRUCTIONS

- FIBERLIGN LITE SUPPORT (round profile) – Select the appropriate FIBERLIGN ADSS LITE Support based on the cable diameter. For sizes not listed, a table of complete sizes can be found in section 21. Add Suffix code “B1” to receive the banding hardware kit.

- FIBERLIGN LITE SUPPORT (flat profile) – for sizes from (.14" x .28") to (.18" x .44") use Catalog No. 4800107. Metric (3.5mm x 7.1 mm) to (4.5mm x 11.2mm).

Catalog Number	Insert Size	Cable Diameter Range[1]			
		Min. (in)	Max. (in)	Min. (mm)	Max. (mm)
4800107	SMALL	0.250	0.280	6.35	7.12
4800108		0.281	0.304	7.13	7.73
4800109		0.305	0.375	7.74	9.53
480011817	LARGE	0.250	0.280	6.35	7.12
480011818		0.281	0.304	7.13	7.73
480011819		0.305	0.375	7.74	9.53
480011820	DUAL (Small & Large)	0.250	0.280	6.35	7.12
480011821		0.281	0.304	7.13	7.73
480011822		0.305	0.375	7.74	9.53

[1] Round Profile Cable Diameter Range. Flat cables use Catalog No. 4800107.
Sizes up to .700" for the Small Insert and 1.029" for the Large Insert can be found in the earlier section.
Add Suffix Code B1 for banding hardware kit that includes Retaining bolt, washer and lock washer.

FIBERLIGN® Products for ADSS Applications

FIBERLIGN® TANGENT Support for ADSS Drop Cables



APPLICATION

The FIBERLIGN® Tangent Support (FTS) offers another method of supporting ADSS Drop Cables with excellent unbalance load capability and bend relief support. This product is designed to connect directly to J-hooks for a economical alternative. One FTS can reduce pole clutter by replacing two dead-end and j-hook connections.

For multi-cable attachments, a long loop version of the FTS can be provided. This will allow two vertically spaced cables to suspend from the same j-hook.

CAPABILITIES

- Accepts round and flat profile ADSS drop cables
- Span lengths up to 300' NESC heavy
- Line angles up to 20 degrees
- Multi-cable options
- Short loop design standard
- Long loop design for multi-cable
- Unbalanced load
- 100 To 200 lbs. Depending on cable dia.

FEATURES AND MATERIALS

- HIGH Strength Stainless Steel
- Relieved Rod ends – safe against cable jacket
- Elastomer Coating for soft pliable interface

ORDERING INSTRUCTIONS

- FIBERLIGN Tangent Support (Round profile) – Select the appropriate FIBERLIGN Tangent Support based on the cable diameter. Contact PLP technical support for sizes not listed.
- FIBERLIGN Tangent Support (Flat profile) – Select the appropriate FIBERLIGN Tangent Support based on the Cable information referenced. Contact PLP technical support for sizes not listed.

FIBERLIGN® Tangent Supports for Round Cable Profile

Catalog No.	Cable Range (inches)		Cable Range (mm)		Color Code	Overall Length (inches)	Overall Length (mm)
6126001	.251	.260	6.4	6.6	Red	20	508
6126002	.261	.270	6.7	6.9	Blue	21	533
6126003	.271	.280	6.8	7.1	Green	21	533
6126004	.281	.290	7.2	7.4	Black	22	559
6126005	.291	.300	7.5	7.6	Purple	22	559
6126006	.301	.310	7.7	7.9	Yellow	23	584
6126007	.311	.320	8.0	8.1	Orange	24	610
6126008	.321	.330	8.3	8.4	Red	25	635
6126009	.331	.341	8.5	8.7	Blue	25	635
6126010	.342	.350	8.8	8.9	Green	26	660
6126011	.351	.360	9.0	9.1	Black	27	686
6126012	.361	.370	9.2	9.4	Purple	28	711
6126013	.371	.380	9.5	9.7	Yellow	29	737
6126014	.381	.390	9.8	9.9	Orange	30	762

FIBERLIGN® Tangent Supports for Flat Cable Profile

Catalog No.	Flat Cable Information Cable Range (mm)		Color Code	Overall Length (inches)	Overall Length (mm)
	Dimension LxW inches (mm)	Mfg.			
6126009	.31 x .15 (7.8 x 3.7)	DRAKA Comteq	Blue	25	635
6126010	.31 x .15 (7.8 x 4.3)	OFS	Green	24	610
6126012	.33 x .17 (8.5 x 4.3)	Corning	Purple	28	711
6126013	.33 x .20 (8.5 x 5.0)	Pirelli	Yellow	29	736

FIBERLIGN® Products for Figure 8 Drop Cable Applications

GENERAL INFORMATION

Figure 8 cables designed for the last mile are relatively small and have very low load requirements for pole-to-pole distribution and pole-to-premise service drops. Distribution span lengths are typically less than 300' and service drops are typically less than 150'. Figure 8 type drop cables are typically supported with metallic strength members and protected by an outer plastic sheath. A web joins the messenger component to the fiber optic component. This section covers attachment hardware products for Figure 8 Drop cables.

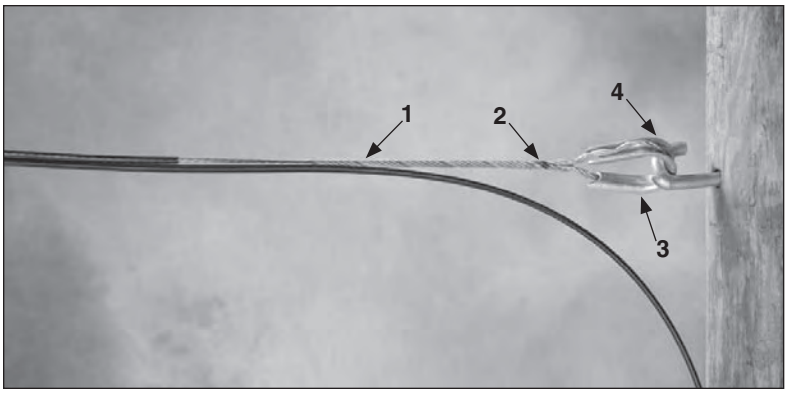
Messenger materials vary from galvanized steel to stainless steel material.

FIBERLIGN Products for ADSS include:

- FIBERLIGN® Drop Cable Dead-end
- FIBERLIGN® LITE Support
- FIBERLIGN® Tangent Support

FIBERLIGN® Products for Figure 8 Drop Cable Applications

FIBERLIGN® Figure 8 Drop Cable Dead-end



NOMENCLATURE

1. Dead-end
2. Crossover Mark
3. Thimble
4. Loop

APPLICATION

The FIBERLIGN® FIGURE 8 Drop Cable Dead-end has high strength in a light-weight package. Simple to install, the dead-end is applied on the messenger component of the Figure 8 cable after separating the fiber component at the web.

Depending on the jacket adherence, the dead-end may be applied over the jacket or onto the bare messenger after the jacket is removed.

Materials:
FIBERLIGN FIGURE 8 Drop Cable dead-ends are made from corrosion resistant materials that match the messenger strand material.

Attachment Fittings:
The loop of the FIBERLIGN FIGURE 8 Drop Cable Dead-end will fit over a minimum diameter of 1.0" (25 mm) and a maximum diameter of 1-5/8" (41 mm). The dead-end is designed to fit over common guy wire dead-end pole fittings. Thimbles can be used for fittings that may cause high stress in the loop of the dead-end. PLP offers a 1/2" standard thimble P/N 00065474. Optimal fittings provide proper loop support without a thimble.

ORDERING INSTRUCTIONS

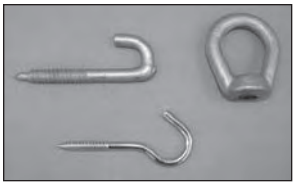
Select the appropriate dead-end based on the cable diameter. If your cable does not fall within any of the published ranges, please contact the PLP for further assistance. Add Suffix code "T" to receive a 1/2" Galvanized Steel Standard Thimble with the dead-end.

FIBERLIGN® Figure 8 Drop Cable Dead-ends

Catalog No.[1]	Cable Information[2] Dimension[3] L x W in. (mm)	Mfg.	Color Code	Length Inches
699911619[4]	.380 x .160 (9.6 x 4.1)	Corning	Yellow	13"
200811230	.300 x .170 (7.6 x 4.3)	Pirelli	Red	8"

[1] Add suffix code "T" to dead-end catalog number to receive P/N 00065474 Thimble. P/N 00065474 is a 1/2" standard thimble – weight is 0.12 lbs. each.
[2] Contact PLP for cable applications not shown
[3] Dimensions L x W represent Length x Width of the Figure 8.
[4] Apply over jacket

Thimble Required

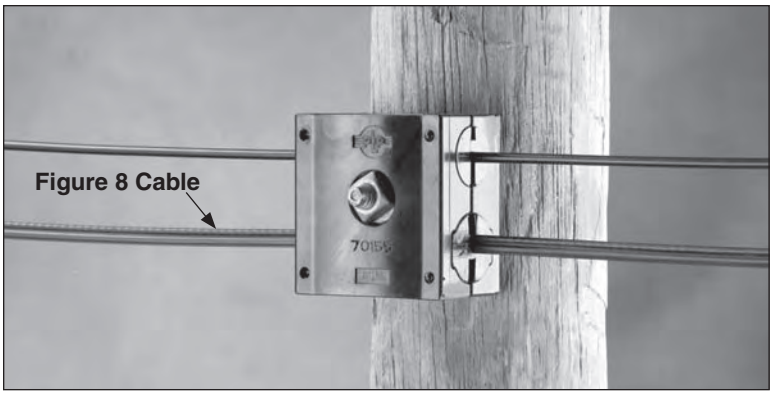


Optimal Fittings – No Thimble Required



FIBERLIGN® Products for Figure 8 Drop Cable Applications

FIBERLIGN® LITE Support for FIGURE 8 Drop Cables



Lite Support with dual inserts showing figure 8 and round drop cables.

APPLICATION

As referenced in Section 21 of this catalog, the FIBERLIGN® LITE Support (FLS) sizes were expanded to accommodate drop cables. For service drops, the FLS can provide a solution for intermediate pole locations. The FLS is the perfect product for distribution of multiple drop cables in an FTTP system as each FLS can support two cables and the FLS has stackable housings. One 5/8" double arming bolt or through bolt can secure stacked FLS units within the same pole space. This keeps cables neatly secured to the pole.

CAPABILITIES

- Secures most figure 8 cable in soft one-piece insert.
- Span lengths up to 300' NESC heavy.
- Line angles up to 20 degrees.
- Two cables per housing.
- Stackable housings for 4 or more cables.

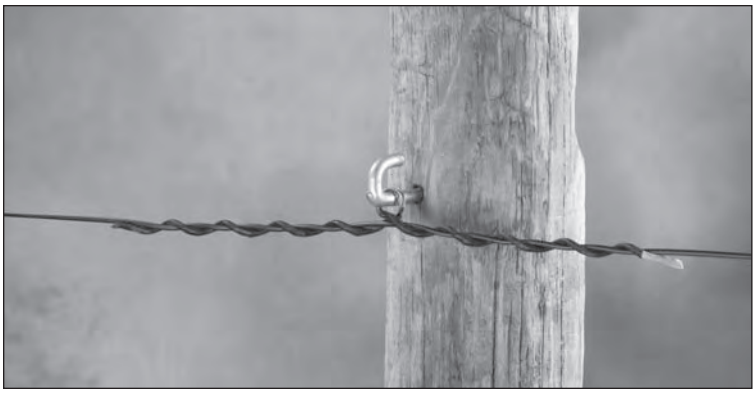
ORDERING INSTRUCTIONS

Small and Large inserts are offered. A Dual insert kit is available as well. Most all available Figure 8 cables can be accomodated with the insert designs listed below.

Catalog Number	Insert Size	Cable Dimension			
		Min. L X W (in)	Max. L X W (in)	Min. L X W (mm)	Max. L X W (mm)
4800107	SMALL	.3 x .16	.44 x .18	7.6 x 4.1	11.2 x 4.6
480011817	LARGE	.3 x .16	.44 x .18	7.6 x 4.1	11.2 x 4.6
480011820	DUAL (Small & Large)	.3 x .16	.44 x .18	7.6 x 4.1	11.2 x 4.6
Add Suffix Code B1 for banding hardware kit that includes retaining bolt, washer and lock washer.					

FIBERLIGN® Products for Figure 8 Drop Cable Applications

FIBERLIGN® Tangent Support for Figure 8 Drop Cables



APPLICATION

The FIBERLIGN® Tangent Support (FTS) offers another method of supporting FIGURE 8 Drop Cables with excellent unbalance load capability and bend relief support. This product is designed to connect directly to J-hooks for a economical alternative. One FTS can reduce pole clutter by replacing two dead-end and j-hook connections.

For multi-cable attachments, a long loop version of the FTS can be provided. This will allow two vertically spaced cables to suspend from the same j-hook.

CAPABILITIES

- Accepts figure 8 cable and flat profile ADSS drop cables
- Span lengths up to 300' NESC heavy
- Line angles up to 20 degrees
- Multi-cable options
- Short loop design standard
- Long loop design for multi-cable
- Unbalanced load
- 100 to 200 lbs. depending on cable dia.

FEATURES AND MATERIALS

- HIGH Strength Stainless Steel
- Relieved Rod ends – safe against cable jacket
- Elastomer Coating for soft pliable interface

ORDERING INSTRUCTIONS

Select the appropriate FIBERLIGN Tangent Support based on the cable diameter. Contact PLP technical support for sizes not listed.

FIBERLIGN® Tangent Supports for Figure 8 Cable

Catalog Number	Cable Information Cable Range (mm) Dimension LxW inches (mm)	Mfg.	Color Code	Overall Length inches (mm)
6126009	.300 x .170 (7.6 x 4.3)	Pirelli	Blue	25 (635)
6126015	.380 x .160 (9.6 x 4.1)	Corn-ing	Red	31 (787)

PREFORMED LINE PRODUCTS

Section 24 – Fiber Optics: COYOTE® Closures & Splice Cases

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COYOTE® Splice Case for OPGW & ADSS.....24-3
COYOTE® Dome Closure 24-4

For other COYOTE® Series Closures and Splice Cases, see the Communications Product Catalog at *www.preformed.com*

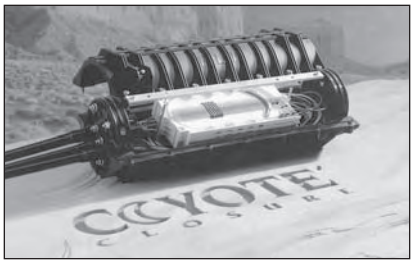
COYOTE® Closures for OPGW or ADSS

The COYOTE Closure Family features durable high-density thermoplastic shells that weigh less than their stainless steel counterparts. For loose tube buffer type fiber, the 6.0" x 22.0" COYOTE Closure handles up to 144 splices and the 8.5" x 22.0" COYOTE Closure handles up to 288 splices. The smaller 6.0" x 17.0" COYOTE PUP Closure can manage up to 48 fiber splices. The compact COYOTE RUNT Closure can manage up to 24 fiber splices.

The COYOTE PUP Closure allows future expansion or "growth" into a COYOTE Closure with minimal cost or disruption to the existing fibers.

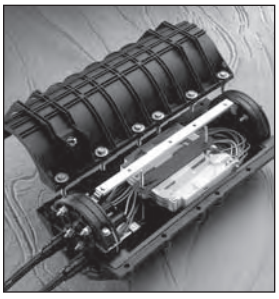
Features of the COYOTE Closure and COYOTE PUP Closure:

- For either dielectric or OPGW cables.
- High strength, low weight, low cost, non-metallic shells.
- Permanent neoprene gasket and LOCK-TAPE™ Sealing System allow re-entry without re-entry kits/supplies.
- Roomy buffer tube storage system and fiber management trays allowing large bend radii
- Fiber management system for loose tube buffer (see table). Other versions are readily available (see Section 1).
- End Plate System for butt splicing:
  - one Blank End Plate at one end
  - one Three-Section End Plate with six premolded cable entry ports; four ports for up to 7/8" OD dielectric cables (.785" max. OPGW OD) and two ports for up to 3/4" OD dielectric cables (.660" max. OPGW OD). Drilling not required.
- Optional Three-Section Four Port End Plate is available for cables up to 1-1/4" (See next page).
- Optional Future Cable Port Kits allow for adding cables in the future without disasasembling the End Plate. Kits must be ordered and installed during initial assembly.
  - Future cable port for 7/8" ports will accept cables up to .56"
  - Future cable port for 1" ports will accept cables up to .81"
  - Future cable port for 1-1/4" ports will accept cables up to 1"
- When adding future OPGW cables, order additional OPGW Strain Relief Bracket Kits.
- Closures are available that can accommodate other types of fiber optic cable.
- OPGW Strain Relief Bracket Kit provides brackets, clamps and moisture sealing tape required for installing two OPGW cables in End Plate.
- Splice Case Kits are available for OPGW with stainless steel loose-tube fiber bundles,consult factory for details.



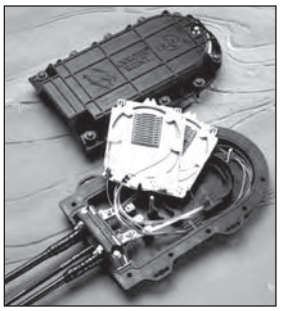
COYOTE Closure

- Two size closures available:
  - 6.0" x 22.0" (152 mm x 559 mm), accommodates up to 4 splice trays (up to 144 splices/closure)
  - 8.5" x 22.0" (216 mm x 559 mm) , accommodates up to 8 splice trays (up to 288 splices/closure).
- Both size closures have 36 count splice trays with three 12-count elastomeric splice blocks to retain mechanical splices or protected fusion splices.



COYOTE PUP Closure

- One small size, 6.0" x 17.0" (152 mm x 432 mm)
- Twelve-count fiber splice tray with elastomeric splice block to retain mechanical splices or protected fusion splices.
- Forty-eight fiber splice capacity.



COYOTE RUNT Closure

- One compact size, 8.5" W x 3" H x 14.75" L (216 mm W x 76 mm H x 375 mm L)
- Twelve-count fiber splice tray with elastomeric splice block to retain mechanical splices or protected fusion splices.
- Twenty-four fiber splice capacity.

COYOTE® Closures for OPGW or ADSS

To order, determine:
1. Number of fibers required now and in the future.
2. Cable size and type.
3. Structure type for mounting method.
4. Select catalog number from tables for appropriate items.

COYOTE Closures and Splice Trays	
Catalog Number	Description (mm)
COYOTE00058	6.0" x 22.0" (152 x 559) COYOTE Closure Kit for OPGW. Includes closure with organizer/storage compartment (Cat. No. 8006560); OPGW Strain Relief Bracket Kit (Cat. No. 8003296); all required supplies; plus one 36-count tray (Cat. No. 80805514). Will accommodate up to 4 trays per closure (144 maximum splice capacity).
COYOTE00059	8.5" x 22.0" (216 x 559) COYOTE Closure Kit for OPGW. Includes closure with organizer/storage compartment (Cat. No. 8006561); OPGW Strain Relief Bracket Kit (Cat. No. 8003296); all required supplies; plus one 36-count tray (Cat. No. 80805514). Will accommodate up to 8 trays per closure (288 maximum splice capacity).
COYOTE00060	6.0" x 22.0" (152 x 559) COYOTE Closure Kit for dielectric cables. Includes closure with organizer/storage compartment (Cat. No. 8006560); all required supplies plus one 36-count tray (Cat. No. 80805514). Will accommodate up to 4 trays per closure (144 maximum splice capacity).
COYOTE00061	8.5" x 22.0" (216 x 559) COYOTE Closure Kit for dielectric cables. Includes closure with organizer/storage compartment (Cat. No. 8006561); all required supplies plus one 36-count tray (Cat. No. 80805514). Will accommodate up to 8 trays per closure (288 maximum splice capacity).
80805514	36-Count Splice Tray with Elastomer Splice Blocks for COYOTE Closure
80805110	36-Count Splice Tray with fixed Splice Separators for COYOTE Closure

COYOTE PUP Closures	
Catalog Number	Description (mm)
8006652	6.0" x 17.0" (152 x 432) COYOTE PUP Closure for OPGW. Includes OPGW Strain Relief Kit (Cat. No. 8003296) and one 12-count Splice Tray (Cat. No. 80806033)
8006653	6.0" x 17.0" (152 x 432) COYOTE PUP Closure for ADSS/Buried Cables. Includes one 12-count Splice Tray (Cat. No. 80806033)
80806033	Twelve-count Splice Tray for COYOTE PUP Closure

COYOTE RUNT Closure	
Catalog Number	Description
8006695	COYOTE RUNT Closure for OPGW, includesOPGW Strain Relief Kit (Cat. No. 8003479) and one 12-count Splice Tray (Cat. No. 80806033)

Accessories for COYOTE Closures and COYOTE PUP Closures	
Catalog Number	Description (mm)
80805739	Three-Section Four Port End Plate Kit
8003289	Future Cable Port/Cable Installation Kit for 7/8" cable ports (0.56" (14) max. cable). Kit includes Future Cable Port (Cat. No. 8003371) and Future Cable Preparation Kit (Cat. No. 8003291) which can be ordered separately.
8003408	Future Cable Port/Cable Installation Kit for 1" cable ports (0.81" (21) max. cable). Kit includes Future Cable Port (Cat. No. 8003407) and Future Cable Preparation Kit (Cat. No. 8003291) which can be ordered separately.
8003410	Future Cable Port/Cable Installation Kit for 1-1/4" cable ports (1.0" (25)max. cable). Kit includes Future Cable Port (Cat. No. 8003409) and Future Cable Preparation Kit (Cat. No. 8003291) which can be ordered separately.
8003372	Vertical Pole/Structure Mounting Bracket Kit for COYOTE Closure and COYOTE PUP Closure
8003398	Adaptor Bracket for Hughes Brothers Bullet Shield. Bracket mounts to grounding studs on COYOTE Closure End Plate and fastener holes in the Hughes Brothers hanger provided with the Bullet Shield. Fits COYOTE Closure and COYOTE PUP Closure.
8003092	FIBERLIGN Fusion Splice Protectors. Non-heat shrink protector closes over splice and fits snugly into elastomer splice blocks in Splice Tray (Cat. No. 80805514). Package of 20
8003296	OPGW Strain Relief Bracket Kit

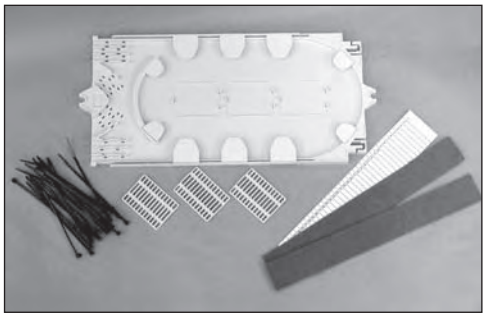
COYOTE® Splice Case for OPGW & ADSS

The enhanced COYOTE Splice Case with stainless steel shells now features the convenient COYOTE Fiber Management System found in the COYOTE Closure. The COYOTE Splice Case maintains the same air and watertight seal of our FIBERLIGN Stainless Steel Splice Case, but at less cost. For further information about the FIBERLIGN Stainless Steel Splice Case check with our customer service department. Features of the COYOTE Splice Case are listed below.

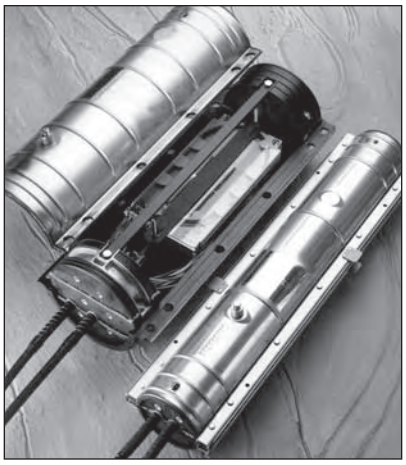
- For either ADSS or OPGW
- Impact and corrosion resistant stainless steel shells.
- LOCKBAR™ Sealing System allows re-entry without re-entry kits/supplies.
- High cable pull-out strength with LOCK-TAPE™ Sealant System.
- Fiber management system for loose tube buffer offered below. Other versions are readily available.
- 6.5" x 28" standard size (other sizes available for up to 648 splices).
- End Plate system available with blank End Plate at one end and at the other end:
  - One blank End Plate, or
  - One Three-section End Plate, field-drilled for any size/configuration.
- Standard size Splice Case accommodates up to four 36-count Splice Trays (144 max. splice capacity).
- Blank Splice Trays with three adhesive backed 12-count Elastomeric Splice Blocks (max. 36 fiber splices per tray)
- Elastomeric Splice Blocks firmly hold mechanical or protected fusion splices.
- Standard Splice Case can accommodate other types of fiber optic cables.
- Splice Case kits are available for OPGW with stainless steel loose-tube fiber bundles. Consult PLP for details.

Catalog Number	Description (mm)
8006654	6.5" x 28" (165 x 711) COYOTE Splice Case for ADSS or OPGW.* Includes Splice Case Kit, Green Sealant Kit (Cat. No. 8003411), one 36-count Splice Tray (Cat. No. 80805514), one blank End Plate and one Three-Section End Plate (field drilled for specific cable configurations and ODs) and L-Brackets for strength member tie-off.
80805514	36-count Splice Tray with Elastomeric Splice Blocks
8001127	Low Profile COYOTE Splice Tray for up to 36 fusion splices. Protected Fusion Splice only.
8003472	Vertical Mounting Bracket for 6.5", 8" and 9.5" (165, 203, and 241) COYOTE Splice Cases. Includes two brackets and associated hardware (curved or flat surfaces).
8003092	Fusion Splice Protector. Hinged plastic protector closes onto fusion splice area. The protector fits snugly into elastomer splice blocks (Cat. No. 80805514). Twenty (20) units per package.
80804986	Three-Section End Plate Kit for 6.5" (165) COYOTE Splice Cases. Field drilling required.
8003421	3/4" (19) Field-Installed Future Port/Cable Installation Kit [0.80" (20) max. cable]. Kit includes Future Cable Port (Cat. No. 8003412) and Future Cable Preparation Kit (Cat No. 8003420) which can be ordered separately.
8003422	1.0" (25) Field-Installed Future Port/Cable Installation Kit [1.0" (25) max. cable]. Kit includes Future Cable Port (Cat. No. 8003413) and Future Cable Preparation Kit (Cat No. 8003420) which can be ordered separately.

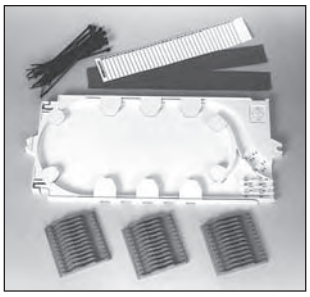
*Catalog No. 8006654 is suitable for OPGW cable with plastic loose tube buffer tubes that can be brought into the 36 count spllice trays. Other metalic non-flexible buffer tubes may require a transition compartment. Contact Preformed for more information.



Low Profile COYOTE Splice Tray 8001127



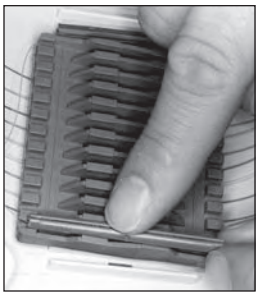
COYOTE Splice Case 8006654



Splice Tray 80805514



Vertical Mounting Bracket



Fusion Splice Protector 8003092

COYOTE® Dome Closure

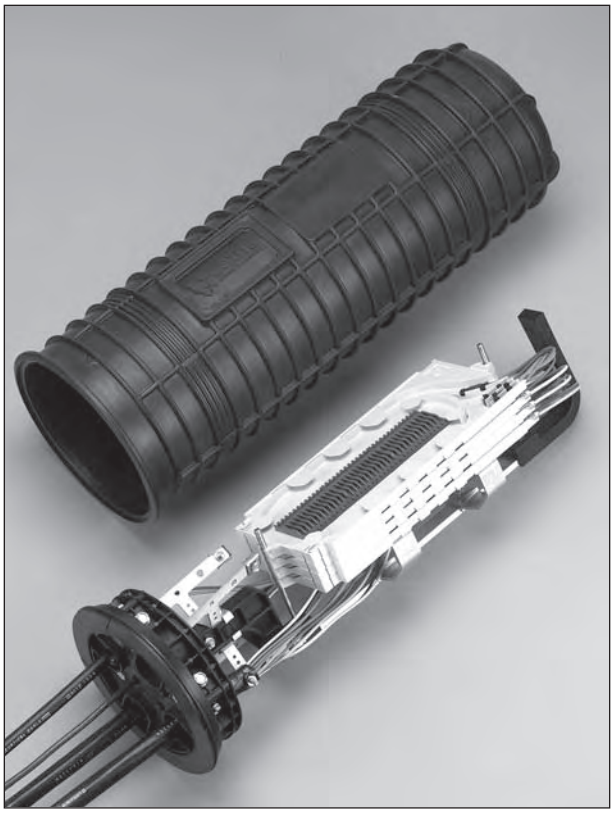
The COYOTE Dome Closure – Evolution of a Breed Continues...

Introducing the latest addition to the COYOTE family of fiber optic closures, the COYOTE Dome Closure. Specifically designed for applications where a domed-style configuration is preferred, the COYOTE Dome Closure sports several new and unique features, and sets the pace for a new generation of COYOTE Closures designed to meet the demand of ever-evolving communications networks.

The COYOTE Dome Closure is available in two sizes; 6.5" x 22" (165 mm x 559 mm) and 6.5 x 17", (165 mm x 432 mm) to satisfy a variety of fiber optic distribution network requirements, including Fiber-to-the Premise (FTTP) applications.

Revolutionary End Plate Design
An all-new end plate design is at the heart of the innovations built into the COYOTE Dome Closure. Features include:

- Four 1-1/4" (32 mm) individual accessed cable entry ports. The re-enterable and reusable design is segmented to allow easy user access to each cable entry separately without disturbing any existing cables or fibers.
- Fully compatible with in line COYOTE Closure shells.
- Easily allows for mid-sheath (express) applications.
- New gel sealant system that is easy to apply and reusable.
- End plate grommets that allow users to accommodate a number of smaller branch or drop cables.
- Standard ground wire ports – ground wire easily feeds through and seals in the end plate, providing electrical isolation.
- A unique clamping arrangement that provides a weatherproof seal between thedome shell and end plate.
- End plate mounted air valve.



PATENT PENDING

The New Segmented End Plate Design Makes the COYOTE Dome Easy to Install

Compatible with Field Proven COYOTE Fiber Management Technology

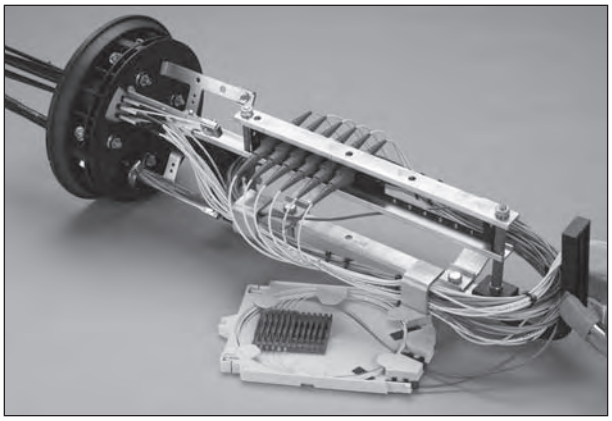
The COYOTE Dome Closure was built from the ground up using the same craft-friendly fiber management technology that placed the COYOTE family of closures among the most respected in the industry. What's more, it utilizes the same family of splice trays and accessories as other closures in the COYOTE Series including COYOTE Splice Trays with integral fiber optic splitters providing in-built familiarity and unmatched compatibility.

COYOTE® Dome Closure

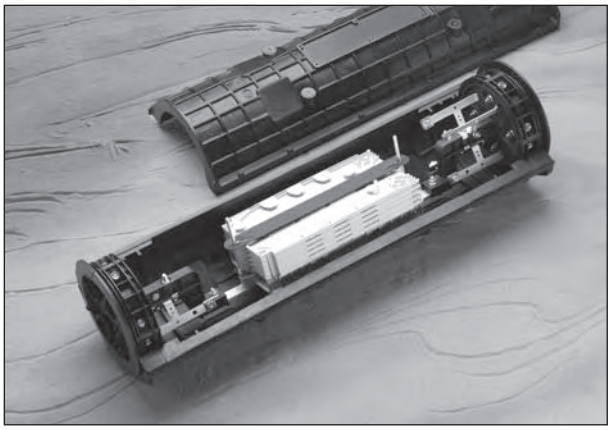
Utilizing the available low profile splice trays (fusion splice only) the capacity of the COYOTE Dome Closure for individual splices is 216 for the 6.5" x 22" (165 mm x 559 mm) version and 72 for the 6.5" x 17" (165 mm x 432 mm) version. The capacities for mass fusion splicing of ribbon fibers are 288 and 144 respectively.

Capacities 6.5" x 22" (165 mm x 559 mm) COYOTE Dome Closure				
Splice Tray	Description	Splices per Tray	Trays per Closure	Splice Capacity
80801127	Single Fusion	36	6	216
80805514	Single Fusion or mechanical	36	4	144
80805146	Mass Fusion	144	2	288
NOTE: maximum number of trays for 8006946 Express Closure is reduced by 50%				

Capacities 6.5" x 17" (165 mm x 432 mm) COYOTE Dome Closure				
Splice Tray	Description	Splices per Tray	Trays per Closure	Splice Capacity
80807701	Single Fusion	12	6	72
80806033	Single Fusion	12	4	48
80807114	Mass Fusion	72	2	144



COYOTE Dome Cross-Connect



COYOTE Dome In-line Version

Versatility
Like it's siblings, the COYOTE Dome Closure adapts to the changing requirements of your network architecture. For starters, re-enterability is a snap, requiring no additional parts or re-entry kits. An In-Line Reconfiguration Option allows you to convert the closure for in-line splice applications or add additional drops. For applications that require connectivity the COYOTE Dome Closure also comes in a Cross-Connect/Express version.

Rugged and Reliable
The COYOTE Dome Closure meets the demanding requirements of Bellcore GR-771-Core for all aerial, buried and underground environments. Manufactured in accordance with ISO 9001:2000 procedures to assure quality, the COYOTE Dome Closure is backed by the experience and field support that Preformed has been noted for since 1947.

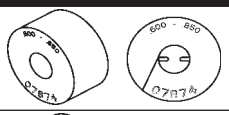
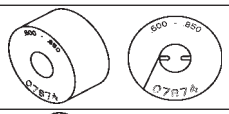
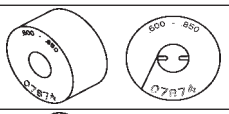
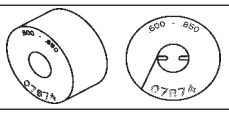
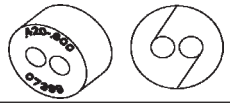
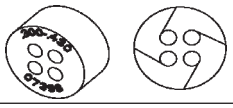
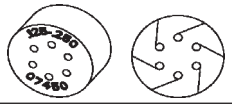
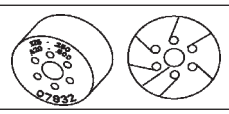
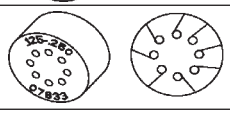
Product Ordering Tables for Closure Kits and Accessories

COYOTE® Dome Closure

Closure Kits	
Catalog Number	Description (mm)
8006877	6.5" x 22" (165 x 589) COYOTE Dome Closure for Buffer Tube (loose tube) applications
8006946	6.5" x 22" (165 x 589) COYOTE Dome Express Closure for mid-sheath applications (buffer-tube)
8006988	6.5" x 17" (165 x 432) COYOTE Dome Express For mid-sheath (buffer Tube) applications
8006878	6.5" x 22" (165 x 589) COYOTE Dome Closure for Unitube cable applications
8006944	6.5" x 17" (165 x 432) COYOTE Dome Closure for Buffer Tube (loose tube) applications
8006945	6.5" x 17" (165 x 432) COYOTE Dome Closure for Unitube cable applications
8006941	6.5" x 22" (165 x 589) COYOTE Dome Cross Connect/Express Closure with bulkhead for two adapter panels. Includes two 12-count splice trays

Accessories	
Catalog Number	Description (mm)
8001127	36-count Splice Tray Low Profile for 6.5" x 22" (165 x 588) closures
80805514	36-count Splice Tray Standard for 6.6" x 22" (165 x 588) closures
80807701	12-count Splice Tray Low Profile for 6.5" x 17" (165 x 432) closures
80806033	12-count Splice Tray Standard for 6.5" x 17" (165 x 432) closures
80805146	COYOTE Ribbon SpliceTray for 6.5" x 22" (165 x 589) closures
80807114	COYOTE Ribbon SpliceTray for 6.5" x 17" (165 x 431) closures
80807769	Low Profile 9 (blank) splice tray for 6.5" x 17" (165 x 432mm) closures
80807208	Gel Sealant (6 ft roll)
80807726	Cable cap (package of four with eight hex bolts)
80807375	End plate assembly (w/o cable caps)
80807332	Dome clamp and gasket
8003681	End plate kit
8003678	Aerial Hanger bracket kit

Table 1: Grommet Configurations

Catalog Number	Cable Range Inches (mm)	Description	Splitting Location
8003691	.42 - .60 (11 - 15 mm)	1-entry grommet	
8003692	.60 - .85 (15 - 22 mm)	1-entry grommet	
8003693	.85 - 1.0 (22 - 25 mm)	1-entry grommet	
8003694	1.0 - 1.25 (25 - 32 mm)	1-entry grommet	
8003663	.42 - .60 (11 - 15 mm)	2-entry grommet	
8003664	.30 - .43 (8 - 11mm)	4-entry grommet	
8003665	.125 - .25 (3 - 6 mm)	6-entry grommet	
8003676	.42 - .60 (11 - 15 mm) .125 - .25 (3 - 6 mm)	7-entry grommet	
8003677	.125 - .25 (3 - 6 mm)	8-entry grommet	

PREFORMED LINE PRODUCTS

Section 25 – Fiber Optics: Fiber Distribution Cabinets

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COYOTE® Splice Trays
with Integrated Fiber Optic Splitters 25-4

PREFORMED Axcess Solutions™

COYOTE® Pre-Terminated Cabinets Customized to meet your needs

Pre-Terminated cabinets not only save you time, they also save up to 40% on installation labor costs. Fiber assemblies are 100% tested and labeled using ISO certified procedures. Units are ready for splicing right out of the carton.

All COYOTE fiber cabinets are made from rugged 16 gauge steel, protected with a durable powder-coat finish and accommodate standard COYOTE Splice Trays and Adapter Modules. Cabinets are available in two colors - almond or black.

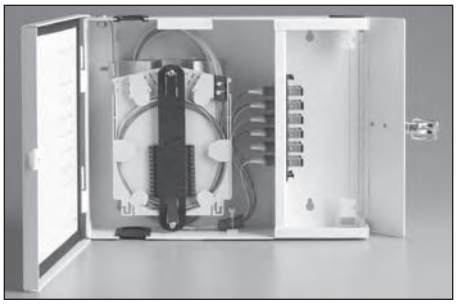
Features & Benefits

- Craft-friendly COYOTE splice trays
- Integral fiber storage
- High-density splicing & patching in single cabinet
- Assembled to your exact specifications
- 100% tested & labeled
- Up to 40% savings on labor
- UPC or APC fiber polishes
- Color coded Pigtails

Wall Mount Cabinets

Provide protected fiber splicing and connectivity. A lockable inner door secures the splicing compartment and also serves as a work shelf. Each cabinet may be ordered empty or pre-terminated to your exact specification.

All cabinets include mounting hardware, tie-off brackets, grounding posts, grommets and hardware to secure splice trays.



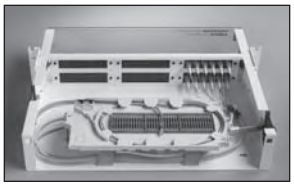
Pre-terminated Solution shown left (See following pages to order your preterminated solutions)

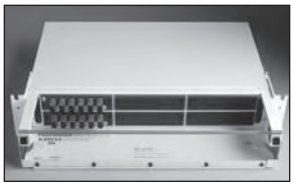
Wall Mount Cabinets (EMPTY)				
Catalog Number	Description	Height (mm)	Width (mm)	Depth (mm)
WDC2_	Wall Mount Cabinet up to 24 Fiber Connections and Splices	10 (254)	13 (330)	3.5 (89)
WDC4_	Wall Mount Cabinet up to 48 Fiber Connections and Splices	14 (356)	13 (330)	3.5 (89)
WDC8_	Wall Mount Cabinet up to 96 Fiber Connections and Splices	17 (432)	13 (330)	5.5 (140)
WDC12_	Wall Mount Cabinet up to 144 Fiber Connections and Splices	12 (305)	17 (432)	11.0 (279)
Wall Mount Cabinets A for Almond B for Black				

Rack Mount Cabinets

Come with universal mounting brackets to fit 19" or 23" racks or enclosures. Clear front door and access panels are removable for easy entry. Each cabinet may be ordered empty or pre-terminated to your exact specifications.

All Rack Mount Cabinets have key hole slots for optional wall mounting.





Rack Mount Cabinets (Empty)				
Catalog Number	Description	Rack Units	Width (mm)	Depth (mm)
RDC2_	Rack Mount Cabinet up to 12 Fiber Connections and Splices	1	17 (432)	14 (356)
RDC3_	Rack Mount Cabinet up to 36 Fiber Connections and Splices	2	17 (432)	14 (356)
RDC6_	Rack Mount Cabinet up to 72 Fiber Connections and Splices	2	17 (432)	14 (356)
RDC12_	Rack Mount Cabinet up to 144 Fiber Connections and Splices	3	17 (432)	14 (356)
RDC24_	Rack Mount Cabinet up to 288 Fiber Connections and splices	7	17 (432)	14 (356)
Rack Mount Cabinets A for Almond B for Black				

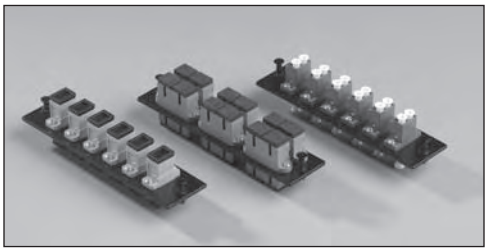
PREFORMED Axcess Solutions™

Passive Optical Components

Adapter Modules

Modular Plates fit any COYOTE cabinet and offer the ultimate in design flexibility.

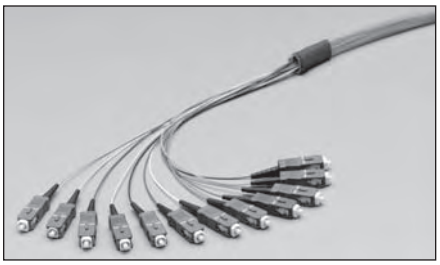
6-port, 8-port and 12-port snap-in Adapter Plates come pre-loaded and ready for installation into COYOTE Fiber Cabinets. All adapter styles: ST, SC, FC, and LC feature precision ceramic alignment sleeves.



Adapter Modules			
Catalog Number	Connector	Adapters	Sleeve
6SMSC	SC	6	Ceramic
6SCAPC	SC/APC	6	Ceramic
12SMDSC	SC	12 (6 Duplex)	Ceramic
8SMSC	SC	8	Ceramic
6SMST	ST	6	Ceramic
8SMST	ST	8	Ceramic
6SMFC	FC	6	Ceramic
8SMFC	FC	8	Ceramic
6FCAPC	FC/APC	6	Ceramic
6SMLC	LC	6	Ceramic
12SMLC	LC	12 (6 Duplex)	Ceramic
600	Blank Plate	–	–

Pigtail Cable Assemblies

Six or twelve color-coded 900 Micron SM fiber bundles, in yellow braided sleeve. Ribbon fan outs and jacketed cable pigtails also available. Contact PLP for additional options.



Pigtail Cable Assemblies - Bundled 900 Micron Fibers in Yellow Sleeve		
Catalog Number	Connector	Fiber Count
P6SCU_*	SC/UPC	6
P12SCU_*	SC/UPC	12
P6SCA_*	SC/APC	6
P12SCA_*	SC/APC	12
P6ST_*	ST	6
P12ST_*	ST	12
P6FC_*	FC	6
P12FC_*	FC	12
P6LC_*	LC	6
P12LC_*	LC	12
*Cable length in meters Contact PLP for other options		

Factory Polishes

	Return Loss	Insertion Loss
UPC	-55 dB	0.2 typ 0.3 max
APC	-65 dB	0.3 max

Jumper Cable Assemblies

High Performance Singlemode Fiber Optic Jumpers feature UPC and APC terminations to handle the most demanding transmission speeds. Each jumper is 100% tested, for insertion and return loss and visually inspected.

2mm or 3mm Jacketed Cables available.



Jumper Cable Assemblies - 3 mm Jacketed	
Catalog Number	Connector
JSCU_*	SC/UPC
JSCA_*	SC/APC
JST_*	ST
JFC_*	FC
JLC_*	LC
*Cable length in meters Contact PLP for other options	

PREFORMED Axcess Solutions™

Passive Optical Components

COYOTE Splice Trays

User friendly splice trays for all applications

Five types of standard splice trays are available, four for single fiber splices and one for mass fiber splices.

These injection-molded trays have hinged, clear plastic covers for maximum fiber protection that still allows for visible inspection of the fibers.

A series of Tabs along the tray perimeter are easily removed to simplify routing of the fiber. When replaced they retain the fiber.

COYOTE Splice Trays	
Catalog Number	**Description**
80805514	COYOTE Blank Splice Tray Kit with three Elastomer 12 count splice blocks
*8001127	COYOTE Splice Tray - Low Profile Single Fiber 36 count with snap in 12 count splice blocks for fusion splicing only
80805515	COYOTE Blank Ribbon Splice Tray with two Elastomer 12-Count splice blocks
80806033	COYOTE RUNT 12 count single fiber
*80807701	COYOTE Low Profile Runt Low profile single fiber 12 count for fusion splicing only
*Increases splicing capacity by 50% - Replace (2) standard trays with (3) low profile trays in any cabinet	

COYOTE Splice Trays for single and mass fiber.



Pre-terminated Cabinets

Ordering is as easy as 1-2-3!

When ordering standard COYOTE Pre-terminated Cabinets follow these easy steps

1. Select the type of cabinet
   IE: RDC24A __ _ — Almond Rack Mount Cabinet with 24 slots for up to 288 connections (24 x 12)

2. Select number of fiber adapters or ports
   IE: RDC24A96 __ — Loaded with 96 adapters (standard 6 pack modules)

3. Select fiber connector style and length of pigtails
   IE: RDC24A96SCU3 — SMSC UPC polish 3 meter length Pigtails

Contact a PLP sales representative for assistance with other pre-terminated cabinet options.

PREFORMED Axcess Solutions™

COYOTE® Splice Trays with Integrated Splitters offer Superior Optical Performance for Outside Plant Applications

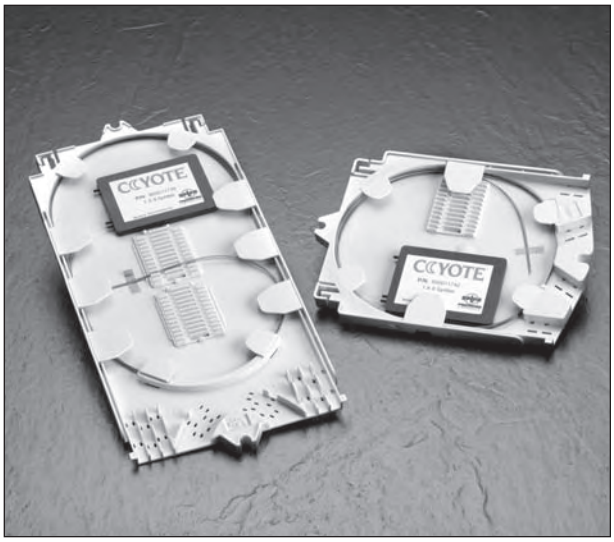
Fast, Easy Installation

- The pre-installed Fused Biconical Taper (FBT) coupler is ready to be spliced right out of the carton.
- Colored bare fiber leads provide easy identification.
- Trays install quickly into COYOTE closures.

Superior Splitter Performance and Versatility

- The Fused Biconical Taper process is impervious to moisture for improved reliability in outside plant applications.
- Low insertion loss, back reflection and uniformity for improved network performance.
- Insensitive to operating wavelength.
- Rugged Splitter modules offer ultimate protection for coupler components and fibers plus save space.

Contact PLP for custom split ratios for optical specifications



PLP® Reliability

Each Preformed product passes a series of comprehensive laboratory and field tests before the first unit is shipped. The COYOTE Integrated Couplers are no exception.

The integrated FBT Splitters, were built for qualification in accordance with Telecordia GR-1221 test criteria. Combine this with experienced engineering and dependable field support, and you've got the level of reliability that PLP is known for.

Specifications					
Split (even)	BandPass (nm)	Insertion Loss (dB)	Uniformity (dB)	Polarization Sensitivity (dB)	Directivity (dB)
1 x 4	1310 + / - 50 1530 + / - 50	≤7.25	≤1.0	≤0.3	>55
1 x 8		≤10.75	≤1.5	≤0.4	>55
1 x 16		≤14.80	≤1.8	≤0.5	>55

Split	Catalog Number	Description	Closure Usage
1 x 4 1 x 8	800011738 800011739	Low Profile Splice Tray - 24 Count Low Profile Splice Tray - 24 Count	COYOTE In-Line Closures - 6.5", 8.0" and 9.5" (165 mm, 203 mm, and 241 mm) COYOTE Dome Closure - 6.5" x 22" (165 mm x 559 mm)
1 x 4 1 x 8	800011741 800011742	Low Profile Splice Tray - 12 Count Low Profile Splice Tray - 12 Count	COYOTE In-Line Closures - Runt, Pup and Terminal COYOTE Dome Closure - 6.5" x 17" (165 mm x 432 mm)
1 x 16	800011740	COYOTE Splice Tray - 24 Count	COYOTE In-Line Closures - 6.5", 8.0" and 9.5" (165 mm, 203 mm, and 241 mm) COYOTE Dome Closure - 6.5" x 22" (165 mm x 559 mm)
Contact PLP for Custom requirements and other split ratios			



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