General Cable

MINING

ANACONDA BRAND

CAROL® BRAND

MINING CABLE FOR INDUSTRIAL, COMMERCIAL AND SPECIALTY APPLICATIONS

SEPTEMBER 2009

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Mining

Mining Cable for Industrial, Commercial and Specialty Applications

This new catalog contains in-depth information on the most comprehensive line of mining cable available today. It features the latest information on products, along with detailed technical and specification data in indexed sections – with an easy-to-use "spec-on-a-page" format.

The spec-on-a-page format was developed to meet your needs. It features up-to-the-minute product information, from applications and constructions to detailed technical and specification data. There's also a glossary of technical terms for additional assistance.

And, of course, if you need any further data, General Cable's Customer Service staff provides the answers you need quickly and efficiently.

General Cable

INTERNATIONAL
ISO 9001:2000
CERTIFICATION

What's New?

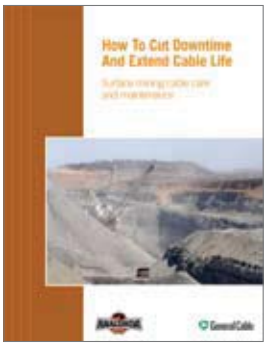
MINING CABLE ENGINEERING GUIDE

Mining Cable Engineering Handbook

2nd Edition

Welcome to the second edition of General Cable's **Mining Cable Engineering Handbook.** This manual provides engineering information for today's mine power cables. If you need any further information on any of your wire and cable needs, General Cable's customer service and technical staff are available to provide the answers you need quickly and efficiently.

SURFACE MINING GUIDE

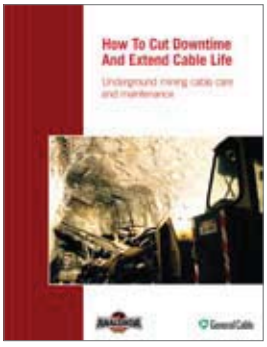


How to Cut Downtime and Extend Cable Life

Surface mining cable care and maintenance

Anaconda® Brand mining cables have been designed to reduce cable-related downtime, as this factor represents a serious impact to mine profitability. This booklet represents a timely, updated body of knowledge for **surface mining**. It reduces our recommendations to simple procedures that can readily be passed on to all of your operating personnel.

UNDERGROUND MINING GUIDE

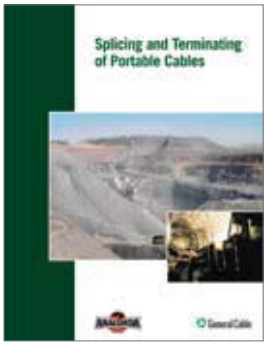


How to Cut Downtime and Extend Cable Life

Underground mining cable care and maintenance

Anaconda® Brand mining cables have been designed to reduce cable-related downtime, as this factor represents a serious impact to mine profitability. This booklet represents a timely, updated body of knowledge for **underground mining**. It reduces our recommendations to simple procedures that can readily be passed on to all of your operating personnel.

SPLICING AND TERMINATING GUIDE



Splicing And Terminating of Portable Cables

Splices and terminations, which are always a vital part of any cable system, become more susceptible to failure at higher voltages. Whether the splice or termination is accomplished by the use of hand-applied tapes, a filled or molded device, heat-shrinkable tubing, or a prefabricated device, care should be exercised during the application. This brochure offers **general procedures and techniques** for splicing and terminating of portable cables.

PRODUCT SELECTION LOCATOR

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General Cable | Dre Company
Connecting the World

Now one industry leader focuses its worldwide resources on delivering maximum value to customers. It's the cost-effective advantage of a single resource, a single company that provides the broadest product range, the highest level of commitment to customer and technical support, the most cost-effective manufacturing and distribution, and the most responsive customer-first service. In today's highly competitive worldwide markets, General Cable provides the single-source solution with benefits that go straight to your bottom line. Ask your representative about other General Cable products.

Energy Cables

Underground High-Voltage and Extra-High-Voltage Cables
General Cable's complete line of Silec® insulated high- and extra-high-voltage underground energy cables, from 63kV up to 500kV, and our state-of-the-art accessories — such as pre-molded joints and terminals — enable us to provide turnkey design and engineering services for the global, systems-engineered, electric utility market.

Bare Overhead High-Voltage Transmission and Distribution Cables
Our BICC® Brand cables satisfy the varied and specialized demands of the electric utility marketplace. Our TransPowr® bare aluminum overhead conductors are available in standard ACSR, specialized T-2 designs and high-temperature ACSS/TW designs. Our new ACCC/TW conductors feature an innovative composite core construction which possesses high temperature and increased strength characteristics.

Submarine Transmission and Distribution Cables
With its many years of experience in submarine and offshore cables, NSW offers the necessary expertise to satisfy the challenging requirements of cabling wind farms. We stand ready to implement new developments with our customers and offer research, project planning, manufacturing and consulting at a single location. For complete service, our proven turnkey solution is available to you.

Low- and Medium-Voltage Distribution Cables
General Cable's extensive line of BICC® Brand PowrServ® and EmPowr® copper and aluminum cables serve the total distribution needs of electric utilities, rural electric co-ops and the public power market for both traditional and renewable energy resources.

Industrial & Specialty Cables

Cord and Cordset Products
General Cable's Carol® Brand is the most recognized name in flexible cords for temporary power. Our extensive line includes portable cord, cordsets, portable power cable and premium-grade cable for commercial and industrial applications.

Electronic Cables
Our Carol® Brand products fulfill the complete wire and cable requirements of the fast-changing electronics, sound and security marketplaces. We offer hookup wire; communications cable; computer, coaxial and microphone cables; and special designs for security systems, fire alarms, and audio, video and digital broadcasts.

Industrial Cables
General Cable's industrial instrumentation, power and control cables serve an extensive range of markets, including power generation, refining and petrochemical, natural gas production, steel, pulp and paper, and factory automation.

Specialty Cables
General Cable manufactures a broad range of specialty cables that meets the exacting specifications for original equipment manufacturers (OEMs), military, transit, offshore and marine shipboard, nuclear, and mining applications. General Cable's engineered Brand Rex and Anaconda® Brand wire and cable solutions provide great lifecycle performance and reliability — meeting customer applications requirements today, while setting tomorrow's standards.

Specialty Wire Harnesses
We supply application-specific and custom-designed cable, harnesses and assemblies for a wide variety of OEM applications, including business machines, material handling equipment, factory automation, medical equipment and the automotive aftermarket. General Cable is a global leader in the manufacture of automotive wire and cable — from ignition wire sets and single leads to bulk ignition wire, primary wire and battery starter cable.

Communications Cables

Data Communications Cables
Our Gen*SPEED*® Brand products are on the job wherever enhanced performance is critical — from 10 Gigabit Ethernet, token ring and broadband applications to patch panels, communications closets and plenum applications. We offer one of the most comprehensive lines of enhanced high-speed Category products, including PanGen™ structured cabling system solutions.

Fiber Optic Cables
We provide a full menu of NextGen® Brand fiber optic cables for data communications and voice and video networks. Our products range from tight buffer and armored products for military applications to loose tube and hybrid cables for communications networks. We also offer advanced Blolite® blown fiber systems for Local Area Networks and campus applications.

Telecommunications Cables
Our broad range of industry-standard General Cable outside plant wire and cable products ensures reliable, cost-effective performance. We provide air core, filled core and specialty wire products for aerial, buried and duct applications.


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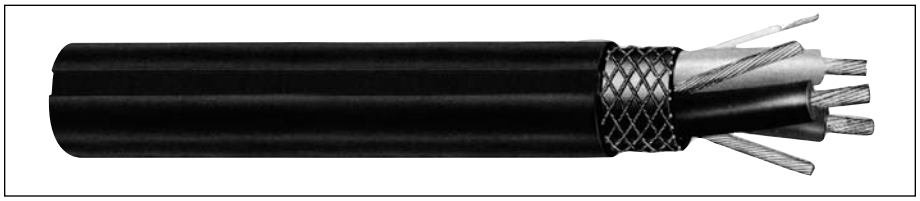
Mining

Anaconda® Brand Mining-Grade Cables 1



Anaconda® Brand—when it comes to reliability and performance in a mining cable, one name stands alone. Anaconda® Brand—the world's premier extra-heavy-duty mining-grade cable.

Engineered to endure the most severe and extreme demands of the toughest mining applications. In a class by itself, Anaconda® Brand sets the industry's highest performance standard by which all others are measured. With a reinforced, two-layer, lead-cured thermoset jacket, Anaconda® Brand mining cables provide for the ultimate in protection against the worst hazards and give new meaning to dependable, durable and reliable. When the very best is a basic requirement, there is only one preferred choice, Anaconda® Brand mining cables.

Our Anaconda® Brand mining-grade products carry a full range of listings and certifications with MSHA and the Canadian Standard Association. In addition, the products meet or exceed the requirements of ICEA S75-381 Portable and Power-Feeder Cables for use in mines and similar applications.

The advantage of General Cable's experience and expertise in mining cable technology continues to provide practical benefits over the entire life cycle of a particular cable in a specific application. Better design and construction, more advanced materials and process technology, and more reliable performance over a longer time all result in lower cost per ton.

Whatever the specific requirement, General Cable can provide the best performance and best cost solution for any mining application.

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Anaconda® Brand Type W Power, Flat Parallel Portable w/o Ground, EPR/CPE 2000 Volts 90˚C, Two Conductor

Product Construction

Conductor:
- 4 AWG thru 4/0 AWG coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

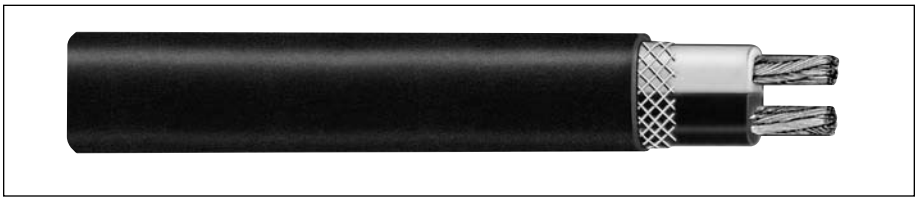
Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored (black and white)

Jacket:
- Extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 2/C FLAT TYPE W 2000 VOLTS P-102-109 MSHA

Options:
- Other jacket materials available upon request

Applications:
- Designed for use as trailing cables on DC mining equipment
- Designed for use where diode grounding is employed
- For battery charges and oil drilling rigs



Features:
- Flat construction provides maximum resistance to damage from crushing and runovers
- D-shaped insulation prevents conductors from shifting under the jacket
- Excellent physical toughness and heat stability
- Excellent heat, moisture, steam, oil, chemical, radiation and compression cut resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection

Packaging:
- Material cut to length and shipped on non-returnable reels

4 AWG THRU 4/0 AWG CONDUCTORS, TWO CONDUCTOR, FLAT PARALLEL PORTABLE W/O GROUND, TYPE W - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		NOMINAL CABLE DIMENSIONS		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13115.550400	2	4	259	0.060	1.5	0.61 x 1.05	15.5 x 26.7	271	403	550	818	127
13115.550300	2	3	259	0.060	1.5	0.68 x 1.14	17.3 x 29.0	329	489	675	1005	145
13115.550200	2	2	259	0.060	1.5	0.73 x 1.24	18.5 x 31.5	412	613	810	1205	167
13101.814061	2	1	259	0.080	2.0	0.81 x 1.40	20.6 x 35.6	523	778	1020	1520	191
13151.499461	2	1/0	259	0.080	2.0	0.93 x 1.51	23.6 x 38.2	657	978	1265	1880	217
13152.844840	2	2/0	329	0.080	2.0	0.99 x 1.63	25.1 x 41.4	835	1242	1515	2255	250
13115.755300	2	3/0	413	0.080	2.0	1.03 x 1.77	26.2 x 45.0	1048	1560	1810	2694	286
13115.755400	2	4/0	532	0.080	2.0	1.10 x 1.89	27.9 x 48.0	1363	2028	2175	3237	328

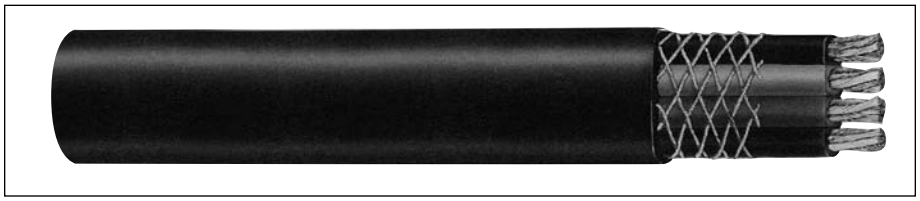
Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal; subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

General Cable

MSHA Mine Safety and Health Administration

ANACONDA® BRAND

Anaconda® Brand Type W Power, Flat Parallel Portable, EPR/CPE 2000 Volts 90˚C, Four Conductor



Product Construction

Conductor:
- 6 AWG thru 4/0 AWG coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored (black, white, red and green)

Jacket:
- Extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 4/C FLAT TYPE W 2000 VOLTS P-102-109 MSHA

Options:
- Other jacket materials available upon request

Applications:
- Designed for use as trailing cables on AC mining equipment:
  - Where a ground-check conductor is not required for fail-safe ground monitoring
  - Where induced voltages in the grounding system do not present a hazard

Features:
- Flat construction provides maximum resistance to damage from crushing and runovers
- Distributes tensile load uniformly among four conductors
- Shaped insulation to prevent conductors from shifting under the jacket
- Excellent physical toughness and heat stability
- Excellent heat, moisture, steam, oil, chemical, radiation and compression cut resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection

Packaging:
- Material cut to length and shipped on non-returnable reels

6 AWG THRU 4/0 AWG CONDUCTORS, FOUR CONDUCTOR, FLAT PARALLEL PORTABLE, TYPE W - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		NOMINAL CABLE DIMENSIONS		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13106.824571	4	6	133	0.060	1.5	0.67 x 1.69	17.0 x 42.9	338	503	895	1332	79
13104.785463	4	4	259	0.060	1.5	0.75 x 1.89	19.0 x 48.0	518	771	1185	1764	104
13102.514941	4	2	259	0.060	1.5	0.81 x 2.23	20.6 x 56.6	824	1227	1620	2411	138
13192.800100	4	1	259	0.080	2.0	0.97 x 2.60	24.6 x 66.0	1045	1555	2100	3125	161
13192.805100	4	1/0	259	0.080	2.0	1.01 x 2.73	25.7 x 69.3	1314	1956	2500	3721	186
13192.905200	4	2/0	329	0.080	2.0	1.10 x 2.96	27.9 x 75.2	1670	2485	2900	4316	215
13192.905300	4	3/0	413	0.080	2.0	1.18 x 3.25	30.0 x 82.6	2096	3119	3500	5209	249
13192.905400	4	4/0	532	0.080	2.0	1.29 x 3.46	32.8 x 87.9	2726	4057	4225	6288	287

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal; subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

Anaconda® Brand Type W Power, Round Portable, EPR/CPE

2000 Volts 90˚C, Four Conductor

Product Construction

Conductor:
- 6 AWG thru 500 kcmil coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored (black, white, red and green)

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 4/C TYPE W 2000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-045 MSHA

Options:
- Other jacket materials available upon request

Applications:
- Designed for use as trailing cables on AC mining equipment:
  - Where a ground-check conductor is not required for fail-safe ground monitoring
  - Where induced voltages do not present a problem

Features:
- Rope-lay-stranded conductors are extremely flexible and resistant to wire breakage
- Excellent heat, moisture, steam, oil, chemical and radiation resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage — the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

6 AWG THRU 500 KCMIL CONDUCTORS, FOUR CONDUCTOR, ROUND PORTABLE, TYPE W - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13306.426312	4	6	133	0.060	1.5	1.10	27.9	341	507	838	1247	79
13304.440400	4	4	259	0.060	1.5	1.27	32.3	524	779	1174	1747	104
13306.340300	4	3	259	0.060	1.5	1.34	34.0	664	988	1377	2049	120
13302.440200	4	2	259	0.060	1.5	1.48	37.6	833	1239	1701	2531	138
13306.340100	4	1	259	0.080	2.0	1.68	42.7	1082	1610	2192	3262	161
13306.345100	4	1/0	259	0.080	2.0	1.79	45.5	1360	2025	2549	3793	186
13306.645200	4	2/0	329	0.080	2.0	1.93	49.0	1728	2572	3078	4581	215
13306.645300	4	3/0	413	0.080	2.0	2.07	52.6	2169	3228	3685	5485	249
13306.645400	4	4/0	532	0.080	2.0	2.26	57.4	2821	4199	4540	6758	287
13306.646000	4	250	608	0.095	2.4	2.66	67.6	3224	4798	5746	8553	320
13306.646200	4	350	851	0.095	2.4	2.98	75.7	4534	6748	7574	11275	394
13306.646500	4	500	1221	0.095	2.4	3.40	86.4	6506	9682	10376	15441	487

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal; subject to standard industry tolerances. Actual shipping weight may vary.
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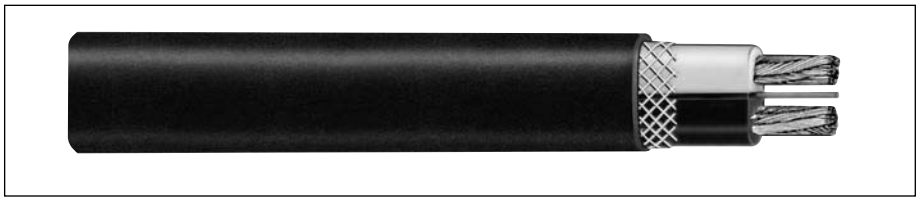
General Cable

MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

ANACONDA® BRAND

Anaconda® Brand Type G Power, Flat Parallel Portable w/Ground, EPR/CPE 2000 Volts 90˚C, Two Conductor



Product Construction:

Conductor:
- 4 AWG thru 4/0 AWG coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored (black and white)

Grounding Conductor:
- Coated copper, rope-lay-stranded and shaped with a green elastomer covering designed to keep the grounding conductor in place in the flat assembly

Jacket:
- Extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 2/C FLAT TYPE G 2000 VOLTS P-102-109 MSHA

Options:
- Other jacket materials available upon request

Applications:
- Designed for use as trailing cables on DC mining equipment
- Designed for use where a grounding conductor is necessary

Features:
- Flat construction provides maximum resistance to damage from crushing and runovers
- D-shaped insulation prevents conductors from shifting under the jacket
- Excellent physical toughness and heat stability
- Excellent heat, moisture, steam, oil, chemical, radiation and compression cut resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection

Packaging:
- Material cut to length and shipped on non-returnable reels

4 AWG THRU 4/0 AWG CONDUCTORS, TWO CONDUCTOR, FLAT PARALLEL PORTABLE W/GROUND, TYPE G - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	NOMINAL CABLE DIMENSIONS		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm		INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13116.550400	2	4	259	0.060	1.5	7	0.61 x 1.15	15.5 x 29.2	326	485	635	945	127
13116.550300	2	3	259	0.060	1.5	6	0.68 x 1.26	17.3 x 32.0	412	613	785	1170	145
13102.830713	2	2	259	0.060	1.5	5	0.73 x 1.35	18.5 x 34.3	518	770	935	1390	167
13101.629210	2	1	259	0.080	2.0	4	0.81 x 1.55	20.6 x 39.4	655	975	1185	1760	191
13151.752132	2	1/0	259	0.080	2.0	3	0.93 x 1.67	23.6 x 42.4	843	1254	1470	2190	217
13114.755200	2	2/0	329	0.080	2.0	2	0.99 x 1.85	25.1 x 47.0	1045	1555	1790	2660	250
13116.755300	2	3/0	413	0.080	2.0	1	1.03 x 2.00	26.2 x 50.8	1309	1949	2145	3190	286
13116.755400	2	4/0	532	0.080	2.0	1/0	1.10 x 2.10	27.9 x 53.3	1698	2527	2545	3790	328

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal; subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

Anaconda® Brand Type G-GC Power, Flat Parallel Portable w/Ground-Check, EPR/CPE 2000 Volts 90˚C, Three Conductor

Product Construction

Conductor:
- 6 AWG thru 4/0 AWG coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

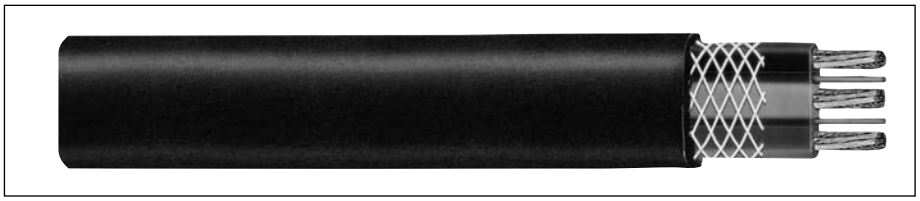
Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored (black, white and red)

Ground-Check Conductor:
- Coated copper, rope-lay-stranded and shaped ground-check conductor is insulated with a yellow elastomer

Grounding Conductor:
- Coated copper, rope-lay-stranded and shaped with a green elastomer covering designed to keep the grounding conductor in place in the flat assembly

Jacket:
- Extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C FLAT TYPE G-GC 2000 VOLTS P-102-109 MSHA



Options:
- Other jacket materials available upon request

Applications:
- Designed for use as trailing cables on AC mining equipment:
  - Where ground monitoring is accomplished with a ground-check conductor
  - Where induced voltages in the grounding system do not present a hazard

Features:
- Flat construction provides maximum resistance to damage from crushing and runovers
- Shaped insulation to prevent conductors from shifting under the jacket
- Excellent physical toughness and heat stability

Features (cont'd):
- Excellent heat, moisture, steam, oil, chemical, radiation and compression cut resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion and flame
- Excellent thermal stability and physical properties over a broad temperature range

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection

Packaging:
- Material cut to length and shipped on non-returnable reels

6 AWG THRU 4/0 AWG CONDUCTORS, THREE CONDUCTOR, FLAT PARALLEL PORTABLE W/GROUND-CHECK, TYPE G-GC - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL CABLE DIMENSIONS		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13162.650600	3	6	133	0.060	1.5	8	8	0.66 x 1.67	16.8 x 42.4	357	532	900	1340	79
13162.650400	3	4	259	0.060	1.5	7	8	0.72 x 1.87	18.3 x 47.5	507	755	1175	1750	104
13164.550300	3	3	259	0.060	1.5	6	6	0.78 x 2.08	19.8 x 52.8	660	982	1395	2080	120
13102.177012	3	2	259	0.060	1.5	5	6	0.85 x 2.23	21.6 x 56.6	807	1201	1625	2415	138
13164.550100	3	1	259	0.080	2.0	4	6	0.96 x 2.50	24.4 x 63.5	1000	1488	2090	3110	161
13164.555100	3	1/0	259	0.080	2.0	3	5	1.01 x 2.67	25.6 x 67.8	1258	1871	2470	3675	186
13164.755200	3	2/0	329	0.080	2.0	2	5	1.09 x 2.86	27.7 x 68.1	1567	2333	2940	4375	215
13164.755300	3	3/0	413	0.080	2.0	1	5	1.18 x 3.12	30.0 x 79.2	1939	2885	3515	5230	249
13164.755400	3	4/0	532	0.080	2.0	1/0	5	1.24 x 3.30	31.5 x 83.8	2485	3698	4245	6315	287

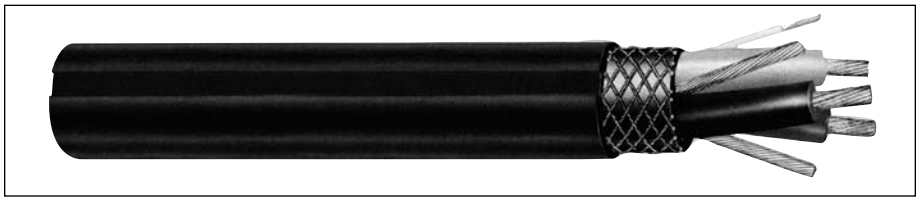
Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal; subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58.
For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

General Cable

MSHA Mine Safety and Health Administration

ANACONDA® BRAND

Anaconda® Brand Type G-GC Power, Round Portable w/Ground-Check, EPR/CPE 2000 Volts 90˚C, Three Conductor



Product Construction

Conductor:
- 6 AWG thru 500 kcmil coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored (black, white and red)

Ground-Check-Conductor:
- Annealed copper, rope-lay-stranded per ASTM B172, insulated with high-strength yellow polypropylene

Grounding Conductors:
- Coated copper, rope-lay-stranded per ASTM B172

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE G-GC 2000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-045 MSHA

Options:
- Other jacket materials available upon request

Applications:
- Designed for use as trailing cables on AC mining equipment:
  - Where a ground-check conductor is required for fail-safe monitoring
  - Where induced voltages in the grounding system will not present a hazard

Features:
- Ground-check-conductor provides fail-safe ground monitoring for maximum safety
- Improved ground-check conductor has longer flex life and durability
- Rope-lay-stranded conductors are extremely flexible and resistant to wire breakage
- Excellent heat, moisture, steam, oil, chemical and radiation resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

6 THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, ROUND PORTABLE W/GROUND-CHECK, TYPE G-GC - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13306.644092	3	6	133	0.060	1.5	10	10	1.05	26.6	360	536	735	1094	79
13304.693196	3	4	259	0.060	1.5	8	10	1.19	30.2	533	794	1065	1585	104
13354.340300	3	3	259	0.060	1.5	8	10	1.24	31.5	654	974	1245	1853	120
13302.772159	3	2	259	0.060	1.5	7	10	1.34	34.0	791	1178	1480	2202	138
13301.422060	3	1	259	0.080	2.0	6	8	1.51	38.3	1016	1512	1885	2805	161
13351.608053	3	1/0	259	0.080	2.0	5	8	1.65	41.9	1263	1880	2290	3408	186
13352.555382	3	2/0	329	0.080	2.0	4	8	1.75	44.4	1581	2352	2710	4033	215
13354.645300	3	3/0	413	0.080	2.0	3	8	1.89	48.0	2023	3010	3270	4866	249
13354.774063	3	4/0	532	0.080	2.0	2	8	2.04	51.8	2535	3773	3975	5915	287
13354.646000	3	250	608	0.095	2.4	2	6	2.39	60.7	2932	4364	4950	7366	320
13352.556200	3	350	851	0.095	2.4	1/0	6	2.68	68.0	4068	6054	6625	9859	394
13354.646500	3	500	1221	0.095	2.4	2/0	6	3.03	76.9	5831	8677	8890	13230	487

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal; subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58.
For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

ANACONDA® BRAND
Certified Canadian Standard Association
MSHA Mine Safety and Health Administration
General Cable

Anaconda® Brand Type G Plus GC Power, Round Portable w/Extensible Ground-Check, EPR/CPE 2000 Volts 90˚C, Three Conductor

Product Construction

Conductor:
- 1 AWG thru 500 kcmil coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored (black, white and red)

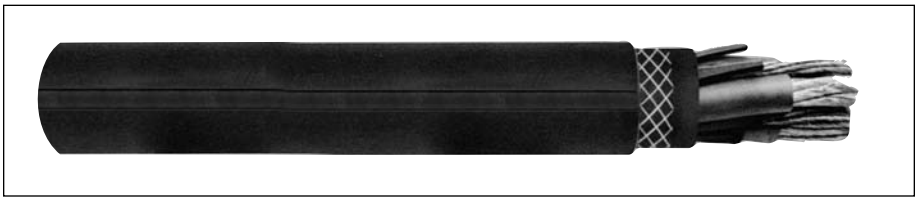
Ground-Check Conductor:
- Coated copper specially stranded to provide extensibility without sustaining tensile load, thereby providing maximum resistance to flex fatigue
- Insulated with high-strength polypropylene and placed in the center interstice

Grounding Conductors:
- Three coated copper, rope-lay-stranded per ASTM B172

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE G PLUS GC 2000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-045 MSHA

Options:
- Other jacket materials available upon request



Applications:
- Designed for use as trailing cables on AC mining equipment:
  - Where a ground-check conductor is required for fail-safe ground monitoring
  - With wireless ground monitoring systems (The symmetrical grounding system does not produce induced voltages when operating in a balanced 3-phase system)

Features:
- Improved ground-check conductor has longer flex life and durability
- Rope-lay-stranded conductors are extremely flexible and resistant to wire breakage
- G plus GC cancels induced voltages, preventing hazardous arcing when mining machines come in contact
- G plus GC can also be used as a Type G cable
- Excellent heat, moisture, steam, oil, chemical and radiation resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion, flame and sunlight

Features (cont'd):
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

1 AWG THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, ROUND PORTABLE W/EXTENSIBLE GROUND-CHECK, TYPE G PLUS GC - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13329.340100	3	1	259	0.080	2.0	7	16	1.65	41.9	1030	1533	2060	2798	161
13329.345100	3	1/0	259	0.080	2.0	6	16	1.72	43.7	1294	1926	2350	3408	186
13329.645200	3	2/0	329	0.080	2.0	5	16	1.89	48.0	1637	2436	2760	4018	215
13329.645300	3	3/0	413	0.080	2.0	4	16	2.03	51.6	2042	3038	3300	4837	249
13329.645400	3	4/0	532	0.080	2.0	3	16	2.16	54.9	2638	3926	3965	5901	287
13329.646000	3	250	608	0.095	2.4	2	16	2.39	60.7	3070	4569	5015	7463	320
13329.646200	3	350	851	0.095	2.4	1	16	2.68	68.1	4224	6286	6595	9814	394
13329.646500	3	500	1221	0.095	2.4	2/0	16	3.03	77.0	6188	9208	9040	13453	487

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal; subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

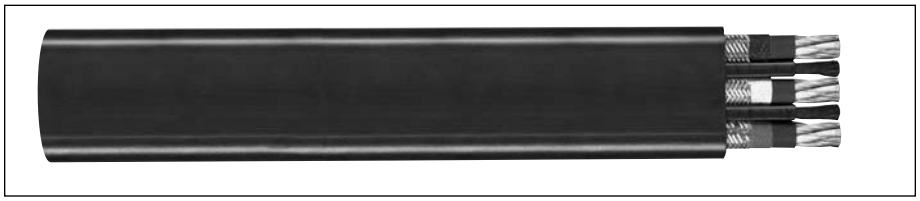
General Cable

MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

ANACONDA BRAND®

Anaconda® Brand Type SHD Power, Flat Portable w/Ground, EPR/CPE 2000 Volts 90˚C, Three Conductor



Product Construction

Conductor:
- 2 AWG thru 3/0 AWG coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation

Insulation Shield:
- A flexible coated copper/textile braid shield is applied over a non-conducting overlapped tape

Grounding Conductors:
- Coated copper, rope-lay-stranded per ASTM B172
- Two conductors, shaped and covered with an extruded semi-conducting shield

Jacket:
- Reinforced, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C FLAT TYPE SHD 2000 VOLTS P-102-050 MSHA

Applications:
- Designed for use as trailing cables on AC mining equipment:
  - Where induced voltages in the grounding system will not produce a hazard
  - On low- and medium-voltage AC circuits where shielding is desired or required

Features:
- Flexible insulation shield provides shock hazard protection
- Excellent heat, moisture, steam, oil, chemical and radiation resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection

Packaging:
- Material cut to length and shipped on non-returnable reels

2 AWG THRU 3/0 AWG CONDUCTORS, THREE CONDUCTOR, FLAT PORTABLE W/GROUND, TYPE SHD - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	NOMINAL CABLE DIMENSIONS		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm		INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13792.020200	3	2	259	0.070	1.8	6	0.94 x 2.45	23.9 x 62.2	938	1395	2243	3338	159
13792.020100	3	1	259	0.080	2.0	5	1.04 x 2.64	26.4 x 67.1	1156	1721	2540	3780	184
13792.025100	3	1/0	259	0.080	2.0	4	1.08 x 2.82	27.4 x 71.6	1414	2104	2915	4338	211
13790.025200	3	2/0	329	0.080	2.0	3	1.18 x 2.99	30.0 x 76.0	1766	2628	3346	4980	243
13792.025300	3	3/0	413	0.080	2.0	2	1.25 x 3.29	31.8 x 83.6	2173	3234	3890	5789	279

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal; subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

Anaconda® Brand Type SHD-GC Power, Shielded Round Portable w/Ground-Check, EPR/CPE 2000 Volts 90˚C, Three Conductor

Product Construction

Conductor:
- 6 AWG thru 500 kcmil coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation

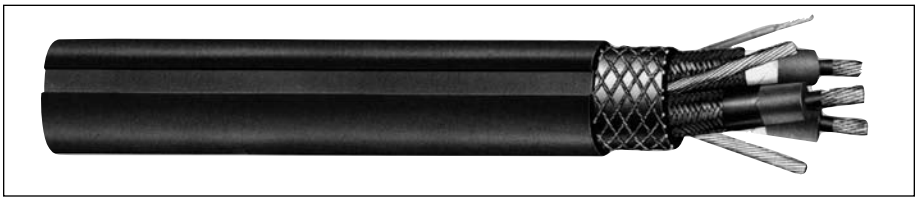
Insulation Shield:
- A flexible coated copper/textile braid shield is applied over non-conducting overlapped tape

Ground-Check Conductor:
- Annealed copper, rope-lay-stranded per ASTM B172, insulated with high-strength yellow polypropylene

Grounding Conductors:
- Coated copper, rope-lay-stranded per ASTM B172
- Two conductors in contact with the flexible copper braid shield

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE SHD-GC 2000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-045 MSHA



Options:
- Colored jackets are available
- TPU (Thermoplastic Polyurethane) jacket
- Anamaxx® jacket
- Other jacket materials available upon request

Applications:
- Designed for use as trailing cables on AC mining equipment:
  - Where a ground-check conductor is required for fail-safe monitoring
  - With Bretby-type cable handling devices on longwall shearers
  - Where induced voltages in the grounding system will not produce a hazard
  - On low- and medium-voltage AC circuits where shielding is desired or required

Features:
- Flexible insulation shield provides shock hazard protection
- Excellent heat, moisture, steam, oil, chemical and radiation resistance

Features (cont'd):
- Flexible for easy handling
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

6 AWG THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, SHIELDED ROUND PORTABLE W/GROUND-CHECK, TYPE SHD-GC - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13306.240600	3	6	133	0.070	1.8	10	10	0.155	3.9	1.29	32.8	502	748	1130	1682	93
13306.240400	3	4	259	0.070	1.8	8	10	0.155	3.9	1.40	35.6	678	1009	1460	2173	122
13349.340300	3	3	259	0.070	1.8	7	10	0.170	4.3	1.51	38.3	831	1237	1680	2500	140
13302.253396	3	2	259	0.070	1.8	6	8	0.170	4.3	1.59	40.4	1007	1499	1990	2961	159
13301.814577	3	1	259	0.080	2.0	5	8	0.190	4.8	1.76	44.7	1228	1828	2385	3549	184
13351.179353	3	1/0	259	0.080	2.0	4	8	0.190	4.8	1.86	47.2	1485	2210	2765	4115	211
13352.658076	3	2/0	329	0.080	2.0	3	8	0.205	5.2	2.00	50.8	1832	2726	3255	4844	243
13349.645300	3	3/0	413	0.080	2.0	2	8	0.205	5.2	2.13	54.1	2249	3347	3890	5789	279
13354.490389	3	4/0	532	0.080	2.0	1	8	0.220	5.6	2.31	58.7	2854	4248	4720	7024	321
13349.646000	3	250	608	0.095	2.4	1/0	6	0.220	5.6	2.51	63.8	3325	4949	5460	8125	355
13349.646100	3	300	741	0.095	2.4	1/0	6	0.235	6.0	2.68	68.1	3946	5873	6395	9517	398
13362.315522	3	350	851	0.095	2.4	2/0	6	0.250	6.4	2.81	71.4	4493	6686	7280	10834	435
13349.646500	3	500	1221	0.095	2.4	4/0	6	0.265	6.7	3.19	81.0	6641	9883	9820	14614	536

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

General Cable

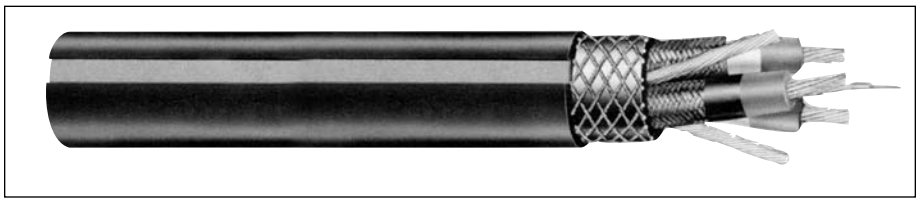
MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

ANACONDA® BRAND

Anaconda® Brand Type SHD Plus GC Power, Shielded Round Portable w/Extensible Ground-Check, EPR/CPE

2000 Volts 90°C, Three Conductor



Product Construction

Conductor:
- 1 AWG thru 500 kcmil coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation

Insulation Shield:
- A flexible coated copper/textile braid shield is applied over a non-conducting overlapped tape

Ground-Check Conductor:
- Coated copper, specially stranded to provide extensibility without sustaining tensile load, thereby providing maximum resistance to flex fatigue
- Insulated with high-strength polypropylene and placed in the center interstice

Grounding Conductors:
- Three coated copper, rope-lay-stranded per ASTM B172 in contact with the flexible braid shield

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE SHD PLUS GC 2000 VOLTS (-50°C) FT1 FT5 CSA LR27161 P-7K102-045 MSHA

Options:
- Colored jackets are available
- TPU (Thermoplastic Polyurethane) jacket
- Anamaxx® jacket
- Other jacket materials available upon request

Applications:
- Designed for use as a trailing cable on AC mining equipment:
  - Where maximum safety is mandatory, including underground mining machines where induced voltages in an unbalanced grounding system could be hazardous
  - On low- and medium-voltage AC circuits where shielding is desired or required

Features:
- Flexible insulation shield provides shock hazard protection
- Symmetrical grounding system does not produce induced voltages when operating in a balanced 3-phase system
- Excellent heat, moisture, steam, oil, chemical and radiation resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

1 AWG THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, SHIELDED ROUND PORTABLE W/EXTENSIBLE GROUND-CHECK, TYPE SHD PLUS GC - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
13340.340100	3	1	259	0.080	2.0	7	16	0.190	4.8	1.85	47.0	1196	1780	2450	3645	184
13340.355100	3	1/0	259	0.080	2.0	6	16	0.190	4.8	1.95	49.5	1469	2186	2779	4129	211
13340.645200	3	2/0	329	0.080	2.0	5	16	0.205	5.2	2.09	53.1	1819	2708	3310	4925	243
13340.645300	3	3/0	413	0.080	2.0	4	16	0.205	5.2	2.21	56.1	2237	3330	3950	5877	279
13340.645400	3	4/0	532	0.080	2.0	3	16	0.220	5.6	2.36	59.9	2845	4233	4630	6889	321
13340.646000	3	250	608	0.095	2.4	2	16	0.235	6.0	2.51	63.8	3290	4896	5440	8096	355
13340.646100	3	300	741	0.095	2.4	1	16	0.235	6.0	2.68	68.1	4002	5956	6300	9375	398
13340.646200	3	350	851	0.095	2.4	1	16	0.250	6.4	2.81	71.4	4461	6639	7030	10462	435
13340.646500	3	500	1221	0.095	2.4	2/0	16	0.265	6.7	3.19	81.0	6460	9614	9525	14175	536

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

Anaconda® Brand Type SHD-PCG (Longwall) Power, Shielded Round Portable w/Monitor and/or Control Conductor(s), EPR/CPE 2000 Volts 90˚C, Three Conductor

Product Construction

Conductor:
- 1/0 AWG thru 4/0 AWG coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation

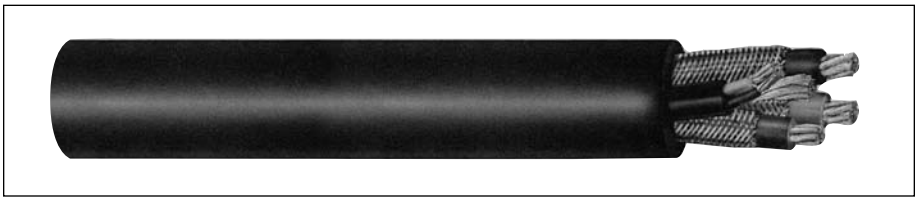
Insulation Shield:
- A flexible coated copper/textile braid shield is applied over a non-conducting overlapped tape

Monitor and/or Control Conductors:
- One or more conductors, copper, rope-lay-stranded per ASTM B172, insulated with Ethylene Propylene Rubber (EPR), extruded jacket over the control conductor(s)

Grounding Conductor:
- Coated copper, rope-lay-stranded per ASTM B172, in the center of the assembly

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE SHD-PCG 2000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-045 MSHA



Options:
- Colored jackets are available
- TPU (Thermoplastic Polyurethane) jacket
- Anamaxx® jacket
- Other jacket materials available upon request

Applications:
- Designed for use on longwall mining equipment:
  - Where monitor and/or control conductors are needed or desired
  - Where induced voltages in grounding systems will not produce a hazard
  - On low- and medium-voltage AC circuits where shielding is desired or required

Features:
- Improved conductor design and new stranding process provide increased flexibility and extend flex life
- Excellent heat, moisture, steam, oil, chemical and radiation resistance
- Flexible for easy handling

Features (cont'd):
- Resists cutting, impact, abrasion and flame
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

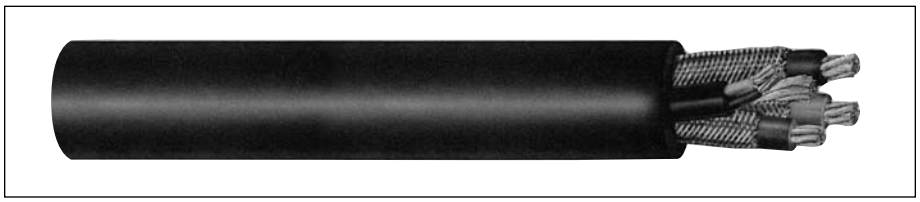
Packaging:
- Material cut to length and shipped on non-returnable reels

1/0 AWG THRU 4/0 AWG CONDUCTORS, THREE CONDUCTOR, SHIELDED ROUND PORTABLE W/MONITOR AND/OR CONTROL CONDUCTOR(S), TYPE SHD-PCG (LONGWALL) - 2000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	
13341.345100	3	1/0	259	0.080	2.0	3	8	0.205	5.2	2.05	52.1	3092	4602	211
13341.645200	3	2/0	329	0.080	2.0	2	8	0.220	5.6	2.25	57.1	3698	5503	243
13341.645300	3	3/0	413	0.080	2.0	1	8	0.220	5.6	2.32	58.9	4295	6392	279
13341.645400	3	4/0	532	0.080	2.0	1/0	8	0.250	6.3	2.62	66.5	5115	7612	321

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

Anaconda® Brand Type SHD-PCG (Longwall) Power, Shielded Round Portable w/Monitor and/or Control Conductor(s), EPR/CPE 5000 Volts 90˚C, Three Conductor



Product Construction

Conductor:
- 2 AWG thru 4/0 AWG coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Insulation:
- Ethylene Propylene Rubber (EPR) insulation

Insulation Shield:
- A flexible coated copper/textile braid shield is applied over a non-conducting overlapped tape

Monitor and/or Control Conductors:
- One or more conductors, copper, rope-lay-stranded per ASTM B172, insulated with Ethylene Propylene Rubber (EPR), extruded jacket over the control conductor(s)

Grounding Conductor:
- Coated copper, rope-lay-stranded per ASTM B172, in the center of the assembly

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE SHD-PCG 5000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-046 MSHA

Options:
- Colored jackets are available
- TPU (Thermoplastic Polyurethane) jacket
- Anamaxx® jacket
- Other jacket materials available upon request

Applications:
- Designed for use on longwall mining equipment:
  - Where monitor and/or control conductors are needed or desired
  - Where induced voltages in grounding systems will not produce a hazard
  - On low- and medium-voltage AC circuits where shielding is desired or required

Features:
- Improved conductor design and new stranding process provide increased flexibility and extend flex life
- Excellent heat, moisture, steam, oil, corona, chemical and radiation resistance
- Flexible for easy handling
- Resists cutting, impact, abrasion and flame
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

2 AWG THRU 4/0 AWG CONDUCTORS, THREE CONDUCTOR, SHIELDED ROUND PORTABLE W/MONITOR AND/OR CONTROL CONDUCTOR(S), TYPE SHD-PCG (LONGWALL) - 5000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	
16249.310200	3	2	259	0.110	2.8	4	8	0.205	5.2	2.03	51.5	2465	3669	159
16249.310100	3	1	259	0.110	2.8	4	8	0.220	5.6	2.12	53.8	2825	4205	184
16249.345100	3	1/0	259	0.110	2.8	3	8	0.220	5.6	2.26	57.4	3255	4845	211
16249.645200	3	2/0	329	0.110	2.8	2	8	0.220	5.6	2.40	61.0	3830	5700	243
16249.645300	3	3/0	413	0.110	2.8	1	8	0.235	6.0	2.50	65.5	4510	6713	279
16249.645400	3	4/0	532	0.110	2.8	1/0	8	0.250	6.3	2.76	70.1	5310	7904	321

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weights may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

ANACONDA® BRAND

Certified Canadian Standard Association

MSHA Mine Safety and Health Administration

General Cable

Anaconda® Brand Type SHD-GC Power, Shielded Round Portable w/Ground-Check, EPR/CPE 5000 Volts 90˚C, Three Conductor

Product Construction

Conductor:
- 6 AWG thru 500 kcmil coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Extruded Strand Shield (ESS):
- Extruded thermosetting semi-conducting stress control layer over conductor

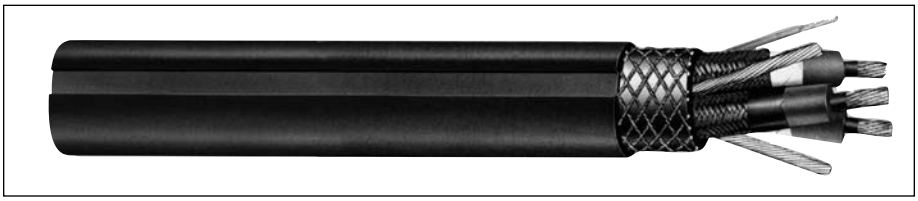
Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored for contrasting with black conducting layers

Insulation Shield:
- A flexible coated copper/textile braid shield is applied over a non-conducting overlapped tape

Ground-Check Conductor:
- Annealed copper, rope-lay-stranded per ASTM B172, insulated with high-strength yellow polypropylene

Grounding Conductor:
- Coated copper, rope-lay-stranded per ASTM B172
- Two conductors in contact with the flexible copper braid shield

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)



Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE SHD-GC 5000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-046 MSHA

Options:
- Colored jackets are available
- TPU (Thermoplastic Polyurethane) jacket
- Anamaxx® jacket
- Other jacket materials available upon request

Applications:
- Designed for use as a trailing cable on AC mining equipment:
  - Where service conditions are severe and maximum safety is mandatory (such as power shovels and draglines in open-pit mines, quarries, gantry cranes and slag reclaiming)
  - For high-voltage distribution in underground mines where frequent relocation is necessary

Features:
- Simultaneous extrusion and vulcanization of both strand shield and insulation form a virtually perfect electrode, eliminating unequal electrical stresses
- Excellent heat, moisture, steam, oil, corona, chemical and radiation resistance

Features (cont'd):
- Flexible for easy handling
- High dielectric strength
- Electrical stability under stress
- Low dielectric loss
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

6 AWG THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, SHIELDED ROUND PORTABLE W/GROUND-CHECK, TYPE SHD-GC - 5000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
16241.210600	3	6	133	0.110	2.8	10	8	0.185	4.7	1.56	39.6	540	804	1560	2322	93
16204.858221	3	4	259	0.110	2.8	8	8	0.185	4.7	1.68	42.7	720	1072	1895	2820	122
16202.317964	3	2	259	0.110	2.8	6	8	0.205	5.2	1.87	47.9	1030	1533	2445	3639	159
16201.396409	3	1	259	0.110	2.8	5	8	0.205	5.2	1.95	49.5	1248	1857	2800	4167	184
16241.615100	3	1/0	259	0.110	2.8	4	8	0.220	5.6	2.08	52.8	1533	2281	3230	4807	211
16252.271926	3	2/0	329	0.110	2.8	3	8	0.220	5.6	2.20	55.9	1854	2760	3800	5655	243
16241.215300	3	3/0	413	0.110	2.8	2	8	0.235	6.0	2.36	59.9	2322	3456	4475	6660	279
16254.730315	3	4/0	532	0.110	2.8	1	8	0.235	6.0	2.50	63.5	2936	4369	5265	7835	321
16241.216000	3	250	608	0.120	3.0	1/0	6	0.250	6.4	2.69	68.3	3340	4970	6105	9085	355
16241.216300	3	300	741	0.120	3.0	1/0	6	0.250	6.4	2.81	71.4	3962	5897	6875	10231	398
16262.687414	3	350	851	0.120	3.0	2/0	6	0.265	6.7	2.95	74.9	4522	6730	7795	11600	435
16265.570479	3	500	1221	0.120	3.0	4/0	6	0.280	7.1	3.31	84.1	6515	9696	10415	15499	536

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

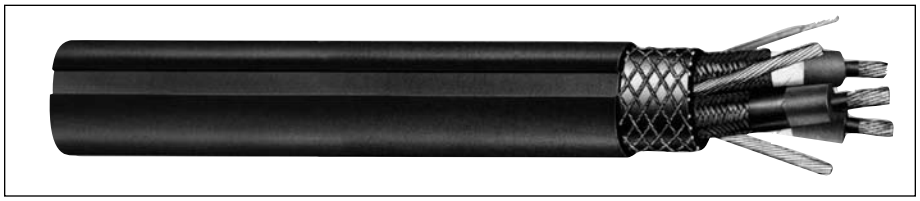
General Cable

MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

ANACONDA® BRAND

Anaconda® Brand Type SHD-GC Power, Shielded Round Portable w/Ground-Check, EPR/CPE 8000 Volts 90˚C, Three Conductor



Product Construction

Conductor:
- 4 AWG thru 500 kcmil coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Extruded Strand Shield (ESS):
- Extruded thermosetting semi-conducting stress control layer over conductor

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored for contrast with black conducting layer

Insulation Shield:
- A flexible coated copper/textile braid shield is applied over a conducting overlapped tape

Ground-Check Conductor:
- Annealed copper, rope-lay-stranded per ASTM B172, insulated with high-strength yellow polypropylene

Grounding Conductor:
- Coated copper, rope-lay-stranded per ASTM B172
- Two conductors in contact with the flexible copper braid shield

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE SHD-GC 8000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-046 MSHA

Options:
- Colored jackets are available
- TPU (Thermoplastic Polyurethane) jacket
- Anamaxx® jacket
- Other jacket materials available upon request

Applications:
- Designed for use as a trailing cable on AC mining equipment:
  - Where service conditions are severe and maximum safety is mandatory (such as power shovels and draglines in open-pit mines, quarries, gantry cranes and slag reclaiming)
  - For high-voltage distribution in underground mines where frequent relocation is necessary

Features:
- Simultaneous extrusion and vulcanization of both strand shield and insulation form a virtually perfect electrode, eliminating unequal electrical stresses
- Excellent heat, moisture, steam, oil, corona, chemical and radiation resistance
- Flexible for easy handling
- High dielectric strength
- Electrical stability under stress
- Low dielectric loss
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

4 AWG THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, SHIELDED ROUND PORTABLE W/GROUND-CHECK, TYPE SHD-GC - 8000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
16243.310400	3	4	259	0.150	3.8	8	8	0.205	5.2	1.94	49.3	764	1138	2308	3594	122
16243.310200	3	2	259	0.150	3.8	6	8	0.220	5.6	2.12	53.8	1064	1583	2920	4554	159
16243.310100	3	1	259	0.150	3.8	5	8	0.220	5.6	2.21	56.1	1287	1915	3292	5104	184
16243.615100	3	1/0	259	0.150	3.8	4	8	0.220	5.6	2.32	58.9	1553	2311	3675	5700	211
16252.201837	3	2/0	329	0.150	3.8	3	8	0.235	6.0	2.46	62.5	1896	2822	4304	6593	243
16243.615300	3	3/0	413	0.150	3.8	2	8	0.250	6.4	2.62	66.5	2329	3466	5200	7738	279
16254.709412	3	4/0	532	0.150	3.8	1	8	0.250	6.4	2.75	69.8	2889	4299	5840	8713	321
16243.616000	3	250	608	0.150	3.8	1/0	6	0.250	6.4	2.89	73.4	3434	5111	6774	9948	355
16243.616100	3	300	741	0.150	3.8	1/0	6	0.265	6.7	3.04	77.2	3975	5915	7423	11384	398
16243.616200	3	350	851	0.150	3.8	2/0	6	0.280	7.1	3.21	81.3	4522	6730	8543	12739	435
16243.616500	3	500	1221	0.150	3.8	4/0	6	0.295	7.5	3.56	90.4	6566	9771	11260	16757	536

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

ANACONDA® BRAND

Certified Canadian Standard Association

MSHA Mine Safety and Health Administration

General Cable

Anaconda® Brand Type SHD-GC Power, Shielded Round Portable w/Ground-Check, EPR/CPE 15000 Volts 90˚C, Three Conductor

Product Construction

Conductor:
- 2 AWG thru 4/0 AWG coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Extruded Strand Shield (ESS):
- Extruded thermosetting semi-conducting stress control layer over conductor

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored for contrast with black conducting layers

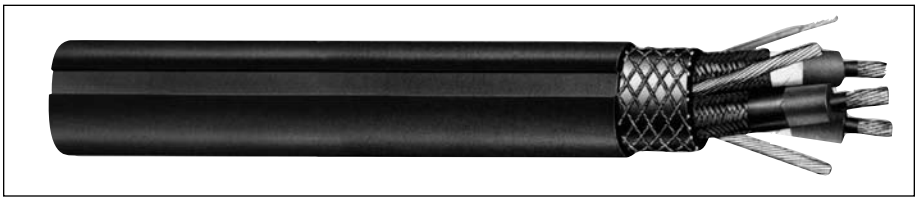
Insulation Shield:
- A flexible coated copper/textile braid shield is applied over a conducting overlapped tape

Ground-Check Conductor:
- Annealed copper, rope-lay-stranded per ASTM B172, insulated with high-strength yellow polypropylene

Grounding Conductor:
- Coated copper, rope-lay-stranded per ASTM B172
- Two conductors in contact with the flexible copper braid shield

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE SHD-GC 15000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-046 MSHA



Options:
- Colored jackets are available
- TPU (Thermoplastic Polyurethane) jacket
- Anamaxx® jacket
- Other jacket materials available upon request

Applications:
- Designed for use as a trailing cable on AC mining equipment:
  - Where service conditions are severe and maximum safety is mandatory (such as power shovels and draglines in open-pit mines, quarries,gantry cranes and slag reclaiming)
  - For high-voltage distribution in underground mines where frequent relocation is necessary

Features:
- Simultaneous extrusion and vulcanization of both strand shield and insulation form a virtually perfect electrode, eliminating unequal electrical stresses
- Excellent heat, moisture, steam, oil, corona, chemical and radiation resistance
- Flexible for easy handling
- High dielectric strength
- Electrical stability under stress
- Low dielectric loss
- Resists cutting, impact, abrasion, flame and sunlight

Features (cont'd):
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

2 AWG THRU 4/0 AWG CONDUCTORS, THREE CONDUCTOR, SHIELDED ROUND PORTABLE W/GROUND-CHECK, TYPE SHD-GC - 15000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
16245.310200	3	2	259	0.210	5.3	6	8	0.235	6.0	2.41	61.2	870	1295	3572	5529	164
16245.310100	3	1	259	0.210	5.3	5	8	0.235	6.0	2.52	64.0	1307	1946	4060	6042	187
16245.315100	3	1/0	259	0.210	5.3	4	8	0.250	6.4	2.64	67.0	1574	2342	4495	6927	215
16299.625200	3	2/0	329	0.210	5.3	3	8	0.250	6.4	2.73	69.3	1930	2872	5010	7783	246
16245.615300	3	3/0	413	0.210	5.3	2	8	0.265	6.7	2.90	73.7	2359	3511	5995	8922	283
16245.615400	3	4/0	532	0.210	5.3	1	8	0.265	6.7	3.05	77.5	2973	4425	6860	10209	325

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

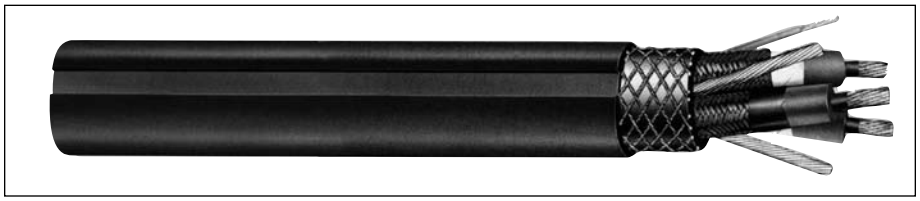
General Cable

MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

ANACONDA® BRAND

Anaconda® Brand Type SHD-GC Power, Shielded Round Portable w/Ground-Check, EPR/CPE 25000 Volts 90˚C, Three Conductor



Product Construction

Conductor:
- 1 AWG thru 4/0 AWG coated annealed copper, bunched wires, rope-lay-stranded per ASTM B172

Extruded Strand Shield (ESS):
- Extruded thermosetting semi-conducting stress control layer over conductor

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored for contrast with black conducting layers

Insulation Shield:
- An extruded conducting layer covered by a conducting tape, and a flexible coated copper/ textile braid shield overall provides greater mechanical protection than an equal thickness of insulation

Ground-Check Conductor:
- Annealed copper, rope-lay-stranded per ASTM B172, insulated with high-strength yellow polypropylene

Grounding Conductors:
- Coated copper, rope-lay-stranded per ASTM B172
- Two conductors in contact with the flexible copper braid shield

Jacket:
- Reinforced, two-layer, extra-heavy-duty, lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE SHD-GC 25000 VOLTS (-50˚C) FT1 FT5 CSA LR27161 P-7K102-046 MSHA

Options:
- Colored jackets are available
- TPU (Thermoplastic Polyurethane) jacket
- Anamaxx® jacket
- Other jacket materials available upon request

Applications:
- Designed for use as a trailing cable on AC mining equipment:
  - Where service conditions are severe and maximum safety is mandatory (such as power shovels and draglines in open-pit mines, quarries, gantry cranes and slag reclaiming)
  - For high-voltage distribution in underground mines where frequent relocation is necessary

Features:
- Simultaneous extrusion and vulcanization of the strand shield, insulation and insulation shield form a virtually perfect electrode, eliminating unequal electrical stresses
- Excellent heat, moisture, steam, oil, corona, chemical and radiation resistance
- Flexible for easy handling
- High dielectric strength
- Electrical stability under stress
- Low dielectric loss
- Resists cutting, impact, abrasion, flame and sunlight
- Excellent thermal stability and physical properties over a broad temperature range
- Two-layer jacket is reinforced to provide maximum protection from mechanical damage—the cause of most portable cable failures

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96 Portable Power Cables and is certified by Natural Resources Canada

Packaging:
- Material cut to length and shipped on non-returnable reels

1 AWG THRU 4/0 AWG CONDUCTORS, THREE CONDUCTOR, SHIELDED ROUND PORTABLE W/GROUND-CHECK, TYPE SHD-GC - 25000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
16247.310100	3	1	259	0.260	6.6	5	8	0.265	6.7	2.95	74.93	1306	1943	5290	7872	191
16247.315100	3	1/0	259	0.260	6.6	4	8	0.265	6.7	3.05	77.47	1556	2315	5800	8631	218
16247.315200	3	2/0	329	0.260	6.6	3	8	0.280	7.1	3.20	81.28	1888	2810	6515	9695	249
16247.615300	3	3/0	413	0.260	6.6	2	8	0.280	7.1	3.33	84.58	2303	3428	7215	10737	286
16247.615400	3	4/0	532	0.260	6.6	1	8	0.295	7.5	3.50	88.90	2889	4300	8250	12277	327

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

ANACONDA® BRAND
Certified Canadian Standard Association
MSHA Mine Safety and Health Administration
General Cable

Anaconda® Brand Type MP-GC (Uniblend® EPR), Mine Power Feeder w/Ground-Check, EPR/CPE 5000 Volts 90˚C, Three Conductor

Product Construction

Conductor:
- 6 AWG thru 500 kcmil annealed bare copper, Compact Class B strand

Extruded Strand Shield (ESS):
- Extruded thermosetting semi-conducting stress control layer over conductor

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored for contrast with black conducting layers

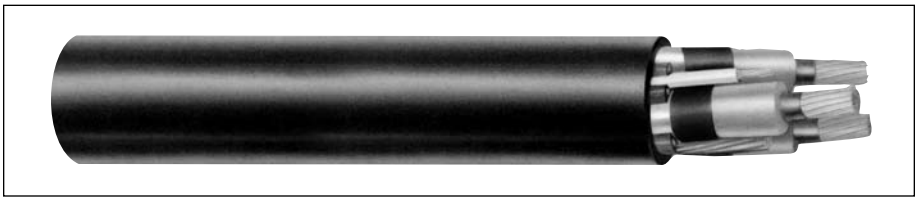
Extruded Insulation Shield (EIS):
- Extruded thermosetting semi-conducting layer, free stripping from insulation with color-coded (black, white and red) marker strip placed under the copper tape

Insulation Shield:
- Overlapped annealed copper tape

Ground-Check Conductor:
- Annealed copper Class B strand, insulated with yellow polypropylene

Grounding Conductors:
- Two coated annealed copper conductors, Class B strand

Jacket:
- Lead-cured Chlorinated Polyethylene (CPE)



Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE MP-GC 5000 VOLTS CSA LR27161 P-102-007 MSHA

Options:
- Cross-Linked Polyethylene (XLPE) insulation and a Polyvinyl Chloride (PVC) jacket
- Other jacket materials available upon request

Applications:
- Provides high-voltage distribution intended for permanent installations
- Designed for use:
  - In underground mining and bore holes
  - In aerial installations, ducts or direct burial

Features:
- Excellent heat, moisture, oil, corona, chemical and radiation resistance
- High dielectric strength
- Electrical stability under stress

Features (cont'd):
- Low dielectric loss
- Triple extrusion forms a virtually perfect electrode, eliminating unequal electrical stresses
- Tough and reliable
- Highly resistant to tearing, punctures, abrasions, oil and flame

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96.1 Mine Power Feeder Cables

Packaging:
- Material cut to length and shipped on non-returnable reels

6 AWG THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, MINE POWER FEEDER W/GROUND-CHECK, TYPE MP-GC (UNIBLEND® EPR) - 5000 VOLTS*

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)/ COND. STRAND		GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm				INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
16361.910600	3	6	7	0.090	2.3	10	7	8	0.110	2.8	1.30	33.0	468	696	1060	1577	93
16361.910400	3	4	7	0.090	2.3	8	7	8	0.110	2.8	1.41	35.8	664	988	1325	1972	122
16361.910200	3	2	7	0.090	2.3	6	7	8	0.110	2.8	1.47	37.3	970	1444	1651	2457	159
16361.910100	3	1	19	0.090	2.3	5	7	8	0.110	2.8	1.54	39.1	1186	1764	1918	2854	184
16361.915100	3	1/0	19	0.090	2.3	4	7	8	0.110	2.8	1.63	41.4	1453	2162	2244	3339	211
16361.915200	3	2/0	19	0.090	2.3	3	7	8	0.110	2.8	1.72	43.7	1623	2415	2644	3935	243
16361.915300	3	3/0	19	0.090	2.3	2	7	8	0.140	3.6	1.89	48.0	2215	3296	3265	4859	279
16361.915400	3	4/0	19	0.090	2.3	1	19	8	0.140	3.6	2.01	51.0	2749	4091	3890	5789	321
16361.916000	3	250	37	0.090	2.3	1/0	19	8	0.140	3.6	2.10	53.3	3263	4857	4474	6658	355
16361.916200	3	350	37	0.090	2.3	2/0	19	8	0.140	3.6	2.31	58.7	4401	6549	5765	8579	435
16361.916500	3	500	37	0.090	2.3	4/0	19	8	0.140	3.6	2.59	65.8	6335	9428	7906	11765	536

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.
*100% insulation level, grounded.

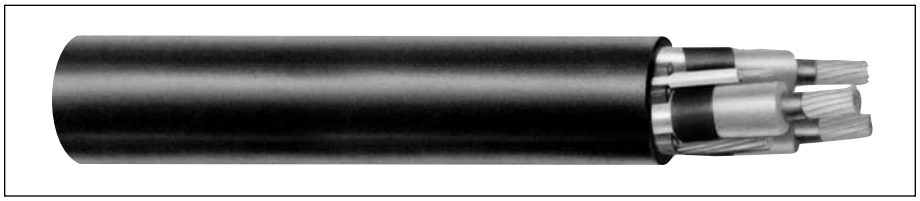
General Cable

MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

ANACONDA® BRAND

Anaconda® Brand Type MP-GC (Uniblend® EPR), Mine Power Feeder w/Ground-Check, EPR/CPE 8000 Volts 90˚C, Three Conductor



Product Construction

Conductor:
- 6 AWG thru 500 kcmil annealed bare copper, Compact Class B strand

Extruded Strand Shield (ESS):
- Extruded thermosetting semi-conducting stress control layer over conductor

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored for contrast with black conducting layers

Extruded Insulation Shield (EIS):
- Extruded thermosetting semi-conducting layer, free stripping from insulation with color-coded (black, white and red) marker strip placed under the copper tape

Insulation Shield:
- Overlapped annealed copper tape

Ground-Check Conductor:
- Annealed copper Class B strand, insulated with yellow polypropylene

Grounding Conductors:
- Two coated annealed copper conductors, Class B strand

Jacket:
- Lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE MP-GC 8000 VOLTS CSA LR27161 P-102-007 MSHA

Options:
- Cross-Linked Polyethylene (XLPE) insulation and a Polyvinyl Chloride (PVC) jacket
- Other jacket materials available upon request

Applications:
- Provides high-voltage distribution intended for permanent installations
- Designed for use:
  - In underground mining and bore holes
  - In aerial installations, ducts or direct burial

Features:
- Excellent heat, moisture, oil, corona, chemical and radiation resistance
- High dielectric strength
- Electrical stability under stress
- Low dielectric loss
- Triple extrusion forms a virtually perfect electrode, eliminating unequal electrical stresses
- Tough and reliable
- Highly resistant to tearing, punctures, abrasions, oil and flame

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96.1 Mine Power Feeder Cables

Packaging:
- Material cut to length and shipped on non-returnable reels

6 AWG THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, MINE POWER FEEDER W/GROUND-CHECK, TYPE MP-GC (UNIBLEND® EPR) - 8000 VOLTS*

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)/ COND. STRAND		GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm				INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
16363.910600	3	6	7	0.115	2.9	10	7	8	0.110	2.8	1.41	35.8	478	712	1175	1749	93
16363.910400	3	4	7	0.115	2.9	8	7	8	0.110	2.8	1.52	38.6	674	1003	1455	2165	122
16363.910200	3	2	7	0.115	2.9	6	7	8	0.110	2.8	1.58	40.1	981	1459	1787	2659	159
16363.910100	3	1	19	0.115	2.9	5	7	8	0.110	2.8	1.66	42.2	1196	1780	2059	3064	184
16363.915100	3	1/0	19	0.115	2.9	4	7	8	0.110	2.8	1.74	44.2	1463	2177	2378	3539	211
16363.915200	3	2/0	19	0.115	2.9	3	7	8	0.140	3.6	1.90	48.3	1801	2681	2912	4334	243
16363.915300	3	3/0	19	0.115	2.9	2	7	8	0.140	3.6	2.00	50.8	2225	3311	3432	5107	279
16354.552364	3	4/0	19	0.115	2.9	1	19	8	0.140	3.6	2.12	53.8	2671	3975	4056	6035	321
16363.916000	3	250	37	0.115	2.9	1/0	19	8	0.140	3.6	2.22	56.4	2909	4330	4647	6915	355
16363.916200	3	350	37	0.115	2.9	2/0	19	8	0.140	3.6	2.43	61.7	4411	6565	5979	8898	435
16363.916500	3	500	37	0.115	2.9	4/0	19	8	0.140	3.6	2.70	68.6	6346	9443	8150	12129	536

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weights may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.
*100% insulation level, grounded.

ANACONDA® BRAND

Certified Canadian Standard Association

MSHA Mine Safety and Health Administration

General Cable

Anaconda® Brand Type MP-GC (Uniblend® EPR), Mine Power Feeder w/Ground-Check, EPR/CPE 15000 Volts 90°C, Three Conductor

Product Construction

Conductor:
- 2 AWG thru 500 kcmil annealed bare copper, Compact Class B strand

Extruded Strand Shield (ESS):
- Extruded thermosetting semi-conducting stress control layer over conductor

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored for contrast with black conducting layers

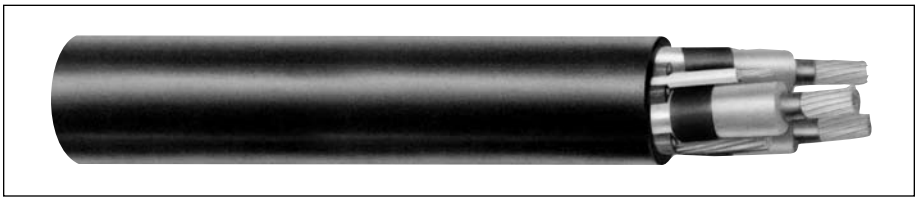
Extruded Insulation Shield (EIS):
- Extruded thermosetting semi-conducting layer, free stripping from insulation with color-coded (black, white and red) marker strip placed under the copper tape

Insulation Shield:
- Overlapped annealed copper tape

Ground-Check Conductor:
- Annealed copper Class B strand, insulated with yellow polypropylene

Grounding Conductors:
- Two coated annealed copper conductors, Class B strand

Jacket:
- Lead-cured Chlorinated Polyethylene (CPE)



Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE MP-GC 15000 VOLTS CSA LR27161 P-102-007 MSHA

Options:
- Cross-Linked Polyethylene (XLPE) insulation and a Polyvinyl Chloride (PVC) jacket
- Other jacket materials available upon request

Applications:
- Provides high-voltage distribution intended for permanent installations
- Designed for use:
  - In underground mining and bore holes
  - In aerial installations, ducts or direct burial

Features:
- Excellent heat, moisture, oil, corona, chemical and radiation resistance
- High dielectric strength
- Electrical stability under stress
- Low dielectric loss

Features (cont'd):
- Triple extrusion forms a virtually perfect electrode, eliminating unequal electrical stresses
- Tough and reliable
- Highly resistant to tearing, punctures, abrasions, oil and flame

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96.1 Mine Power Feeder Cables

Packaging:
- Material cut to length and shipped on non-returnable reels

2 AWG THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, MINE POWER FEEDER W/GROUND-CHECK, TYPE MP-GC (UNIBLEND® EPR) - 15000 VOLTS*

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
16365.910200	3	2	7	0.175	4.4	6	8	0.140	3.6	1.90	48.3	938	1395	2248	3345	164
16365.910100	3	1	19	0.175	4.4	5	8	0.140	3.6	1.99	50.6	1122	1669	2552	3798	187
16365.915100	3	1/0	19	0.175	4.4	4	8	0.140	3.6	2.07	52.6	1490	2218	2901	4317	215
16365.915200	3	2/0	19	0.175	4.4	3	8	0.140	3.6	2.16	54.9	1808	2691	3341	4972	246
16365.915300	3	3/0	19	0.175	4.4	2	8	0.140	3.6	2.27	57.7	2252	3352	3878	5771	283
16354.396889	3	4/0	19	0.175	4.4	1	8	0.140	3.6	2.39	60.7	2688	4000	4541	6758	325
16365.916000	3	250	37	0.175	4.4	1/0	8	0.140	3.6	2.48	63.0	3269	4865	5145	7657	359
16362.279989	3	350	37	0.175	4.4	2/0	8	0.140	3.6	2.70	68.6	4309	6412	6517	9698	438
16365.916500	3	500	37	0.175	4.4	4/0	8	0.170	4.3	3.08	78.2	6208	9239	9058	13480	536

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.
*100% insulation level, grounded.

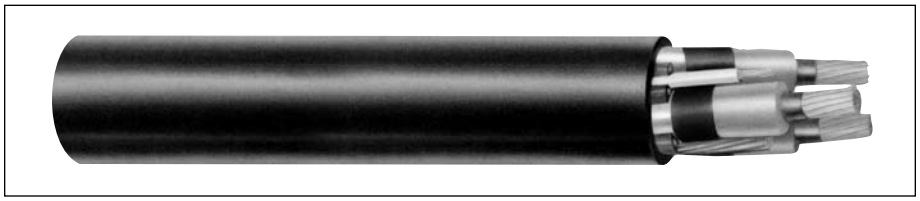
General Cable

MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

ANACONDA® BRAND

Anaconda® Brand Type MP-GC (Uniblend® EPR), Mine Power Feeder w/Ground-Check, EPR/CPE 25000 Volts 90˚C, Three Conductor



Product Construction

Conductor:
- 1 AWG thru 500 kcmil annealed bare copper, Compact Class B strand

Extruded Strand Shield (ESS):
- Extruded thermosetting semi-conducting stress control layer over conductor

Insulation:
- Ethylene Propylene Rubber (EPR) insulation colored for contrast with black conducting layers

Extruded Insulation Shield (EIS):
- Extruded thermosetting semi-conducting layer, free stripping from insulation with color-coded (black, white and red) marker strip placed under the copper tape

Insulation Shield:
- Overlapped annealed copper tape

Ground-Check Conductor:
- Annealed copper Class B strand, insulated with yellow polypropylene

Grounding Conductors:
- Two coated annealed copper conductors, Class B strand

Jacket:
- Lead-cured Chlorinated Polyethylene (CPE)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE), 3/C TYPE MP-GC 25000 VOLTS CSA LR27161 P-102-007 MSHA

Options:
- Cross-Linked Polyethylene (XLPE) insulation and a Polyvinyl Chloride (PVC) jacket
- Other jacket materials available upon request

Applications:
- Provides high-voltage distribution intended for permanent installations
- Designed for use:
  - In underground mining and bore holes
  - In aerial installations, ducts or direct burial

Features:
- Excellent heat, moisture, oil, corona, chemical and radiation resistance
- High dielectric strength
- Electrical stability under stress
- Low dielectric loss
- Triple extrusion forms a virtually perfect electrode, eliminating unequal electrical stresses
- Tough and reliable
- Highly resistant to tearing, punctures, abrasions, oil and flame

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Approved by the Pennsylvania Department of Environmental Protection
- Meets CAN/CSA-C22.2 No. 96.1 Mine Power Feeder Cables

Packaging:
- Material cut to length and shipped on non-returnable reels

1 AWG THRU 500 KCMIL CONDUCTORS, THREE CONDUCTOR, MINE POWER FEEDER W/GROUND-CHECK, TYPE MP-GC (UNIBLEND® EPR) - 25000 VOLTS*

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
16367.910100	3	1	19	0.260	6.4	5	8	0.140	3.6	2.37	60.2	1261	1877	3435	5112	187
16367.915100	3	1/0	19	0.260	6.4	4	8	0.140	3.6	2.45	62.2	1528	2275	3815	5677	218
16367.915200	3	2/0	19	0.260	6.4	3	8	0.140	3.6	2.54	64.5	1866	2778	4290	6384	249
16367.915300	3	3/0	19	0.260	6.4	2	8	0.140	3.6	2.65	67.3	2290	3409	4875	7255	286
16367.915400	3	4/0	19	0.260	6.4	1	8	0.140	3.6	2.81	71.4	2825	4204	5665	8430	327
16367.916000	3	250	37	0.260	6.4	1/0	8	0.170	4.3	2.97	75.4	3339	4969	6495	9666	360
16367.916200	3	350	37	0.260	6.4	2/0	8	0.170	4.3	3.18	80.8	4326	6439	7970	11860	438
16367.916500	3	500	37	0.260	6.4	4/0	8	0.170	4.3	3.45	87.6	6411	9541	10300	15328	536

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.
*100% insulation level, grounded.

ANACONDA® BRAND

Certified Canadian Standard Association

MSHA Mine Safety and Health Administration

General Cable

Anaconda® Brand Type MP-GC, Mine Power Feeder w/Ground-Check, XLPE/PVC 8000 and 15000 Volts 90˚C, Three Conductor

Product Construction

Conductor:
- 2 AWG thru 4/0 AWG annealed compact bare copper, in accordance with ASTM B-8

Extruded Strand Shield (ESS):
- Extruded thermosetting semi-conducting stress control layer over the conductor

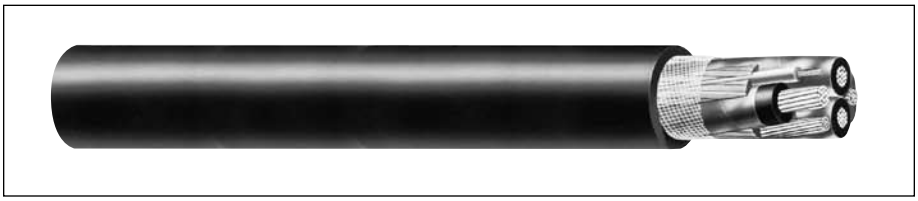
Insulation:
- Cross-Linked Polyethylene (XLPE) insulation

Extruded Insulation Shield (EIS):
- Extruded thermosetting semi-conducting layer, free stripping from insulation with a color-coded (black, white and red) marker strip placed under the copper tape

Insulation Shield:
- Overlapped annealed copper tape

Ground-Check Conductor:
- Annealed copper Class B strand, insulated with yellow compound

Grounding Conductors:
- Two bare annealed copper conductors, Class B strand



Jacket:
- Heavy-duty Polyvinyl Chloride (PVC)

Jacket Marking:
- GENERAL CABLE® ANACONDA® BRAND (SIZE)/3 TYPE MP-GC 90˚C (8000 VOLTS OR 15,000 VOLTS) CSA LR27161 P-102 MSHA

Options:
- Other jacket materials available upon request

Applications:
- Provides high-voltage distribution intended for permanent installations
- Designed for use:
  -In underground mining and bore holes
  -In aerial installations, ducts or direct burial

Features:
- Excellent moisture, oil, chemical and corona resistance
- High dielectric strength
- Electrical stability under stress
- Low dielectric loss
- Tough and reliable
- Highly resistant to tearing, punctures, abrasions and oils

Compliances:
- ICEA S75-381 Portable and Power Feeder Cables for use in mines and similar applications
- Meets flame test requirements and is accepted for listing by MSHA
- Meets CAN/CSA-22.2 No. 96.1 Mine Power Feeder Cables

Packaging:
- Material cut to length and shipped on non-returnable reels

2 AWG THRU 4/0 AWG CONDUCTORS, THREE CONDUCTOR, MINE POWER FEEDER W/GROUND-CHECK, TYPE MP-GC - 8000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
37017	3	2	7	0.115	2.92	6	8	0.110	2.8	1.58	40.13	827	1231	1774	2640	159
37019	3	2/0	19	0.115	2.92	3	8	0.140	3.6	1.88	47.75	1791	2665	2737	4073	243
37021	3	4/0	19	0.115	2.92	1	8	0.140	3.6	2.12	53.80	2613	3888	3815	5677	321

2 AWG THRU 4/0 AWG CONDUCTORS, THREE CONDUCTOR, MINE POWER FEEDER W/GROUND-CHECK, TYPE MP-GC - 15000 VOLTS

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INSULATION THICKNESS		GRD. COND. SIZE (AWG)	GRD-CHECK COND. SIZE (AWG)	NOMINAL JACKET THICKNESS		NOMINAL CABLE O.D.		COPPER WEIGHT		NET WEIGHT		AMPACITY
				INCHES	mm			INCHES	mm	INCHES	mm	LBS/ 1000 FT	kg/ km	LBS/ 1000 FT	kg/ km	
37032	3	2	7	0.175	4.46	6	8	0.140	3.6	1.95	49.50	938	1396	1972	2935	164
37035	3	2/0	19	0.175	4.46	3	8	0.140	3.6	2.13	54.10	1808	2691	3105	4621	246
37037	3	4/0	19	0.175	4.46	1	8	0.140	3.6	2.36	59.90	2688	4000	4150	6176	325

Stock items are available in long lengths for cutting to your specifications. All lengths are subject to a tolerance of +/-5%.
Dimensions and weights shown are nominal, subject to standard industry tolerances. Actual shipping weight may vary.
These ampacities are based on a conductor temperature of 90°C and an ambient air temperature of 40°C, per ICEA S-75-381, NEMA WC-58. For ampacities per National Electrical Code® requirements, refer to the latest NEC edition.

COLOR CODE CHART

NO. OF CONDUCTORS	COLOR
3	Black, White, Red

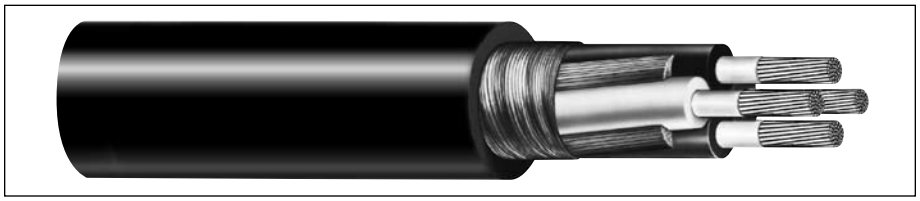
General Cable

MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

ANACONDA® BRAND

Carol® Brand Industrial-Grade Cables 2



Carol® Brand industrial-grade portable cables provide cost-effective yet dependable performance over the life of the cable for all power and control cable applications where the cables will not encounter a high degree of flexing and physical abuse.

For these low-flex, stationary and/or non-critical uses, Carol® Brand mining cables offer a viable, rugged, reliable option, along with significant cost savings. A heavy-duty-grade, single-layer, CV-cured thermoset jacket ensures performance exceeding requirements for standard applications including pumps, belt drives, battery packs and other general-purpose uses.

Our industrial-grade cables carry a full range of listings and certifications with Underwriters Laboratories, Inc. and the Canadian Standard Association. In addition, many products meet or exceed the requirements of MSHA and other relevant industry standards.

The advantage of General Cable's experience and expertise in mining cable technology continues to provide practical benefits over the entire life cycle of a particular cable in a specific application. Better design and construction, more advanced materials and process technology, and more reliable performance over a longer time result in lower cost per ton. Carol® Brand cables are engineered to complement the Anaconda® Brand product line.

Whatever the specific requirement, General Cable can provide the best performance, best fit, best cost solution for any application.

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Super Vu-Tron® Single Conductor

90°C (UL) Type W 2000 Volt and Type RHH/RHW 600 Volt Portable Power Cable

Product Construction:

Conductor:
- 8 AWG through 500 kcmil fully annealed stranded bare copper

Insulation:
- Premium-grade 90°C EPDM

Cable Reinforcement:
- An open polyester braid reinforcement is applied between the insulation and jacket for mechanical strength.

Jacket:
- Super Vu-Tron® 90°C, black
- Temperature range: -40°C to +90°C
- Voltage rating:
  600 volts Type RHH/RHW
  2000 volts Type W

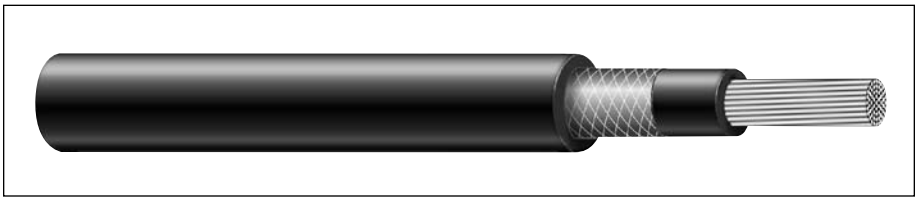
Jacket Marking:
- CAROL SUPER VU-TRON® TYPE W PORTABLE POWER CABLE (UL) DRY 90°C WET 75°C 2000V SUNLIGHT RESISTANT P-7K-123049-MSHA SIZE (mm^2) TYPE RHH OR RHW (UL) 600V FOR CT USE---CSA TYPE W (-40°C) FT-5 MADE IN USA

Applications:
- Portable power systems
- Entertainment industry activities such as theatre, television, night clubs, motion pictures, mobile communication vans, spotlights and sound systems
- Other similar applications that would require permanent or temporary power
- Permanent wiring of 600 volt power supplies, hoists, cranes and other applications where flexible power leads must be installed in conduit or raceways

Features:
- Water-resistant
- Sunlight-resistant
- Designed to withstand severe environmental conditions
- Withstands exposure to oil, acids, alkalies, heat, flame, moisture and chemicals
- Meets or exceeds flame test requirements of MSHA and UL

Industry Approvals:
- ICEA S-75-381 NEMA WC-58
- UL Type W
- UL Type RHH or RHW
- MSHA Approved
- RoHS Compliant

Packaging:
- Lengths cut to order



TYPE W 2000 VOLT (UL) AND TYPE RHH/RHW 600 VOLT (UL)

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL COND. O.D.		NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS		APPROX. NET WT. LBS/ M[1][S]
				INCHES	mm	INCHES	mm	INCHES	mm	(1)	(2)	
83008*	1	8	133	0.167	4.24	0.070	1.78	0.485	12.32	55	80	150
83006	1	6	259	0.210	5.33	0.070	1.78	0.565	14.35	75	105	214
83004	1	4	259	0.245	6.22	0.070	1.78	0.605	15.37	95	140	277
83002	1	2	259	0.334	8.48	0.070	1.78	0.680	17.27	130	190	387
83001	1	1	259	0.375	9.53	0.090	2.29	0.765	19.43	150	220	485
83010	1	1/0	259	0.385	9.78	0.090	2.29	0.810	20.57	170	260	563
83020	1	2/0	259	0.475	12.07	0.090	2.29	0.885	22.48	195	300	679
83030	1	3/0	259	0.480	12.19	0.090	2.29	0.930	23.62	225	350	809
83040	1	4/0	259	0.570	14.48	0.090	2.29	0.980	24.89	260	405	973
83250	1	250	627	0.615	15.62	0.105	2.67	1.045	26.54	290	455	1155
83350	1	350	855	0.725	18.42	0.105	2.67	1.145	29.08	350	570	1492
83500	1	500	1235	0.880	22.35	0.105	2.67	1.310	33.27	430	700	2048

* Non-stock item; minimum quantity purchase required.

[1] Ampacities based on 90°C conductor and 30°C ambient temperature based on Table 310-16 in the National Electrical Code® for RHH/RHW with not more than three current-carrying conductors in raceway, cable or earth.

[2] Ampacities based on 90°C conductor and 30°C ambient temperature based on Table 310-17 and Table 400.5(B) in the National Electrical Code® for single-conductor cables.

[S] Actual shipping weight may vary.

General Cable

RoHS Compliant Directive 2002/95/EC

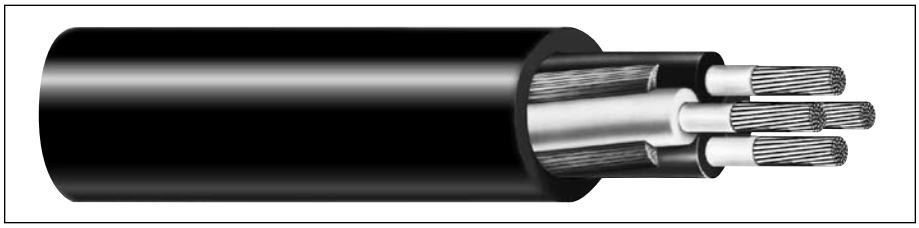
MSHA Mine Safety and Health Administration

UL LISTED

CAROL BRAND

Super Vu-Tron® Multi-Conductor Type W Round

90°C (UL) Type W 2000 Volt Portable Power Cable



CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL COND. O.D.		NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS(1)	APPROX. NET WT. LBS/M'(S)
				INCHES	mm	INCHES	mm	INCHES	mm		
2 CONDUCTOR – TYPE W – 2000 VOLT											
81312	2	8	133	0.167	4.24	0.060	1.52	0.770	19.56	74	334
81622	2	6	259	0.210	5.33	0.060	1.52	0.910	23.11	99	483
81642	2	4	259	0.245	6.22	0.060	1.52	1.020	25.91	130	664
81662	2	2	259	0.334	8.48	0.080	2.03	1.210	30.73	174	981
81372*	2	1	259	0.375	9.53	0.080	2.03	1.440	36.58	202	1490
81382*	2	1/0	259	0.385	9.78	0.080	2.03	1.435	36.45	234	1625
81392*	2	2/0	259	0.475	12.07	0.080	2.03	1.650	41.92	271	1880
81402*	2	3/0	259	0.530	13.46	0.080	2.03	1.770	44.96	313	2420
81412*	2	4/0	259	0.570	14.48	0.080	2.03	1.920	48.77	361	2940
3 CONDUCTOR – TYPE W – 2000 VOLT											
81313	3	8	133	0.167	4.24	0.060	1.52	0.925	23.50	74	490
81623	3	6	259	0.210	5.33	0.060	1.52	1.010	25.65	99	650
81643	3	4	259	0.245	6.22	0.060	1.52	1.095	27.81	130	835
81663	3	2	259	0.334	8.48	0.080	2.03	1.325	33.66	174	1233
81373*	3	1	259	0.375	9.53	0.080	2.03	1.500	38.10	202	1810
81383	3	1/0	259	0.385	9.78	0.080	2.03	1.610	40.89	234	2142
81393	3	2/0	259	0.475	12.07	0.080	2.03	1.720	43.69	271	2586
81403*	3	3/0	259	0.480	12.19	0.080	2.03	1.880	47.75	313	3381
81413*	3	4/0	259	0.570	14.48	0.080	2.03	1.935	49.15	361	3492
81423*	3	250	627	0.615	15.62	0.095	2.41	2.390	60.71	402	5070
81443*	3	350	855	0.725	18.42	0.095	2.41	2.680	68.07	495	6570
81473*	3	500	1235	0.880	22.35	0.095	2.41	3.030	76.96	613	8700
4 CONDUCTOR – TYPE W – 2000 VOLT											
81314	4	8	133	0.167	4.24	0.060	1.52	0.985	25.02	65	595
81624	4	6	259	0.210	5.33	0.060	1.52	1.085	27.56	87	783
81644	4	4	259	0.245	6.22	0.060	1.52	1.210	30.73	114	1072
81664	4	2	259	0.334	8.48	0.080	2.03	1.435	36.45	152	1592
81374	4	1	259	0.375	9.53	0.080	2.03	1.605	40.77	177	2051
81384	4	1/0	259	0.385	9.78	0.080	2.03	1.720	43.69	205	2742
81394	4	2/0	259	0.475	12.07	0.080	2.03	1.925	48.90	237	3228
81404	4	3/0	259	0.480	12.19	0.080	2.03	2.055	52.20	274	4048
81414	4	4/0	259	0.570	14.48	0.080	2.03	2.145	54.48	316	4603
5 CONDUCTOR – TYPE W – 2000 VOLT											
81315	5	8	133	0.167	4.24	0.060	1.52	1.050	26.67	52	675
81625	5	6	259	0.210	5.33	0.060	1.52	1.200	30.48	69	956
81645	5	4	259	0.245	6.22	0.060	1.52	1.360	34.54	91	1332
81665	5	2	259	0.334	8.48	0.080	2.03	1.600	40.64	121	2021
81375*	5	1	259	0.375	9.53	0.080	2.03	1.925	48.90	141	2923
81385	5	1/0	259	0.385	9.78	0.080	2.03	2.075	52.71	164	3142
81395*	5	2/0	259	0.475	12.07	0.080	2.03	2.160	54.86	189	4067
81405*	5	3/0	259	0.530	13.46	0.080	2.03	2.260	57.40	219	4900
81415*	5	4/0	259	0.570	14.48	0.080	2.03	2.460	62.48	252	5980

(1) Ampacities based on 90°C conductor and 30°C ambient temperature per Table 400.5(B) of the National Electrical Code®.
* Non-stock item; minimum quantity purchase required.
** Green conductor for grounding only.
(S) Actual shipping weight may vary.

Product Construction:

Conductor:
- 8 AWG through 500 kcmil fully annealed stranded bare copper

Insulation:
- Premium-grade, color-coded 90°C EPDM
- Color code: See chart below

Jacket:
- Super Vu-Tron® 90°C, black
- Temperature range: -40°C to +90°C

Jacket Marking:
- MULTI-CONDUCTOR TYPE W – CAROL SUPER VU-TRON® SIZE (mm^2) TYPE W PORTABLE POWER CABLE (UL) 2000V DRY 90°C WET 75°C SUN RES P-7K-123049 MSHA --- CSA TYPE W (-40°C) FT-5 MADE IN USA
- SIZES SMALLER THAN 2-1/4" – CAROL SUPER VU-TRON® (SIZE) TYPE W PORTABLE POWER CABLE (UL) 2000V DRY 90°C WET 75°C SUN RES CSA (-40°C) FT-5 P-7K-123049 MSHA
- SIZES 2-1/4" AND LARGER – (SIZE) TYPE W CAROL SUPER VU-TRON® 90°C DRY AND WATER RESISTANT 75°C 2000V SUN RES (UL) P-7K-123049 MSHA LR27161

Applications:
- Industrial and light- to medium-duty mining applications
- Heavy-duty service as power supply cable
- AC systems (grounded and ungrounded)
- Mobile and portable electrical equipment
- Motor and battery leads
- 2-conductor cables—use on DC or AC single-phase systems where grounding is not required
- 3-conductor cables—use on AC systems where no grounding is required, or on DC systems with one conductor for grounding
- 4-conductor cables—use on two- or three-phase AC systems with one conductor used for grounding
- 5-conductor cables—use in applications where separating the system neutral from the frame ground is required

Features:
- Withstands severe environmental conditions
- Indent-printed for easy identification
- Withstands exposure to oil, acid, alkalies, heat, moisture and most chemicals
- Rope lay stranding for maximum flex life
- Excellent impact resistance
- Cable core bound for superior flexibility and toughness
- Sunlight-resistant

Industry Approvals:
- CSA
- MSHA Approved
- UL Type W
- RoHS Compliant

Packaging:
- Lengths cut to order

COLOR CODE CHART

NO. OF CONDUCTORS	COLOR**
2	Black, White
3	Black, White, Green
4	Black, White, Red, Green
5	Black, White, Red, Green, Orange

CAROL BRAND® UL LISTED SP Certified Canadian Standard Association MSHA Mine Safety and Health Administration RoHS Compliant Directive 2002/95/EC General Cable

Super Vu-Tron® Type G and Type G-GC Round

90°C (UL) 2000 Volt Portable Power Cable

Product Construction:

Conductor:
- 8 AWG through 500 kcmil fully annealed stranded bare copper

Insulation:
- Premium-grade, color-coded 90°C EPDM
- Color code: See chart below
- Insulated grounds and ground checks

Jacket:
- Super Vu-Tron® 90°C, black
- Temperature range: -40°C to +90°C

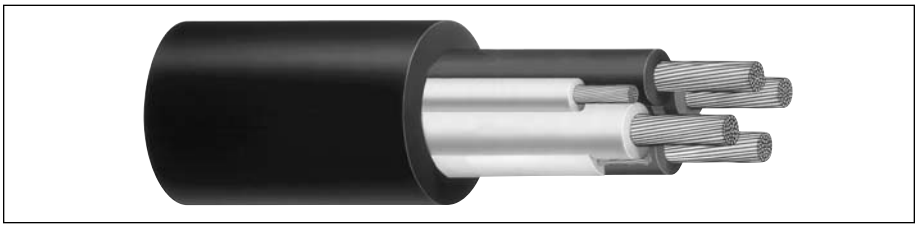
Jacket Marking:
- TYPE G-GC (4/0 AND SMALLER) – CAROL SUPER VU-TRON® SIZE (mm^2) TYPE G-GC PORTABLE POWER CABLE (UL) 2000V DRY 90°C WET 75°C SUN RES P-7K-123049 MSHA --- CSA TYPE G-GC (-40°C) FT-5 MADE IN USA
- CAROL SUPER VU-TRON (SIZE) TYPE G-GC PORTABLE POWER CABLE (UL) 2000 VOLTS 90°C DRY AND 75°C WET SUN RES CSA (-40°C) FT5 LR27161 P-7K-123049 MSHA MADE IN THE USA
- TYPE G – CAROL SUPER VU-TRON® SIZE (mm^2) TYPE G PORTABLE POWER CABLE (UL) 600/2000V DRY 90°C WET 75°C SUN RES P-7K-123049 MSHA --- CSA TYPE G (-40°C) FT-5 MADE IN USA

Applications:
- Industrial and light- to medium-duty mining applications
- Heavy-duty service as power supply cable
- Mobile and portable electrical equipment
- 3- and 4-conductor—use on three-phase AC systems where grounding is required

Features:
- Excellent impact and abrasionresistance
- Withstand exposure to oil, acids, alkalies, heat, moisture and most chemicals
- Indent-printed for easy identification
- Rope lay stranding for maximum flex life
- Cable core bound for superior flexibility and toughness
- Non-wicking rubber fillers (GGC)
- Canadian color code available upon request
- Sunlight-resistant

Industry Approvals:
- UL Type G, G-GC
- CSA
- MSHA Approved
- RoHS Compliant

Packaging:
- Lengths cut to order



3 CONDUCTOR – TYPE G-GC – 2000 VOLT

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL COND. O.D.		YELLOW GROUND CHECK AWG SIZE	GREEN GROUND COND. AWG SIZE	NOMINAL INS. THICKNESS		NOMINAL O.D.		CURR. AMPS[1]	APPROX. NET WT. LBS/ M'[S]
				INCHES	mm			INCHES	mm	INCHES	mm		
82313	3	8	133	0.167	4.24	10	2#10	0.060	1.52	0.965	24.51	65	609
82623	3	6	259	0.210	5.33	10	2#10	0.060	1.52	1.050	26.67	87	797
82643	3	4	259	0.245	6.22	10	2#8	0.060	1.52	1.145	29.08	114	984
82663	3	2	259	0.334	8.48	10	2#7	0.080	2.03	1.345	34.16	152	1465
82373[2]	3	1	259	0.375	9.53	8	2#6	0.080	2.03	1.465	37.21	177	1807
82383[2]	3	1/0	259	0.385	9.78	8	2#5	0.080	2.03	1.605	40.77	205	2405
82393[2]	3	2/0	259	0.475	12.07	8	2#4	0.080	2.03	1.715	43.56	237	2510
82403[2]	3	3/0	259	0.480	12.19	8	2#3	0.080	2.03	1.850	46.99	274	3773
82413[2]	3	4/0	259	0.570	14.48	8	2#2	0.080	2.03	1.980	50.29	316	3946
82423[2]*	3	250	627	0.615	15.62	8	2#2	0.095	2.41	2.390	60.71	352	6060
82443[2]*	3	350	855	0.725	18.42	8	2#1/0	0.095	2.41	2.680	68.07	433	7400
82473[2]*	3	500	1235	0.880	22.35	8	2#2/0	0.095	2.41	3.030	76.96	526	10100

4 CONDUCTOR – TYPE G – 600/2000 VOLT

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOMINAL COND. O.D.		GREEN COND. AWG SIZE	NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS[1]	APPROX. NET WT. LBS/ M'[S]
				INCHES	mm		INCHES	mm	INCHES	mm		
82314	4	8	133	0.167	4.24	4#12	0.060	1.52	1.045	26.54	52	705
82624	4	6	259	0.210	5.33	4#12	0.060	1.52	1.125	28.58	70	914
82644	4	4	259	0.245	6.22	4#10	0.060	1.52	1.210	30.73	91	1370
82664	4	2	259	0.334	8.48	4#9	0.080	2.03	1.435	36.45	122	1802
82374[2]*	4	1	259	0.375	9.53	4#8	0.080	2.03	1.650	41.91	142	2479
82384[2]	4	1/0	259	0.385	9.78	4#7	0.080	2.03	1.720	43.69	164	3080
82394[2]	4	2/0	259	0.475	12.07	4#6	0.080	2.03	1.860	47.24	190	3119
82404[2]	4	3/0	259	0.480	12.19	4#5	0.080	2.03	2.075	52.71	219	4542
82414[2]	4	4/0	259	0.570	14.48	4#4	0.080	2.03	2.155	54.74	253	5078

[1] Ampacities based on 90°C conductor and 30°C ambient temperature per table 400.5(B) of the National Electrical Code®.
[2] UL Listed and c(UL) Certified.
* Non-stock item; minimum quantity purchase required.
[S] Actual shipping weight may vary.

COLOR CODE CHART

NO. OF CONDUCTORS	COLOR
3	Black, White, Red
4	Black, White, Red, Orange

General Cable

RoHS Compliant Directive 2002/95/EC

MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

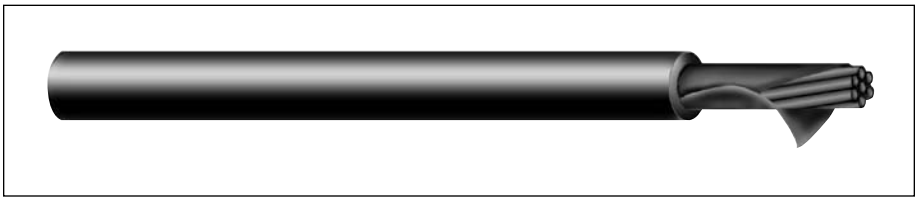
UL LISTED

CAROL BRAND

Carolprene® Welding Cable

90°C 600 Volt

RED NOW A STOCK ITEM



CAROLPRENE® WELDING CABLE – 600 VOLT – CLASS K – 30 AWG STRANDING

CATALOG NUMBER	COND. SIZE (AWG/kcmil)	CONDUCTOR STRAND	NOMINAL O.D.		APPROX. NET WT. LBS/M'(S)	STD. CTN.
			INCHES	mm		
01778	6	259/30	0.380	9.65	135	250'
01777	4	374/30	0.400	10.16	172	250'
01776	2	625/30	0.465	11.81	260	250'
01775	1	778/30	0.495	12.57	317	250'
01774	1/0	990/30	0.560	14.22	400	250'
01773	2/0	1248/30	0.615	15.62	487	250'
01772	3/0	1586/30	0.670	17.02	605	250'
01771	4/0	2054/30	0.750	19.05	827	250'
99142*	250	2496/30	0.830	21.08	976	250'
99432*	350	3432/30	0.960	24.38	1338	250'
99202*	500	5054/30	1.200	30.48	1995	250'

(S) Actual shipping weight may vary.
* Non-stock item, minimum quantity required.

Product Construction:

Conductor:

- 6 AWG through 500 kcmil fully annealed stranded bare copper Class K

Jacket:

- Premium-grade 90°C EPDM, red
- Temperature range: -40°C to +90°C

Jacket Marking:

- CAROLPRENE (SIZE) WELDING CABLE 600 VOLT MADE IN USA

Applications:

- Secondary voltage resistance welding leads
- Power supply applications not exceeding 600 volts AC

Features:

- Good flexibility
- Abrasion-resistant
- Good color retention

Packaging:

- 250' (76.2 m), 500' (152.4 m), and 1000' (304.8 m) reels
- MCM sizes cut to length
- Other put-ups available on special order

Industry Approvals:

- RoHS Compliant

WELDING CABLE AMPACITIES SINGLE CONDUCTOR

Required Cable Sizes: For Welding Cable Application

	length in feet for total circuit for secondary voltages only – do not use this table for 600 Volt in-line applications						
AMPS	100'	150'	200'	250'	300'	350'	400'
100	4	4	2	2	1	1/0	1/0
150	4	2	1	1/0	2/0	3/0	3/0
200	2	1	1/0	2/0	3/0	4/0	4/0
250	1	1/0	2/0	3/0	4/0		
300	1/0	2/0	3/0	4/0			
350	1/0	3/0	4/0				
400	2/0	3/0					
450	2/0	4/0					
500	3/0	4/0					
550	3/0	4/0					
600	4/0						

REQUIRED CABLE SIZES SHOWN IN AWG NUMBERS

The total circuit length includes both welding and ground leads (based on 4-volt drop) 60% duty cycle.

These values for current-carrying capacity are based on a copper temperature of 60°C (140°F), an ambient temperature of 40°C (104°F) and yield load factors from approximately 32% for the No. 2 AWG cable to approximately 23% for the No. 3/0 AWG cable, and higher for the smaller sizes. The sizes of cables generally used range from No. 2 AWG to No. 3/0 AWG. In actual service, the load factor may be much higher than indicated without overheating the cable, as the ambient temperature will generally be substantially lower than 40°C.

Suggested Ampacities:

For 600 Volt In-Line Applications

AWG/kcmil	AMPERES	AWG/kcmil	AMPERES
500	695	1/0	190
350	552	1	160
250	445	2	140
4/0	310	4	100
3/0	265	6	75
2/0	223		

Ampacities for portable cable, continuous-duty (ambient temperature of 40°C).
May not be suitable for all installations per National Electrical Code®.

Ordering Part Number Example

01771.38.03

4/0 500' put-up in red
.03 for red jacket

CAROL BRAND

RoHS Compliant Directive 2002/95/EC

General Cable

Super Vu-Tron® Welding Cable

90°C 600 Volt UL/CSA RHH/RHW

Product Construction:

Conductor:
- 6 AWG through 4/0 AWG fully annealed stranded bare copper per ASTM B-172 Class M

Jacket:
- Super Vu-Tron®, orange
- Temperature range: -50°C to +90°C

Jacket Marking:
- #6 - #1 AWG: CAROL SUPER VU-TRON® WELDING CABLE–EXTRA FLEXIBLE (UL) 600 VOLT (-50°C to +90°C) OIL RESISTANT P-123-141 MSHA (SIZE) CSA 90°C ARC WELDING CABLE FT-1
- 1/0 - 4/0 AWG: CAROL SUPER VU-TRON® WELDING CABLE (SIZE) EXTRA FLEXIBLE (UL) 600 VOLT (-50°C to +90°C) OIL RESISTANT P-123-141 MSHA CSA 90°C ARC WELDING CABLE FT-1 TYPE RHH OR RHW (UL) 600V FOR CT USE

Applications:
- Secondary voltage resistance welding leads
- Power supply applications not exceeding 600 volts AC
- Sizes 1/0 and larger for permanent wiring in conduit or tray of 600V power supplies, hoists, cranes or other applications where flexible power leads must be installed in conduit, raceways or trays

Features:
- UL Listed
- CSA Certified
- Excellent flexibility to last longer in flex applications
- Abrasion-resistant
- Resists oils and solvents
- Rated -50°C for use in cold environments
- Weather-resistant
- Ozone-resistant
- Safety-colored for high visibility
- Assured longer service life, saving money in replacement costs, maintenance cost and downtime
- MSHA approved for flame resistance
- Sunlight-resistant

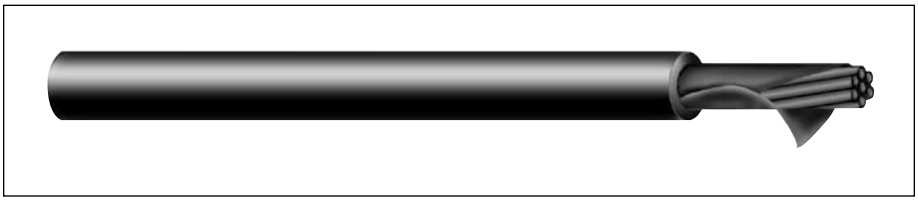
Industry Approvals:
- UL Listed
- CSA Certified
- MSHA Approved
- Meets UL Vertical Flame Test per UL 854
- RoHS Compliant

Packaging:
- 250' (76.2 m), 500' (152.4 m), and 1000' (304.8 m) reels
- Other put-ups available on special order

Suggested Ampacities:
For 600 Volt In-Line Applications

AWG	AMPERES	AWG	AMPERES
4/0	405	1	220
3/0	350	2	190
2/0	300	4	140
1/0	260	6	105

Per Standards: ICEA S-19-81 NEMA WC-3 Part 8, Appendix J Ampacities for portable cable in accordance with NEC Table 400.5(B).
May not be suitable for all installations per National Electrical Code®.



SUPER VU-TRON® WELDING CABLE—UL/CSA—CLASS M—34 AWG STRANDING

CATALOG NUMBER	COND. SIZE (AWG)	CONDUCTOR STRAND	NOMINAL O.D.		APPROX. NET WT. LBS/M'(S)	STD. CTN.
			INCHES	mm		
01768	6	660/34	0.370	9.40	125	250'
01767	4	1045/34	0.415	10.54	191	250'
01766	2	1666/34	0.475	12.07	259	250'
01765	1	2090/34	0.530	13.46	331	250'
01764†	1/0	2640/34	0.575	14.61	401	250'
01763†	2/0	3300/34	0.630	16.00	511	250'
01762†	3/0	4180/34	0.700	17.78	615	250'
01761†	4/0	5225/34	0.800	20.32	844	250'

(S) Actual shipping weight may vary.
† Type RHH/RHW - 600V for CT use.

WELDING CABLE AMPACITIES SINGLE CONDUCTOR

Required Cable Sizes: For Welding Cable Application

	length in feet for total circuit for secondary voltages only – do not use this table for 600 Volt in-line applications						
AMPS	**100'**	**150'**	**200'**	**250'**	**300'**	**350'**	**400'**
100	4	4	2	2	1	1/0	1/0
150	4	2	1	1/0	2/0	3/0	3/0
200	2	1	1/0	2/0	3/0	4/0	4/0
250	1	1/0	2/0	3/0	4/0		
300	1/0	2/0	3/0	4/0			
350	1/0	3/0	4/0				
400	2/0	3/0					
450	2/0	4/0					
500	3/0	4/0					
550	3/0	4/0					
600	4/0	**REQUIRED CABLE SIZES SHOWN IN AWG NUMBERS**					

The total circuit length includes both welding and ground leads (Based on 4-volt drop) 60% duty cycle.

These values for current-carrying capacity are based on a copper temperature of 60°C (140°F), an ambient temperature of 40°C (104°F) and yield load factors of from approximately 32% for the No. 2 AWG cable to approximately 23% for the No. 3/0 AWG cable, and higher for the smaller sizes. The sizes of cables generally used range from No. 2 AWG to No. 3/0 AWG. In actual service, the load factor may be much higher that indicated without overheating the cable as the ambient temperature will generally be substantially lower than 40°C.

General Cable

RoHS Compliant Directive 2002/95/EC

MSHA Mine Safety and Health Administration

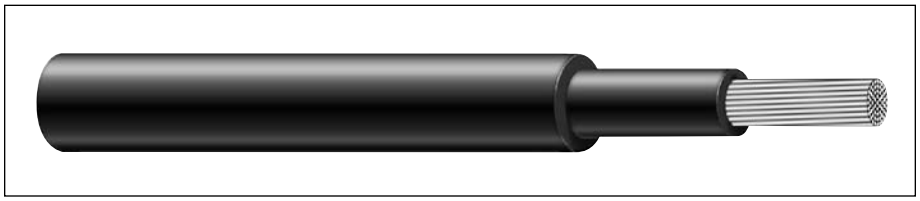
Certified Canadian Standard Association

UL LISTED

CAROL BRAND

Super Vu-Tron® EPR/CPE Diesel Locomotive Cable

90°C 2000 Volt DLO, UL RHH/RHW 600 Volts CSA R90 1000 Volt



14 AWG - 1111.1 kcmil DLO - 2000 VOLT

CATALOG NUMBER	COND. SIZE (AWG/ kcmil)	COND. STRAND	NOM. INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS		APPROX. NET WEIGHT LBS/MFT[S]
			INCHES	mm	INCHES	mm	(1)	(2)	
81914	14	19/0.0147	0.045	1.14	0.21	5.44	25	35	34
81912	12	19/0.0185	0.047	1.19	0.24	6.10	30	40	45
81910	10	27/24	0.045	1.14	0.26	6.60	40	55	60
81908	8	37/24	0.060	1.52	0.34	8.64	55	80	95
81906	6	61/24	0.060	1.52	0.40	10.16	75	105	145
81904	4	105/24	0.060	1.52	0.46	11.68	95	140	205
81902	2	154/24	0.060	1.52	0.52	13.21	130	190	295
81901	1	224/24	0.080	2.03	0.65	16.51	150	220	440
81911	1/0	280/24	0.080	2.03	0.69	17.53	170	260	515
81920	2/0	329/24	0.080	2.03	0.73	18.54	195	300	580
81930	3/0	456/24	0.080	2.03	0.81	20.57	225	350	770
81940	4/0	551/24	0.080	2.03	0.87	22.10	260	405	930
81926	262.6	650/24	0.095	2.41	1.00	25.40	296	467	1130
81931	313.3	777/24	0.095	2.41	1.06	26.92	326	522	1295
81937	373.7	925/24	0.095	2.41	1.10	27.94	362	591	1545
81944	444.4	1110/24	0.095	2.41	1.23	31.24	400	652	1820
81953	535.3	1332/24	0.120	3.05	1.34	34.04	445	728	2195
81964	646.4	1609/24	0.120	3.05	1.45	36.83	493	815	2560
81977	777.7	1924/24	0.120	3.05	1.50	38.10	546	904	3050
81929*	929.2	2299/24	0.120	3.05	1.67	42.42	602	1014	3625
81999	1111.1	2745/24	0.140	3.56	1.84	46.74	635	1115	4354

Dimensions and weights are nominal; subject to industry tolerances.

(1) Ampacities based on 90°C conductor and 30°C ambient temperature based on the National Electrical Code® for not more than three current-carrying conductors in raceway, cable or earth.

(2) Ampacities based on single-conductor in free air, 90°C conductor temperature and an ambient air temperature of 30°C, in accordance with National Electrical Code® (NEC).

(S) Actual shipping weight may vary.

* Non-stock item

Product Construction:

Conductor:

- 14 AWG through 1111.1 kcmil stranded tinned annealed copper per AAR 589

Insulation:

- Premium-grade 90°C EP

Jacket:

- Chlorinated Polyethylene (CPE), black

Jacket Marking:

- SIZES 14 THROUGH 1 AWG - CAROL SUPER VU-TRON® (SIZE) (STRANDING) 90°C DLO 2000 VOLTS P-7K-123040 MSHA CSA R90 1000V (UL) RHH OR RHW 600 VOLTS
- SIZES 1/0 THROUGH 646.4 - CAROL SUPER VU-TRON® (SIZE) 90°C DLO 2000 VOLTS P-7K-123040 MSHA CSA R90 1000V (-40°C) FT-1 (UL) RHH OR RHW 600 VOLTS SUNLIGHT RESISTANT FOR CT USE
  NOTE: 535.3 AND 646.4 kcmil PRINTED (UL) RHH OR RHW 2000 VOLTS
- SIZES 777.7 THROUGH 1111.1 kcmil - CAROL SUPER VU-TRON® C(UL) TYPE RHW-2 2KV VW-1 FOR CT USE TYPE DLO 2000V 90°C P-102 MSHA

Applications:

- Diesel electric locomotives
- Telecom power supply
- Mining and earth-moving equipment
- Shipyards
- Motor leads
- Where flexible power leads must be installed in conduit or raceways

Features:

- 90°C temperature rating
- Excellent impact and abrasion resistance
- Resists oils, acids, alkalies, heat, flame
- Flexible tinned copper stranding
- FT4 upon request
- Sunlight-resistant

Industry Approvals:

- UL Listed
- Accepted for listing as flame-resistant by MSHA
- CSA R90
- RoHS Compliant

Packaging:

- Lengths cut to order

CAROL BRAND UL LISTED c UL LISTED CSA Certified Canadian Standard Association MSHA Mine Safety and Health Administration RoHS Compliant Directive 2002/95/EC General Cable

Carol® Brand Rubber Cord Products 3

Thermoset rubber cord products have evolved during the last 50 years from simple and unsophisticated to a product line where specialized, technologically advanced products are in demand for exacting commercial and industrial applications.

No longer are rubber cord products used only in applications where flexibility is needed; today, typical applications require cord to perform well in environments of extreme heat and cold, and on job sites and factory floors where resistance to oil, chemicals and abrasion is mandatory.

General Cable's role as the producer of premier Carol® Brand rubber cord products is to ensure that new product development, product innovation and quality not only keep pace with industry requirements, but also set the trends.

Our rubber cord products carry a full range of listings and certifications with Underwriters Laboratories, Inc. and the Canadian Standard Association. In addition, many products meet or exceed the requirements of OSHA, MSHA and other relevant industry standards.

The Carol® Brand is simply the most accepted in the industry, having proven itself on the job time after time. Our rubber cord line is the most comprehensive in the industry, ensuring that the proper Carol® Brand product can always be specified.

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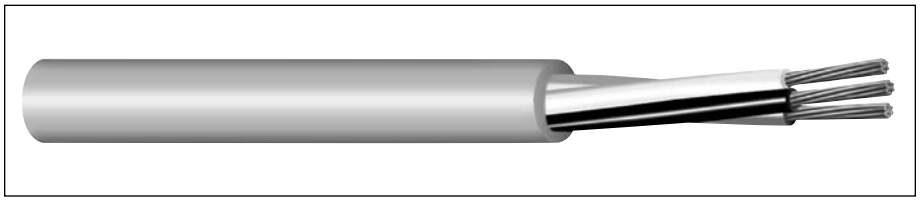
Super Vu-Tron® III Types SJOOW/SOOW

105°C 300 and 600 Volt UL/CSA Portable Cord



TYPE SJOOW – 300 VOLT – UL/CSA

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS†	APPROX. NET WT. LBS/M[1(S)]	STD. CTN.
				INCHES	mm	INCHES	mm			
02001*	2	18	41/34	0.030	0.76	0.310	8.00	10	56	1000'
02002*	3	18	41/34	0.030	0.76	0.320	8.12	10	65	1000'
02003*	4	18	41/34	0.030	0.76	0.345	8.76	7	80	250'
02004*	2	16	65/34	0.030	0.76	0.315	8.00	13	68	1000'
02005*	3	16	65/34	0.030	0.76	0.335	8.51	13	80	250'
02006*	4	16	65/34	0.030	0.76	0.370	9.40	10	95	250'
02007*	2	14	41/30	0.030	0.76	0.370	9.40	18	90	250'
02008*	3	14	41/30	0.030	0.76	0.375	9.52	18	110	250'
02009*	4	14	41/30	0.030	0.76	0.405	10.29	15	130	250'

TYPE SOOW – 600 VOLT – UL/CSA

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS†	APPROX. NET WT. LBS/M[1(S)]	STD. CTN.
				INCHES	mm	INCHES	mm			
02031*	2	18	41/34	0.030	0.76	0.365	9.27	10	75	250'
02032*	3	18	41/34	0.030	0.76	0.375	9.53	10	80	250'
02033*	4	18	41/34	0.030	0.76	0.400	10.16	7	110	250'
02034*	2	16	65/34	0.030	0.76	0.370	9.40	13	75	250'
02035*	3	16	65/34	0.030	0.76	0.395	10.80	13	100	250'
02036*	4	16	65/34	0.030	0.76	0.425	10.80	10	120	250'
02021*	5	16	65/34	0.030	0.76	0.515	13.08	8	150	250'
02037*	2	14	41/30	0.045	1.14	0.510	12.95	18	155	250'
02038*	3	14	41/30	0.045	1.14	0.525	13.34	18	165	250'
02039*	4	14	41/30	0.045	1.14	0.575	14.61	15	215	250'
02022*	5	14	41/30	0.045	1.14	0.675	17.15	12	285	250'
02041*	2	12	65/30	0.045	1.14	0.590	14.99	25	200	250'
02042*	3	12	65/30	0.045	1.14	0.600	15.24	25	250	250'
02043*	4	12	65/30	0.045	1.14	0.650	16.51	20	280	250'
02023*	5	12	65/30	0.045	1.14	0.730	18.54	16	315	250'
02045*	3	10	104/30	0.045	1.14	0.660	16.76	30	320	250'
02046*	4	10	104/30	0.045	1.14	0.710	18.03	25	375	250'
02024*	5	10	104/30	0.045	1.14	0.770	19.56	20	432	250'

* Non-stock item available by special order; minimum quantity purchase required.
† Green conductor for grounding only. Ampacities based on NEC table 400.5(A).
(S) Actual shipping weight may vary.

Product Construction:

Conductors:

- 18 through 10 AWG fully annealed stranded bare copper per ASTM B-174

Insulation:

- Premium-grade, color-coded, oil-resistant 105°C EPDM
- Color code: See chart below

Jacket:

- Super Vu-Tron® III, yellow
- Temperature range: –50°C to +105°C UL/CSA
- Voltage rating: 300 volts Type SJOOW 600 volts Type SOOW

Jacket Marking:

- CAROL SUPER VU-TRON® III (SIZE) (mm^2) 105°C (UL) WATER RESISTANT SJOOW (OR SOOW) CSA –50°C FT-1 P-123-103 MSHA (VOLTS) RoHS MADE IN USA

Applications:

- Machine tools
- Power tools
- Dockside power applications
- Motor leads
- Portable machinery
- Cranes
- Submersible pumps

Features:

- Excellent flexibility in cold temperatures
- Last longer in flex applications
- Integral Flexfill®
- Ozone- and weather-resistant
- UL Listed and CSA Certified for indoor and outdoor use
- Water-resistant, sunlight (UV)- resistant
- Safety-colored
- High heat and flame resistance
- Resistant to oils, acids and chemicals
- Excellent abrasion and cut resistance

Industry Approvals:

- UL Flexible Cord - UL Subject 62
- CSA Flexible Cord - C22.2-49
- MSHA Approved
- RoHS Compliant

Packaging:

- 250' (76.2 m), 500' (152.4 m), 1000' (304.8 m)
- Other put-ups available on special order

COLOR CODE CHART

NO. OF CONDUCTORS	COLOR
2	Black, White
3	Black, White, Green
4	Black, White, Red, Green
5	Black, White, Red, Orange, Green

CAROL BRAND · UL LISTED · CSA Certified Canadian Standard Association · MSHA Mine Safety and Health Administration · RoHS Compliant Directive 2002/95/EC · General Cable

Carolprene® Jacketed Type SOOW

90°C 600 Volt UL/CSA Portable Cord

Product Construction:

Conductors:

- 18 through 2 AWG fully annealed stranded bare copper per ASTM B-174

Insulation:

- Premium-grade, color-coded 90°C EPDM
- Color code: See chart below

Jacket:

- Carolprene®, black
- Temperature range: -40°C to +90°C

Jacket Marking:

- CAROL (SIZE) (mm²) 90°C (UL) WATER RESISTANT SOOW CSA (-40°C) FT-2 P-7K-123033 MSHA 600 VOLT RoHS MADE IN USA

Applications:

- Portable tools and equipment
- Portable appliances
- Small motors and associated machinery

Features:

- Excellent resistance to oil and moisture
- Good tensile strength, elongation and aging characteristics
- High flexibility
- Excellent abrasion resistance
- Water-resistant
- UL Listed and CSA Certified for indoor and outdoor use
- Sunlight-resistant

Industry Approvals:

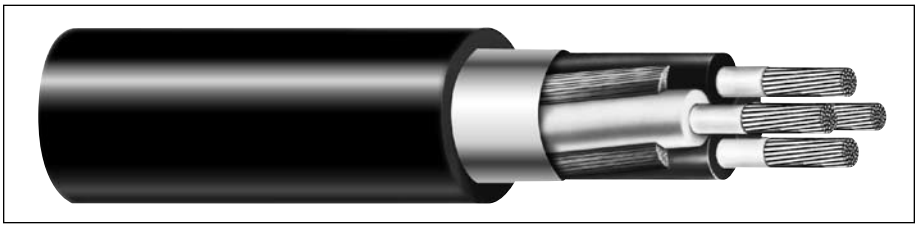
- UL Flexible Cord - Subject 62
- CSA Flexible Cord - C22.2-49
- MSHA Approved
- RoHS Compliant

Packaging:

- 250' (76.2 m), 500' (152.4 m), 1000' (304.8 m)
- Other put-ups available on special order

COLOR CODE CHART

NO. OF CONDUCTORS	COLOR
2	Black, White
3	Black, White, Green
4	Black, White, Red, Green
5	Black, White, Red, Orange, Green



TYPE SOOW – 600 VOLT – UL/CSA

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS†	APPROX. NET WT. LBS/M‡(S)	STD. CTN.
				INCHES	mm	INCHES	mm			
02763	2	18	16/30	0.030	0.76	0.345	8.76	10	72	250'
02769	3	18	16/30	0.030	0.76	0.365	9.27	10	84	250'
02770	4	18	16/30	0.030	0.76	0.390	9.91	7	101	250'
02722	2	16	26/30	0.030	0.76	0.370	9.40	13	83	250'
02765	3	16	26/30	0.030	0.76	0.390	9.91	13	103	250'
02766	4	16	26/30	0.030	0.76	0.420	10.67	10	119	250'
02723	2	14	41/30	0.045	1.14	0.510	12.95	18	158	250'
02762	3	14	41/30	0.045	1.14	0.535	13.59	18	172	250'
02768	4	14	41/30	0.045	1.14	0.575	14.61	15	208	250'
02724	2	12	65/30	0.045	1.14	0.570	14.48	25	195	250'
02725	3	12	65/30	0.045	1.14	0.595	15.11	25	229	250'
02726	4	12	65/30	0.045	1.14	0.650	16.51	20	280	250'
02767	2	10	104/30	0.045	1.14	0.620	15.75	30	235	250'
02728	3	10	104/30	0.045	1.14	0.660	16.76	30	295	250'
02727	4	10	104/30	0.045	1.14	0.715	18.16	25	353	250'
16063	3	8	133/29	0.060	1.52	0.845	21.46	40	525	250'
16064	4	8	133/29	0.060	1.52	0.960	24.38	35	676	250'
16065	5	8	133/29	0.060	1.52	1.075	27.31	28	795	250'
16073	3	6	133/27	0.060	1.52	0.980	24.89	55	703	250'
16074	4	6	133/27	0.060	1.52	1.080	27.43	45	891	250'
16075	5	6	133/27	0.060	1.52	1.200	30.48	36	1123	250'
16083	3	4	133/25	0.060	1.52	1.140	28.96	70	1022	250'
16084	4	4	133/25	0.060	1.52	1.260	32.00	60	1336	250'
16085	5	4	133/25	0.060	1.52	1.365	34.67	48	1587	250'
16093	3	2	133/23	0.060	1.52	1.330	33.78	95	1484	250'
16094	4	2	133/23	0.060	1.52	1.460	37.08	80	1869	250'
16095*	5	2	133/23	0.060	1.52	1.580	40.13	64	2240	250'

Cord furnished with UL and CSA labels.

* Non-stock item; minimum quantity purchase required.

† Green conductor for grounding only. Ampacities based on NEC table 400.5(A).

(S) Actual shipping weight may vary.

General Cable

RoHS Compliant Directive 2002/95/EC

MSHA Mine Safety and Health Administration

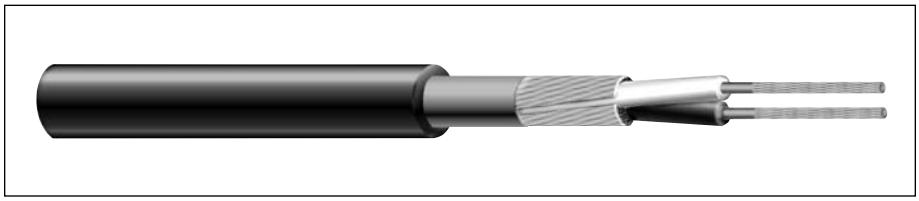
Certified Canadian Standard Association

UL LISTED

CAROL BRAND

Carolprene® Jacketed Type SJOOW

90°C 300 Volt UL/CSA Portable Cord



TYPE SJOOW – 300 VOLT – UL/CSA

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS†	APPROX. NET WT. LBS/M'(S)	STD. CTN.
				INCHES	mm	INCHES	mm			
01310	2	18	16/30	0.030	0.76	0.285	7.24	10	51	1000'
01311	3	18	16/30	0.030	0.76	0.305	7.75	10	63	1000'
01344	4	18	16/30	0.030	0.76	0.330	8.38	7	76	250'
01312	2	16	26/30	0.030	0.76	0.310	7.87	13	60	1000'
01342	3	16	26/30	0.030	0.76	0.330	8.38	13	76	250'
01343	4	16	26/30	0.030	0.76	0.365	9.27	10	95	250'
01358	2	14	41/30	0.030	0.76	0.340	8.64	18	79	250'
01360	3	14	41/30	0.030	0.76	0.370	9.40	18	106	250'
01364	4	14	41/30	0.030	0.76	0.410	10.41	15	121	250'
01379	2	12	65/30	0.030	0.76	0.410	10.41	25	117	250'
01380	3	12	65/30	0.030	0.76	0.430	10.92	25	146	250'
01381	4	12	65/30	0.030	0.76	0.475	12.07	20	185	250'
01382*	2	10	104/30	0.045	1.14	0.560	14.22	30	210	250'
01383	3	10	104/30	0.045	1.14	0.580	14.73	30	242	250'
01384	4	10	104/30	0.045	1.14	0.655	16.64	25	304	250'

Cord furnished with UL and CSA labels.
* Non-stock item; minimum quantity purchase required.
† Green conductor for grounding only. Ampacities based on NEC table 400.5(A).
(S) Actual shipping weight may vary.

Product Construction:

Conductors:
- 18 through 10 AWG fully annealed stranded bare copper per ASTM B-174

Insulation:
- Premium-grade, color-coded 90°C EPDM
- Color code: See chart below

Jacket:
- Carolprene®, black
- Temperature range: -40°C to +90°C

Jacket Marking:
- CAROL (SIZE) (mm²) 90°C (UL) WATER RESISTANT SJOOW CSA (-40°C) FT-2 P-7K-123033 MSHA 300 VOLT RoHS MADE IN USA

Applications:
- Portable tools and equipment
- Portable appliances
- Small motors and associated machinery

Features:
- Excellent resistance to oil and moisture
- Good tensile strength, elongation and aging characteristics
- High flexibility
- Excellent abrasion resistance
- Water-resistant
- UL Listed and CSA Certified for indoor and outdoor use
- Sunlight-resistant

Industry Approvals:
- UL Flexible Cord - UL Subject 62
- CSA Flexible Cord - C22.2-49
- MSHA Approved
- RoHS Compliant

Packaging:
- 250' (76.2 m), 500' (152.4 m), 1000' (304.8 m)
- Other put-ups available on special order

COLOR CODE CHART

NO. OF CONDUCTORS	COLOR
2	Black, White
3	Black, White, Green
4	Black, White, Red, General

CAROL BRAND

UL LISTED

CSA Certified Canadian Standard Association

MSHA Mine Safety and Health Administration

RoHS Compliant Directive 2002/95/EC

General Cable

Carolprene® Jacketed Type SOOW, Non-UL

90°C 600 Volt Portable Cord

Product Construction:

Conductors:
- 8 through 2 AWG fully annealed stranded bare copper per ASTM B-174

Insulation:
- Premium-grade, color-coded 90°C EPDM
- Color code: See chart below

Jacket:
- Carolprene®, black
- Temperature range: -40°C to +90°C

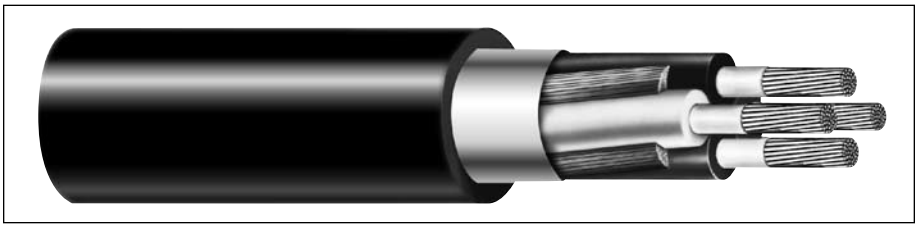
Jacket Marking:
- CAROL (SIZE) TYPE SOOW 90°C P-7K-123033 MSHA MADE IN USA NON-UL

Applications:
- Portable tools and equipment
- Temporary and portable power
- Motors and associated machinery

Features:
- Excellent resistance to oil and moisture
- Good tensile strength, elongation and aging characteristics
- High flexibility
- Excellent abrasion resistance
- Sunlight-resistant

Industry Approvals:
- MSHA Approved
- RoHS Compliant

Packaging:
- 250' (76.2 m), 500' (152.4 m), 1000' (304.8 m)
- Other put-ups available on special order



TYPE SOOW, NON-UL – 600 VOLT

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS†	APPROX. NET WT. LBS/M'(S)	STD. CTN.
				INCHES	mm	INCHES	mm			
01811*	2	8	65/26	0.050	1.27	0.660	16.76	40	283	250'
01812	3	8	65/26	0.050	1.27	0.695	17.65	40	340	250'
01827	4	8	65/26	0.050	1.27	0.760	19.30	35	491	250'
98267	5	8	65/26	0.050	1.27	0.840	21.34	28	550	250'
01825	3	6	101/26	0.050	1.27	0.790	20.07	55	531	250'
01824	4	6	101/26	0.050	1.27	0.865	21.97	45	660	250'
98270	5	6	101/26	0.050	1.27	0.945	24.00	36	759	250'
01823*	2	4	119/25	0.050	1.27	0.860	21.84	70	580	250'
01822	3	4	119/25	0.050	1.27	0.915	23.24	70	745	250'
01821	4	4	119/25	0.050	1.27	1.000	25.40	60	918	250'
98463	5	4	119/25	0.050	1.27	1.095	27.81	48	1030	250'
01819	3	2	133/.0211	0.055	1.40	1.085	27.56	95	1072	250'
01818	4	2	133/.0211	0.055	1.40	1.170	29.72	80	1344	250'
98187	5	2	133/.0211	0.055	1.40	1.390	35.31	64	1702	250'

* Non-stock item; minimum quantity purchase required.
† Green conductor for grounding only. Ampacities based on NEC table 400.5(A).
(S) Actual shipping weight may vary.

COLOR CODE CHART

NO. OF CONDUCTORS	COLOR
2	Black, White
3	Black, White, Green
4	Black, White, Red, Green
5	Black, White, Red, Orange, Green

General Cable

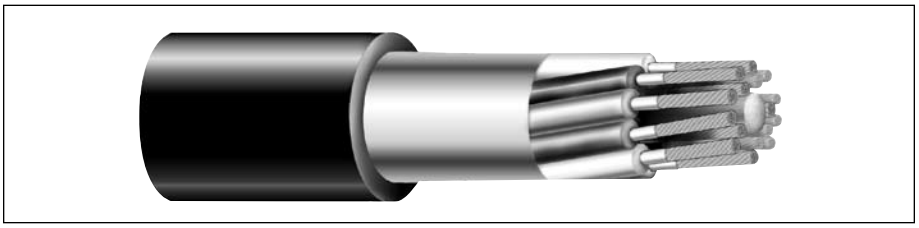
RoHS Compliant Directive 2002/95/EC

MSHA Mine Safety and Health Administration

CAROL® BRAND

Super Vu-Tron® Multi-Conductor Type SOOW

90°C 600 Volt UL/CSA Portable Cord



TYPE S00W – 600 VOLT – UL/CSA

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS†	APPROX. NET WT. LBS/M'(S)
				INCHES	mm	INCHES	mm		
09805	5	18	16/30	0.030	0.76	0.465	11.81	5.6	141
09806	6	18	16/30	0.030	0.76	0.495	12.57	5.6	152
09807	7	18	16/30	0.030	0.76	0.520	13.21	5.6	172
09808	8	18	16/30	0.030	0.76	0.530	13.46	4.9	177
09810	10	18	16/30	0.030	0.76	0.595	15.11	4.9	225
09812	12	18	16/30	0.030	0.76	0.600	15.24	3.5	240
09814	14	18	16/30	0.030	0.76	0.630	16.00	3.5	265
09816	16	18	16/30	0.030	0.76	0.700	17.78	3.5	310
09818*	18	18	16/30	0.030	0.76	0.760	19.30	3.5	345
09820	20	18	16/30	0.030	0.76	0.795	20.19	3.5	382
09822*	22	18	16/30	0.030	0.76	0.805	20.45	3.1	400
09824	24	18	16/30	0.030	0.76	0.850	21.59	3.1	451
09827*	27	18	16/30	0.030	0.76	0.865	21.97	3.1	475
09830*	30	18	16/30	0.030	0.76	0.915	23.24	3.1	533
09605	5	16	26/30	0.030	0.76	0.495	12.57	8.0	167
09606	6	16	26/30	0.030	0.76	0.520	13.21	8.0	182
09607	7	16	26/30	0.030	0.76	0.540	13.72	8.0	194
09608	8	16	26/30	0.030	0.76	0.575	14.61	7.0	218
09609	9	16	26/30	0.030	0.76	0.600	15.24	7.0	243
09610	10	16	26/30	0.030	0.76	0.620	15.75	5.0	255
09612	12	16	26/30	0.030	0.76	0.660	16.76	5.0	296
09614	14	16	26/30	0.030	0.76	0.730	18.54	5.0	352
09616	16	16	26/30	0.030	0.76	0.740	18.80	5.0	383
09618*	18	16	26/30	0.030	0.76	0.770	19.56	5.0	417
09620	20	16	26/30	0.030	0.76	0.810	20.57	5.0	457
09622*	22	16	26/30	0.030	0.76	0.900	22.86	4.5	510
09624	24	16	26/30	0.030	0.76	0.925	23.50	4.5	563
09626*	26	16	26/30	0.030	0.76	0.965	24.51	4.5	611
09630	30	16	26/30	0.030	0.76	1.010	25.65	4.5	767

† Values shown are for current-carrying conductors. A grounding conductor, or one which carries only the unbalance current from other conductors, is NOT counted in determining current carrying capacity. Ampacities based on NEC table 400.5(A).

* Non-stock item; minimum quantity purchase required.

(S) Actual shipping weight may vary.

COLOR CODE CHART

NO. OF COND.	COLOR	TRACER	NO. OF COND.	COLOR	TRACER	NO. OF COND.	COLOR	TRACER
1	Black	–	**8**	Red	Black	**15**	Blue	White
2	White	–	**9**	Green	Black	**16**	Black	Red
3	Red	–	**10**	Orange	Black	**17**	White	Red
4	Green	–	**11**	Blue	Black	**18**	Orange	Red
5	Orange	–	**12**	Black	White	**19**	Blue	Red
6	Blue	–	**13**	Red	White	**20**	Red	Green
7	White	Black	**14**	Green	White	**21**	Orange	Green

Note: Colors repeat after 21 conductors.

Product Construction:

Conductors:

- 18 and 16 AWG fully annealed stranded bare copper per ASTM B-174

Insulation:

- Premium-grade, color-coded 90°C EPDM
- Color code: See chart below

Jacket:

- Super Vu-Tron® 90°C, black
- Temperature range: -40°C to +90°C

Jacket Marking:

- CAROL SUPER VU-TRON (SIZE) (mm^2) 90°C (UL) WATER RESISTANT SOOW CSA (-40°C) FT-2 P-7K-123033 MSHA 600 VOLT RoHS MADE IN USA

Applications:

- Control circuits
- Tools
- Heavy industrial, processing and construction equipment

Features:

- Extra-flexible stranding
- Abrasion-resistant
- Resists oils and solvents
- Flame-resistant
- Ozone-resistant
- 90°C rated conductors and jacket
- Water-resistant
- UL Listed and CSA Certified for indoor and outdoor use
- Sunlight-resistant

Industry Approvals:

- UL Flexible Cord - UL Subject 62
- CSA Flexible Cord - C22.2-49
- MSHA Approved
- RoHS Compliant

Packaging:

- 5- through 8-conductor available on 250' (76.2 m), 500' (152.4 m), and 1000' (304.8 m) reels
- 9+ cond. available on long-length reels
- Other put-ups available on special order

CAROL BRAND

UL LISTED

CSA Certified Canadian Standard Association

MSHA Mine Safety and Health Administration

RoHS Compliant Directive 2002/95/EC

General Cable

Super Vu-Tron® Multi-Conductor Type SOOW

90°C 600 Volt UL/CSA Portable Cord

Product Construction:

Conductors:

- 14 through 10 AWG fully annealed stranded bare copper per ASTM B-174

Insulation:

- Premium-grade, color-coded 90°C EPDM
- Color code: See chart below

Jacket:

- Super Vu-Tron® 90°C, black
- Temperature range: -40°C to +90°C

Jacket Marking:

- CAROL SUPER VU-TRON (SIZE) (mm^2) 90°C (UL) WATER RESISTANT SOOW CSA (-40°C) FT-2 P-7K-123033 MSHA 600 VOLT RoHS MADE IN USA

Applications:

- Control circuits
- Tools
- Heavy industrial, processing and construction equipment

Features:

- Extra-flexible stranding
- Abrasion-resistant
- Resists oils and solvents
- Flame-resistant
- Ozone-resistant
- 90°C rated conductors and jacket
- Water-resistant
- UL Listed and CSA Certified for indoor and outdoor use
- Sunlight-resistant

Industry Approvals:

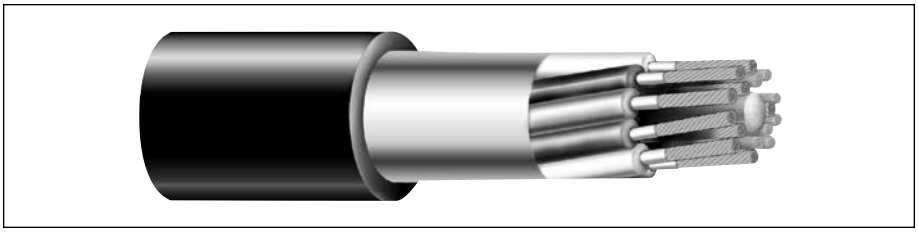
- UL Flexible Cord - UL Subject 62
- CSA Flexible Cord - C22.2-49
- MSHA Approved
- RoHS Compliant

Packaging:

- 5- through 8-conductor available on 250' (76.2 m), 500' (152.4 m), and 1000' (304.8 m) reels
- 9+ cond. available on long-length reels
- Other put-ups available on special order

COLOR CODE CHART

NO. OF COND.	COLOR	TRACER	NO. OF COND.	COLOR	TRACER
1	Black	–	12	Black	White
2	White	–	13	Red	White
3	Red	–	14	Green	White
4	Green	–	15	Blue	White
5	Orange	–	16	Black	Red
6	Blue	–	17	White	Red
7	White	Black	18	Orange	Red
8	Red	Black	19	Blue	Red
9	Green	Black	20	Red	Green
10	Orange	Black	21	Orange	Green
11	Blue	Black	Note: Colors repeat after 21 conductors.		



TYPE S00W – 600 VOLT – UL/CSA

CATALOG NUMBER	NO. OF COND.	COND. SIZE (AWG)	COND. STRAND	NOMINAL INS. THICKNESS		NOMINAL O.D.		CURRENT AMPS†	APPROX. NET WT. LBS/M[1](S)
				INCHES	mm	INCHES	mm		
09405	5	14	41/30	0.045	1.14	0.645	16.38	12.0	269
09406	6	14	41/30	0.045	1.14	0.710	18.03	12.0	317
09407	7	14	41/30	0.045	1.14	0.710	18.03	12.0	347
09408	8	14	41/30	0.045	1.14	0.760	19.30	10.5	430
09409*	9	14	41/30	0.045	1.14	0.830	21.08	10.5	417
09410	10	14	41/30	0.045	1.14	0.820	20.83	10.5	427
09412	12	14	41/30	0.045	1.14	0.855	21.72	7.5	493
09414	14	14	41/30	0.045	1.14	1.000	25.40	7.5	601
09416	16	14	41/30	0.045	1.14	1.030	26.16	7.5	678
09418*	18	14	41/30	0.045	1.14	1.100	27.94	7.5	720
09420	20	14	41/30	0.045	1.14	1.120	28.45	7.5	806
09424	24	14	41/30	0.045	1.14	1.260	32.00	6.7	1003
09428*	28	14	41/30	0.045	1.14	1.330	33.78	6.7	1080
09430*	30	14	41/30	0.045	1.14	1.335	33.91	6.0	1153
09205	5	12	65/30	0.045	1.14	0.715	18.16	16.0	333
09206	6	12	65/30	0.045	1.14	0.740	18.80	16.0	412
09207	7	12	65/30	0.045	1.14	0.790	20.07	16.0	465
09208	8	12	65/30	0.045	1.14	0.825	20.96	14.0	526
09209	9	12	65/30	0.045	1.14	0.900	22.86	14.0	517
09210	10	12	65/30	0.045	1.14	1.000	25.40	14.0	649
09212	12	12	65/30	0.045	1.14	1.010	25.65	10.0	669
09214	14	12	65/30	0.045	1.14	1.020	25.91	10.0	731
09216	16	12	65/30	0.045	1.14	1.135	28.83	10.0	933
09218*	18	12	65/30	0.045	1.14	1.175	29.85	10.0	920
09220	20	12	65/30	0.045	1.14	1.170	29.72	10.0	989
09224	24	12	65/30	0.045	1.14	1.435	36.45	9.0	1273
09226	26	12	65/30	0.045	1.14	1.380	35.05	9.0	1324
09227*	27	12	65/30	0.045	1.14	1.455	37.72	9.0	1325
09228*	28	12	65/30	0.045	1.14	1.500	38.10	9.0	1355
09230	30	12	65/30	0.045	1.14	1.455	36.96	9.0	1492
09005	5	10	104/30	0.045	1.14	0.770	19.56	20.0	472
09006	6	10	104/30	0.045	1.14	0.875	22.23	20.0	565
09007	7	10	104/30	0.045	1.14	0.900	22.86	20.0	552
09008*	8	10	104/30	0.045	1.14	0.935	23.75	17.5	682
09010	10	10	104/30	0.045	1.14	1.020	25.91	17.5	758
09012	12	10	104/30	0.045	1.14	1.070	27.18	12.5	871
09016*	16	10	104/30	0.045	1.14	1.230	31.24	12.5	1147
09020*	20	10	104/30	0.045	1.14	1.325	33.66	12.5	1445

† Values shown are for current-carrying conductors. A grounding conductor, or one which carries only the unbalance current from other conductors, is NOT counted in determining current carrying capacity. Ampacities based on NEC table 400.5(A).

* Non-stock item; minimum quantity purchase required.

(S) Actual shipping weight may vary.

General Cable

RoHS Compliant Directive 2002/95/EC

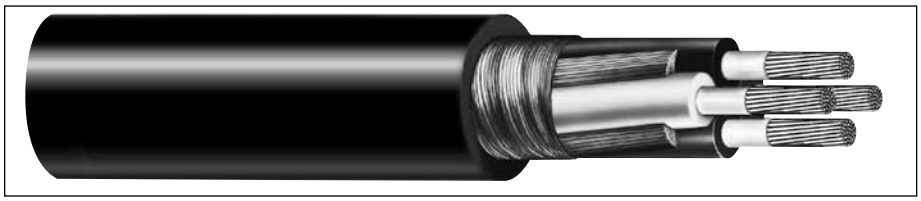
MSHA Mine Safety and Health Administration

Certified Canadian Standard Association

UL LISTED

CAROL BRAND

Technical Information 4



As mining cable applications have evolved, the process of specifying mining cables to meet these requirements has become more time consuming and complex.

Today's mine supervisors and engineers must be aware of not only the type of power distribution utilized but also the physical, environmental and electrical capabilities of each type of cable being specified. With this in mind, General Cable offers the most complete line of cables to serve the mining industry.

This technical section is presented to aid in the selection of the appropriate mining cable that best suits the application for which it is used.

For technical issues and questions, please contact your local General Cable distributor or our customer service department.

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Installation and Engineering Information

Proper Splices
While it is true that no splice is as good as a new cable, the use of quality materials and proven techniques can dramatically improve the service life of the cable splice. A well-made splice has the following characteristics:

1. High tensile strength — the splice cannot be easily pulled in two
2. Balanced conductors — equal tension on each conductor
3. Small outside diameter — the splice can be passed easily through existing cable guides
4. Low electrical resistance
5. Adequate insulation
6. High resistance to fatigue
7. A covering that is capable of keeping moisture from entering the cable interior

Shielding
Remember that an ungrounded shield is dangerous and should be treated as an energized conductor. The shield must be grounded at least at one end and preferably at two or more locations. It is recommended that shields be grounded at all cable terminations and splices. Stress cones should be installed at all high-voltage shield terminations.

Working Tension
The maximum working tension per conductor should not exceed 10 percent of the rated conductor strength. To determine the approximate tensile strength of the cable, multiply the total power conductor area (in^2) by 30,000 psi.

Bending Radius
The recommended Insulated Cable Engineers Association (ICEA) minimum bending radii are as follows:

- Braid-shielded portable cables — 8 times the cable diameter
- Non-shielded portable cables — 6 times the cable diameter
- Flat non-shielded cables — 6 times the minor dimension
- Copper tape-shielded cables — 12 times the cable diameter

AMPACITY CORRECTION FACTORS
APPROXIMATE FOR ALL CABLE VOLTAGES

Correction factors are listed below for various ambient temperatures.

AMBIENT TEMPERATURE	CORRECTION FACTORS FOR INSULATIONS RATED AT:
˚C	90˚C
10	1.26
20	1.18
30	1.10
40	1.00
50	0.90

When cables are used with one or more layers wound on a reel, the ampacities should be derated as follows:

NUMBER OF LAYERS	MULTIPLY AMPACITIES BY
1	0.85
2	0.65
3	0.45
4	0.35

VOLTAGE DROP
Approximate for all cable voltages—three conductor cables

90˚C			
60-CYCLE PHASE-TO-PHASE VOLTAGE DROP PER AMPERE PER 1,000 FT AT POWER FACTORS OF:			
CONDUCTOR SIZE (AWG or kcmil)	80%	90%	100%
6	0.82	0.90	0.95
4	0.54	0.58	0.60
2	0.35	0.38	0.38
1	0.29	0.31	0.30
1/0	0.24	0.25	0.24
2/0	0.20	0.20	0.19
3/0	0.16	0.17	0.15
4/0	0.14	0.14	0.12
250	0.12	0.12	0.10
300	0.11	0.11	0.08
350	0.10	0.09	0.07
400	0.09	0.08	0.06
500	0.08	0.07	0.05

Installation and Engineering Information & AWG-to-Metric Conversion Chart

AMPACITIES FOR PORTABLE POWER CABLES, AMPERES PER CONDUCTOR

POWER CONDUCTOR SIZE	SINGLE CONDUCTOR				TWO CONDUCTOR ROUND AND FLAT	THREE CONDUCTOR ROUND AND FLAT	THREE CONDUCTOR ROUND			FOUR CONDUCTOR	FIVE CONDUCTOR	SIX CONDUCTOR
AWG or kcmil	0-2000 VOLTS NONSHIELDED	2001-8000 VOLTS* SHIELDED	8001-15000 VOLTS* SHIELDED	15001-25000 VOLTS* SHIELDED	0-2000 VOLTS	0-5000 VOLTS NON-SHIELDED	0-8000 VOLTS SHIELDED	8001-15000 VOLTS SHIELDED	15001-25000 VOLTS SHIELDED	0-2000 VOLTS	0-2000 VOLTS	0-2000 VOLTS
8	83	-	-	-	72	59	-	-	-	54	50	48
6	109	112	-	-	95	79	93	-	-	72	68	64
4	145	148	-	-	127	104	122	-	-	93	88	83
3	167	171	-	-	145	120	140	-	-	106	100	95
2	192	195	195	-	167	138	159	164	178	122	116	110
1	223	225	225	222	191	161	184	187	191	143	136	129
1/0	258	260	259	255	217	186	211	215	218	165	-	-
2/0	298	299	298	293	250	215	243	246	249	192	-	-
3/0	345	345	343	337	286	249	279	283	286	221	-	-
4/0	400	400	397	389	328	287	321	325	327	255	-	-
250	445	444	440	430	363	320	355	359	360	280	-	-
300	500	496	491	480	400	357	398	-	-	310	-	-
350	552	549	543	529	436	394	435	-	-	335	-	-
400	600	596	590	572	470	430	470	-	-	356	-	-
450	650	640	633	615	497	460	503	-	-	377	-	-
500	695	688	678	659	524	487	536	-	-	395	-	-
550	737	732	-	-	-	-	-	-	-	-	-	-
600	780	779	-	-	-	-	-	-	-	-	-	-
650	820	817	-	-	-	-	-	-	-	-	-	-
700	855	845	-	-	-	-	-	-	-	-	-	-
750	898	889	-	-	-	-	-	-	-	-	-	-
800	925	925	-	-	-	-	-	-	-	-	-	-
900	1010	998	-	-	-	-	-	-	-	-	-	-
1000	1076	1061	-	-	-	-	-	-	-	-	-	-

*These ampacities are based on a single isolated cable in air, operated with an open-circuited shield.

NOTE – These ampacities are based on a conductor temperature of 90˚C and an ambient air temperature of 40˚C.

AWG-TO-METRIC CONVERSION CHART

SIZE (AWG)	mm^2	SIZE (AWG or kcmil)	mm^2
18	0.82	1/0	53.5
16	1.31	2/0	64.4
14	2.08	3/0	85.0
12	3.31	4/0	107.0
10	5.26	250	127.0
9	6.63	300	152.0
8	8.37	350	177.0
6	13.30	500	253.0
4	21.15	600	304.0
2	33.62	750	380.0
1	42.40	1000	507.0

Why and How Mining Cables Fail

Cable breakdowns are neither mysterious nor unaccountable and almost without exception can be traced to one or more of the following causes:

1. Excessive tension
2. Mechanical damage
3. Current overload
4. Improper splicing and termination techniques

Excessive Tension

Many cable failures are the direct result of excessive tension. A cable that has been “stretched” no longer has the balanced construction that is so vital to long life. Tension on the conductors subjects the individual wires in the strand to compression and shear. These thin wires are damaged and will break more easily when bent or flexed.

Tension also elongates the conductor insulation. The elongated insulation is then vulnerable to compression cutting. It will rupture more easily when it is crushed against the stranded conductor during runovers. The insulation will also have a tendency to creep over the conductor at a splice.

Jackets under tension lose a considerable part of their resistance to mechanical damage. A jacket under tension is much more likely to be cut or torn. Stretching also causes the copper conductors to take a permanent set. Of course, the insulation and jacket are stretched as well, but they will return to their original length when the tension is removed. This difference in the properties of rubber and copper when subjected to tension will cause the conductors to be wavy and fail prematurely.

To reduce tension on the cable:

1. Avoid backspooling, if possible.
2. If backspooling is unavoidable, locate the tie point as far back from the haulageway as possible.
3. Tram slowly when passing the tie point.
4. Set hydraulic tension on the cable reel so that approximately 12-15 feet of cable is picked up off the mine bottom when starting to tram.

Mechanical Damage

This is one of the most prevalent sources of trailing cable failures. Factors initiating mechanical damage include cutting, compression (crushing), punctures and abrasion. In extreme cases of mechanical damage, the failure is instant, and the cause can be assigned on the spot. Many times, however, the cable components are merely “injured” and become latent failures. At that point, it may be more difficult to pinpoint the exact cause and to take remedial action.

Why and How Mining Cables Fail

Current Overload

The temperatures of the conductors, insulation and jacket are, of course, elevated when cables are subjected to an electrical load. The resistance of the copper is increased, voltage drop in the cable is increased, and therefore, a reduced voltage is supplied to the machine. As a result, the machine calls for more current, which adds further to cable heating. A trailing cable's insulation and jacket materials exhibit maximum resistance to physical abuse at the rated conductor temperature of 90°C or less. The ability of these components to withstand damage decreases as the temperature increases. Conditions which normally cause few cable failures suddenly become a problem. At elevated temperatures, the jacket has lost much of its resistance to cutting, crushing, tearing and abrasion. The section of the cable that remains on the reel is most likely to be damaged by electrical overload. Layering on the reel hinders ventilation and heat dissipation. Continued exposure to elevated temperatures will age the jacket, making it hard and brittle and causing crazing or cracking upon subsequent reeling.

Improper Splicing and Termination Techniques

Over the years, much work has been done to improve both splicing materials and techniques.

The following items have been found to be primarily responsible for unsatisfactory splice service:

1. Ending up with a grounding or ground-check conductor which is shorter than the power conductors
2. Semi-conducting residue on the insulation surface was not removed
3. Gaps, voids or soft spots in insulating tape build-up
4. Improper termination of shielding system, leaving inward-pointing projections
5. Damage to factory insulation by improper removal of shielding systems
6. Excessive slack in one or more individual conductors
7. Splice has low tensile strength and is easily pulled in two
8. Individual wires are damaged during application of connector
9. Splice is too bulky — will not pass through cable guides or over sheaves
10. Improper application of the outer covering, allowing water to enter the cable interior

By choosing a cable with an adequate current rating, avoiding excessive tension and mechanical damage, and using proper splicing techniques, it is not unreasonable to reduce cable-related downtime by 50 percent or more. This will, of course, translate into increased production and profits.

Mining Cable Application Guide

APPLICATION	CAROL® BRAND INDUSTRIAL-GRADE CABLES	ANACONDA® BRAND MINING-GRADE CABLES
UNDERGROUND MINING APPLICATIONS		
Longwall Shearers		X
Shuttle Cars		X
Bridge Conveyors		X
High-Voltage Distribution		X
Cutting Machines		X
Loading Machines		X
Continuous Miners		X
Drills		X
Roof Bolters		X
Locomotives		X
Hydraulic Pumps		X
Sectionalized Portable Power		X
Borehole Cables		X
Pumps	X	X
Accessory Equipment	X	X
Two-Conductor Welding	X	X
Belt Drives	X	X
Hydraulic Power Packs	X	X
Belt Take-Ups	X	X
Battery Changers	X	X
Conveyor Feeder/Breakers	X	X
SURFACE MINING APPLICATIONS		
Drills		X
Stripping Shovels		X
Loading Shovels		X
Drag Lines		X
Pumps	X	X
Accessory Equipment	X	X

General Cable mining cables are manufactured in accordance with:

- ICEA S-75-381 Portable and Power Feeder Cables for Use in Mines and Similar Applications
- CAN/CSA-C22.2 No. 96 Portable Power Cables, and certified by Natural Resources Canada
- CAN/CSA-C22.2 No. 96.1 Mine Power Feeder Cables
- Mine Safety and Health Administration flame test requirements and accepted for listing by MSHA

Unit Conversion Factors

UNIT CONVERSION FACTORS

UNIT	X CONSTANT	= UNIT	UNIT	X CONSTANT	= UNIT
UNDERGROUND APPLICATIONS					
BTU	778.0	foot-pound (ft-lb)	gallons	3.785332	liters (l)
BTU	1054.8	joules	gallons	0.13368	cubic foot (ft^3)
BTU	0.293	watt-hours (w-hr)	gallons	231.0	cubic inch (in^3)
centimeters (cm)	0.032808	feet (ft)	gallons	3785.332	cubic centimeter (cm^3)
centimeters (cm)	0.3937	inches (in)	grams (g)	15.432	grains
centimeters (cm)	0.00001	kilometers (km)	gram/centimeter^3 (g/cm^3)	0.0361275	pounds/in^3 (lb/in^3)
centimeters (cm)	0.010	meters (m)	horsepower (hp)	33000.0	ft-lb/min
centimeters (cm)	10.0	millimeters (mm)	horsepower (hp)	550.0	ft-lb/sec
circular mils	0.00064516	circular millimeters	horsepower (hp)	745.7	watts (w)
circular mils	0.0000007854	inches^2 (in^2)	inch (in)	0.027178	yards (yd)
circular mils	0.00050671	square millimeters (mm^2)	inch (in)	0.083333	feet (ft)
circular mils	0.7854	mils^2	inch (in)	0.00002540	kilometer (km)
cubic centimeter (cm^3)	0.000035314	cubic foot (ft^3)	inch (in)	0.025400	meter (m)
cubic centimeter (cm^3)	0.061023	cubic inch (in^3)	inch (in)	2.54000514	centimeter (cm)
cubic centimeter (cm^3)	0.000001	cubic meter (m^3)	inch (in)	25.4000514	millimeter (mm)
cubic centimeter (cm^3)	0.0026417	gallons	inch (in)	1000.0	mils
cubic foot (ft^3)	1728.0	cubic inch (in^3)	joules	0.000948	BTU
cubic foot (ft^3)	28317.016	cubic centimeter (cm^3)	joules	10^7	ergs
cubic inch (in^3)	0.00057870	cubic feet (ft^3)	liters (l)	61.0250	cubic inch (in^3)
cubic inch (in^3)	0.000016387	cubic meter (m^3)	meters (m)	1.093611	yards (yd)
cubic inch (in^3)	16.387162	cubic centimeter (cm^3)	meters (m)	3.2808333	feet (ft)
cubic meter (m^3)	1000000.0	centimeter (cm)	meters (m)	39.37	inch (in)
cubic meter (m^3)	35.314456	cubic foot (ft^3)	meters (m)	100.0	centimeter (cm)
cubic meter (m^3)	264.17	gallons	miles	1760.0	yards (yd)
feet (ft)	0.00018939	miles	miles	5280.0	feet (ft)
feet (ft)	0.33333	yards (yd)	miles	1.6093	kilometer (km)
feet (ft)	12	inches (in)	millimeters (mm)	0.0032808	feet (ft)
feet (ft)	0.00030480	kilometers (km)	millimeters (mm)	0.03937	inch (in)
feet (ft)	0.30480	meters (m)	millimeters (mm)	0.001	meters (m)
feet (ft)	30.480	centimeters (cm)	millimeters (mm)	0.01	centimeters (cm)
feet (ft)	304.80	millimeters (mm)	millimeters (mm)	39.3701	mils
feet/pound (ft/lb)	0.00067197	meters/grams (m/g)	millimeters (mm)	1000.0	microns (u)
foot-pound (ft-lb)	0.001285	BTU	watts (w)	44.25	ft-lb/minute
foot-pound (ft-lb)	1.356	joules	watts (w)	0.737562	ft-lb/sec
foot-pound (ft-lb)	0.1383	kilogram/meter (kg/m)	watts (w)	0.001341	horsepower (hp)

Temperature Conversion Chart

To use this chart, find your known temperature (˚F or ˚C) in the shaded column. If the known temperature is in ˚C and you wish to know its value in ˚F, move to the adjacent right-hand column. If the known temperature is in ˚F and you wish to know its value in ˚C, move to the adjacent left-hand column.

Temperature Conversion Formulas	
°C =	$\frac{5}{9}$(°F - 32)
°F =	($\frac{9}{5}$ x °C) + 32

°C	KNOWN TEMP	°F	°C	KNOWN TEMP	°F	°C	KNOWN TEMP	°F	°C	KNOWN TEMP	°F	°C	KNOWN TEMP	°F
-45.0	**-49.0**	-56.2	-17.2	**1.0**	33.8	10.6	**51.0**	123.8	38.3	**101.0**	213.8	66.1	**151.0**	303.8
-44.4	**-48.0**	-54.4	-16.7	**2.0**	35.6	11.1	**52.0**	125.6	38.9	**102.0**	215.6	66.7	**152.0**	305.6
-43.9	**-47.0**	-52.6	-16.1	**3.0**	37.4	11.7	**53.0**	127.4	39.4	**103.0**	217.4	67.2	**153.0**	307.4
-43.3	**-46.0**	-50.8	-15.6	**4.0**	39.2	12.2	**54.0**	129.2	40.0	**104.0**	219.2	67.8	**154.0**	309.2
-42.8	**-45.0**	-49.0	-15.0	**5.0**	41.0	12.8	**55.0**	131.0	40.6	**105.0**	221.0	68.3	**155.0**	311.0
-42.2	**-44.0**	-47.2	-14.4	**6.0**	42.8	13.3	**56.0**	132.8	41.1	**106.0**	222.8	68.9	**156.0**	312.8
-41.7	**-43.0**	-45.4	-13.9	**7.0**	44.6	13.9	**57.0**	134.6	41.7	**107.0**	224.6	69.4	**157.0**	314.6
-41.1	**-42.0**	-43.6	-13.3	**8.0**	46.4	14.4	**58.0**	136.4	42.2	**108.0**	226.4	70.0	**158.0**	316.4
-40.6	**-41.0**	-41.8	-12.8	**9.0**	48.2	15.0	**59.0**	138.2	42.8	**109.0**	228.2	70.6	**159.0**	318.2
-40.0	**-40.0**	-40.0	-12.2	**10.0**	50.0	15.6	**60.0**	140.0	43.3	**110.0**	230.0	71.1	**160.0**	320.0
-39.4	**-39.0**	-38.2	-11.7	**11.0**	51.8	16.1	**61.0**	141.8	43.9	**111.0**	231.8	71.7	**161.0**	321.8
-38.9	**-38.0**	-36.4	-11.1	**12.0**	53.6	16.7	**62.0**	143.6	44.4	**112.0**	233.6	72.2	**162.0**	323.6
-38.3	**-37.0**	-34.6	-10.6	**13.0**	55.4	17.2	**63.0**	145.4	45.0	**113.0**	235.4	72.8	**163.0**	325.4
-37.8	**-36.0**	-32.8	-10.0	**14.0**	57.2	17.8	**64.0**	147.2	45.6	**114.0**	237.2	73.3	**164.0**	327.2
-37.2	**-35.0**	-31.0	-9.4	**15.0**	59.0	18.3	**65.0**	149.0	46.1	**115.0**	239.0	73.9	**165.0**	329.0
-36.7	**-34.0**	-29.2	-8.9	**16.0**	60.8	18.9	**66.0**	150.8	46.7	**116.0**	240.8	74.4	**166.0**	330.8
-36.1	**-33.0**	-27.4	-8.3	**17.0**	62.6	19.4	**67.0**	152.6	47.2	**117.0**	242.6	75.0	**167.0**	332.6
-35.6	**-32.0**	-25.6	-7.8	**18.0**	64.4	20.0	**68.0**	154.4	47.8	**118.0**	244.4	75.6	**168.0**	334.4
-35.0	**-31.0**	-23.8	-7.2	**19.0**	66.2	20.6	**69.0**	156.2	48.3	**119.0**	246.2	76.1	**169.0**	336.2
-34.4	**-30.0**	-22.0	-6.7	**20.0**	68.0	21.1	**70.0**	158.0	48.9	**120.0**	248.0	76.7	**170.0**	338.0
-33.9	**-29.0**	-20.2	-6.1	**21.0**	69.8	21.7	**71.0**	159.8	49.4	**121.0**	249.8	77.2	**171.0**	339.8
-33.3	**-28.0**	-18.4	-5.6	**22.0**	71.6	22.2	**72.0**	161.6	50.0	**122.0**	251.6	77.8	**172.0**	341.6
-32.8	**-27.0**	-16.6	-5.0	**23.0**	73.4	22.8	**73.0**	163.4	50.6	**123.0**	253.4	78.3	**173.0**	343.4
-32.2	**-26.0**	-14.8	-4.4	**24.0**	75.2	23.3	**74.0**	165.2	51.1	**124.0**	255.2	78.9	**174.0**	345.2
-31.7	**-25.0**	-13.0	-3.9	**25.0**	77.0	23.9	**75.0**	167.0	51.7	**125.0**	257.0	79.4	**175.0**	347.0
-31.1	**-24.0**	-11.2	-3.3	**26.0**	78.8	24.4	**76.0**	168.8	52.2	**126.0**	258.8	80.0	**176.0**	348.8
-30.6	**-23.0**	-9.4	-2.8	**27.0**	80.6	25.0	**77.0**	170.6	52.8	**127.0**	260.6	80.6	**177.0**	350.6
-30.0	**-22.0**	-7.6	-2.2	**28.0**	82.4	25.6	**78.0**	172.4	53.3	**128.0**	262.4	81.1	**178.0**	352.4
-29.4	**-21.0**	-5.8	-1.7	**29.0**	84.2	26.1	**79.0**	174.2	53.9	**129.0**	264.2	81.7	**179.0**	354.2
-28.9	**-20.0**	-4.0	-1.1	**30.0**	86.0	26.7	**80.0**	176.0	54.4	**130.0**	266.0	82.2	**180.0**	356.0
-28.3	**-19.0**	-2.2	-0.6	**31.0**	87.8	27.2	**81.0**	177.8	55.0	**131.0**	256.8	82.8	**181.0**	357.8
-27.8	**-18.0**	-0.4	0.0	**32.0**	89.6	27.8	**82.0**	179.6	55.6	**132.0**	269.6	83.3	**182.0**	359.6
-27.2	**-17.0**	1.4	0.6	**33.0**	91.4	28.3	**83.0**	181.4	56.1	**133.0**	271.4	83.9	**183.0**	361.4
-26.7	**-16.0**	3.2	1.1	**34.0**	93.2	28.9	**84.0**	183.2	56.7	**134.0**	273.2	84.4	**184.0**	363.2
-26.1	**-15.0**	5.0	1.7	**35.0**	95.0	29.4	**85.0**	185.0	57.2	**135.0**	275.0	85.0	**185.0**	365.0
-25.6	**-14.0**	6.8	2.2	**36.0**	96.8	30.0	**86.0**	186.8	57.8	**136.0**	276.8	85.6	**186.0**	366.8
-25.0	**-13.0**	8.6	2.8	**37.0**	98.6	30.6	**87.0**	188.6	58.3	**137.0**	278.6	86.1	**187.0**	368.6
-24.4	**-12.0**	10.4	3.3	**38.0**	100.4	31.1	**88.0**	190.4	58.9	**138.0**	280.4	86.7	**188.0**	370.4
-23.9	**-11.0**	12.2	3.9	**39.0**	102.2	31.7	**89.0**	192.2	59.4	**139.0**	282.2	87.2	**189.0**	372.2
-23.3	**-10.0**	14.0	4.4	**40.0**	104.0	32.2	**90.0**	194.0	60.0	**140.0**	284.0	87.8	**190.0**	374.0
-22.8	**-9.0**	15.8	5.0	**41.0**	105.8	32.8	**91.0**	195.8	60.6	**141.0**	285.8	88.3	**191.0**	375.8
-22.2	**-8.0**	17.6	5.6	**42.0**	107.6	33.3	**92.0**	197.6	61.1	**142.0**	287.6	88.9	**192.0**	377.6
-21.7	**-7.0**	19.4	6.1	**43.0**	109.4	33.9	**93.0**	199.4	61.7	**143.0**	289.4	89.4	**193.0**	379.4
-21.1	**-6.0**	21.2	6.7	**44.0**	111.2	34.4	**94.0**	201.2	62.2	**144.0**	291.2	90.0	**194.0**	381.2
-20.6	**-5.0**	23.0	7.2	**45.0**	113.0	35.0	**95.0**	203.0	62.8	**145.0**	293.0	90.6	**195.0**	383.0
-20.0	**-4.0**	24.8	7.8	**46.0**	114.8	35.6	**96.0**	204.8	63.3	**146.0**	294.8	91.1	**196.0**	384.8
-19.4	**-3.0**	26.6	8.3	**47.0**	116.6	36.1	**97.0**	206.6	63.9	**147.0**	296.6	91.7	**197.0**	386.6
-18.9	**-2.0**	28.4	8.9	**48.0**	118.4	36.7	**98.0**	208.4	64.4	**148.0**	289.4	92.2	**198.0**	388.4
-18.3	**-1.0**	30.2	9.4	**49.0**	120.2	37.2	**99.0**	210.2	65.0	**149.0**	300.2	92.8	**199.0**	390.2
-17.8	**0.0**	32.0	10.0	**50.0**	122.0	37.8	**100.0**	212.0	65.6	**150.0**	302.0	93.3	**200.0**	392.0

General Cable

Glossary

A.C.: Alternating Current (a.c.). Current in which the charge-flow periodically reverses and is represented by: $I = I_{\circ} \cos (2 f + \phi)$ where, I is the current, $I_{\circ}$ is the amplitude, f the frequency, ϕ the phase angle.

ANSI: Abbreviation for American National Standards Institute.

ASTM: Abbreviation for the American Society for Testing and Materials, a non-profit industry-wide organization which publishes standards, methods of test, recommended practices, definitions and other related material.

Abrasion Resistance: Ability of a wire, cable or material to resist surface wear.

Accelerated Aging: A test that attempts to duplicate long-time environmental aging in comparatively short time spans.

Accelerator: A chemical additive which hastens a chemical reaction under specific conditions.

Admittance: The measure of the ease with which an alternative current flows in a circuit. The reciprocal of impedance.

Aerial Cable: A cable suspended in the air on poles or other overhead structures.

Aging: The change in properties of a material with time under specific conditions.

Ambient Temperature: The temperature of a medium (gas or liquid) surrounding an object.

American Wire Gauge (AWG): The standard system used for designating wire diameter. The lower the AWG number, the larger the diameter. Also called the Brown and Sharpe (B&S) Wire Gauge.

Ampacity: The rms current which a cable, or other device, can carry within specified temperature limitations in a specified environment: dependant upon a) temperature rating, b) power loss and c) heat dissipation.

Ampere: The unit of current. One ampere is the current flowing through one ohm of resistance at one volt potential.

Anneal: Relief of mechanical stress through heat and gradual cooling. Annealing copper renders it less brittle.

Anti-Oxidant: A substance which prevents or slows down oxygen decomposition (oxidation) of material exposed to air.

Armored Cable: A cable provided with a wrapping of metal for mechanical protection.

B & S Gauge: See *American Wire Gauge (AWG)*.

Bend Radius: Radius of curvature that a fiber optic or metallic cable can bend without any adverse effects.

Binder: A spirally served tape or thread used for holding assembled cable components in place awaiting subsequent manufacturing operations.

Boot: (1) Protective covering over a cable wire or connector in addition to the normal jacketing or insulation. (2) A form placed around wire termination of a multiple-contact connector to contain the liquid potting compound before it hardens.

Braid: A fibrous or metallic group of filaments interwoven in cylindrical form to form a covering over one or more wires.

Braid Angle: The smaller of the two angles formed by the shielding strand and in the axis of the cable being shielded.

Braid Carrier: A spool or bobbin on a braid which holds one group of strands or filaments consisting of a specific number of ends. The carrier revolves during braiding operations.

Braid Ends: The number of strands used to make up one carrier. The strands are wound side by side on the carrier bobbin and lie parallel in the finished braid.

Braiding Machine: Machine used to apply braids to wire and cable and to produce braided sleeving and braids for tying or lacing purposes. Braiding machines are identified by the number of carriers.

Breakdown Voltage: The voltage at which the insulation between two conductors breaks down.

Building Wire: Wire used for light and power, 600 volts or less, usually not exposed to outdoor environment.

Bunched Stranding: A group of strands twisted together in a random manner and the same direction without regard to geometric arrangement of specific strands.

Buncher: A machine that twists wires together in random arrangement.

Buried Cable: A cable installed directly in the earth without use of underground conduit. See *Direct Burial Cable*.

Bus: Wire used to connect two terminals inside of an electrical unit.

Bushing: A mechanical device used as a lining for an opening to prevent abrasion to wire and cable.

Butt: Joining of two conductors end-to-end, with no overlap and with the axes in line.

Butt Splice: A splice wherein two wires from opposite ends butt against each other, or against a stop, in the center of a splice.

CSA: Abbreviation for Canadian Standards Association, a non-profit independent organization which operates a listing service for electrical and electronic materials and equipment. The Canadian counterpart of the Underwriters Laboratories.

CV: Abbreviation for Continuous Vulcanization.

Cable: A stranded conductor with or without insulation and other coverings (single-conductor cable) or a combination of conductors (multiple-conductor cable). In fiber optics, a jacketed fiber or jacketed bundle in a form which can be terminated.

Cable Clamp: A device used to give mechanical support to the wire bundle or cable at the rear of a plug or receptacle.

Cable Core: The portion of an insulated cable lying under a protective covering.

Cable Filler: The material used in multiple-conductor cables to occupy the interslices formed by the assembly of the insulated conductors, thus forming a cable core.

Cable Sheath: The protective covering applied to cables.

Cable Vulcanizer: Compression molding machine used to repair cable jacketing that has had a part removed for splicing, for adding connectors or other devices, or for replacing damaged sections.

Cabling: Twisting together two or more insulated conductors by machine to form a cable. In fiber optics, a method by which a group or bundle of fibers is mechanically assembled.

Capacitance: The ratio of the electrostatic charge on a conductor to the potential difference between the conductors required to maintain that charge.

Capacitance, Direct: The capacitance measured from one conductor to another conductor through a single insulating layer.

Glossary

Capacitance, Mutual: The capacitance between two conductors (typically of a pair) with all other conductors, including shield, short circuited to ground.

Carrier: The woven element of a braid consisting of one or more ends (strands) which creates the interlaced effect. Also, a spindle, spool, tube or bobbin (on a braiding machine) containing yarn or wire, employed as a braid.

Certificate of Compliance (C of C): A written statement, normally generated by a quality control department, which states that the product being shipped meets customer's specifications.

Certified Test Report (CTR): A report reflecting actual test data on the cable shipped. Tests are normally conducted by the quality control department and show that the product being shipped meets the required test specifications.

Characteristic Impedance: The impedance that when connected to the output terminals of a transmission line, of any length, makes the line appear indefinitely long.

Chlorinated Polyethylene (CPE): Rubbery polymer used for insulation and jacketing of wire and cable. Manufactured by Dow Chemical under the trade name Tyrin™.

Chlorosulfonated Polyethylene (CSPE): A rubbery polymer used for insulations and jackets. Manufactured by E.I. DuPont under the trade name of Hypalon®.

Cigarette Wrap: Tape insulation wrapped longitudinally instead of spirally over a conductor.

Circuit: A complete path over which electrons can flow from the negative terminals of a voltage source through parts and wires to the positive terminals of the same voltage source.

Circuit Sizes: A popular term for building wire sizes 14 through 10 AWG.

Circular Mil: The area of a circle one mil (.001") in diameter; 7.854 x 10^{7} sq. in. Used in expressing wire cross-sectional area.

Coaxial Cable: A cable consisting of two cylindrical conductors with a common axis, separated by a dielectric.

Color Code: A color system for wire or circuit identification by use of solid colors, tracers, braids, surface printing, etc.

Compact Conductor: Stranded conductor rolled to deform the round wires to fill the normal interstices between the wires in a strand.

Compound: An insulating or jacketing material made by mixing two or more ingredients.

Concentric Strand: A strand that consists of a central wire or core surrounded by one or more layers of spirally laid wires.

Concentric-Lay Cable: A concentric-lay conductor, or a multiple-conductor cable composed of a central core surrounded by one or more layers of helically laid insulated conductors.

Concentricity: The measurement of the location of the center of the conductor with respect to the geometric center of the circular insulation.

Conductance: The ability of a conductor to carry an electric charge. The ratio of the current flow to the potential difference causing the flow. The reciprocal of resistance.

Conductivity: The capacity of a material to carry electrical current, usually expressed as a percentage of copper conductivity (copper being one 100%).

Conductor: A wire (or combination of wires not insulated from one another) suitable for carrying electric current.

Conduit: A rigid or flexible metallic or nonmetallic raceway or circular cross-section through which cables can be pulled or housed.

Connector: A device used to provide rapid connect/disconnect service for electrical cable and wire terminations.

Continuity Check: A test to determine whether electrical current flows continuously throughout the length of a single wire or individual wires in a cable.

Continuous Vulcanization: Simultaneous extrusion and vulcanization of rubber-like wire coating materials.

Contrahelical: Cable spiraling in an opposite direction than the preceding layer within a wire or cable.

Control Cable: A multi-conductor cable made for operation in control of signal circuits.

Copolymer: A compound resulting from the polymerization of two different monomers.

Copper-Clad: Steel with a coating of copper welded to it before drawing as opposed to copper-plated. Synonymous with *Copperweld.*

Copperweld: The trade name of Flexo Wire Division (Copperweld Steel Corp.) for their copper-clad steel conductors.

Cord: A small, flexible insulated cable.

Cord Set: Portable cords fitted with a wiring device at one or both ends.

Core: In cables, a component or assembly of components over which other materials are applied, such as additional components, shield, sheath or armor. In fiber optics, the transparent glass or plastic section with a high refractive index through which the light travels by internal reflections.

Corona: A discharge due to ionization of air around a conductor due to a potential gradient exceeding a certain critical value.

Corona Resistance: The time that the insulation will withstand a specified level of field-intensified ionization that does not result in the immediate complete breakdown of the insulation.

Corrosion: The destruction of the surface of a metal by chemical reaction.

Coverage: The calculated percentage which defines the completeness with which a metal braid covers the underlying surface. The higher percentage of coverage, the greater the protection against external interference.

Covering: Textile braid or jacket of rubber, plastics or other materials applied over wire and cables to provide mechanical protection and identification.

Crazing: The minute cracks on the surface of plastic materials.

Creep: The dimensional change with time of a material under load.

Creepage: The conduction of electricity across the surface of a dielectric.

Creepage Path: The path across the surface of a dielectric between two conducting surfaces.

Creepage Surface: An insulating surface which provides physical separation as a form of insulation between two electrical conductors of different potential.

Crimp: Act of compressing a connector barrel around a cable in order to make an electrical connection.

Glossary

Crimp Termination: Connection in which a metal sleeve is secured to a conductor by mechanically crimping the sleeve with pliers, presses or automated crimping machines.

Cross-Linked: Inter-molecular bonds between long-chain thermoplastic polymers by chemical or electron bombardment means. The properties of the resulting thermosetting material are usually improved.

Crosstalk: Undesired electrical currents in conductors caused by electromagnetic or electrostatic coupling from other conductors or from external sources. Also, leakage of optical power from one optical conductor to another.

Cure: To change the physical properties of a material by chemical reaction.

Curing Cycle: The time, temperature and pressure required for curing.

Current: The rate of transfer of electricity. Practical unit is the ampere which represents the transfer of one coulomb per second. In a simple circuit, current *I* produced by a cell or electromotive force *E* when there is an external resistance *R* and internal resistance *r* is: $I = \frac{E}{R + r}$

Cut-Through Resistance: The ability of a material to withstand mechanical pressure, usually a sharp edge or small radius, without separation.

Cycle: The complete sequence including reversal of the flow of an alternating electric current.

D.C.: Direct Current (d.c.). An electric current which flows in only one direction.

Derating Factor: A factor used to reduce the current carrying capacity of a wire when used in environments other than that for which the value was established.

Dielectric: An insulating medium which interslices between two conductors and permits electrostatic attraction and repulsion to take place across it.

Dielectric Breakdown: The voltage required to cause an electrical failure or breakthrough of the insulation.

Dielectric Constant (K): The ratio of the capacitance of a condenser with dielectric between the electrodes to the capacitance when air is between the electrodes. Also called Permittivity and Specific Inductive Capacity.

Dielectric Loss: Power dissipated in an insulating medium as the result of the friction caused by molecular motion when an AC electric field is applied.

Dielectric Strength: The voltage which an insulation can withstand before breakdown occurs. Usually expressed as a voltage gradient (such as volts per mil).

Dielectric Test: A test in which a voltage higher than the rated voltage is applied for a specified time to determine the adequacy of the insulation under normal conditions.

Direct Burial Cable: A cable installed directly in the earth.

Direct Capacitance: The capacitance measured directly from conductor to conductor through a single insulating layer.

Direct Current (d.c.): An electric current which flows in only one direction.

Direct Current Resistance (DCR): The resistance offered by any circuit to the flow of direct current.

Direction of Lay: The lateral direction in which the strands of a conductor run over the top of the cable conductor as they recede from an observer looking along the axis of the conductor or cable. Also applies to twisted cable.

Disruptive Discharge: A sudden, large increase in current through an insulation medium due to the complete failure of the medium under the electrostatic stress.

Drain Wire: In a cable, the uninsulated wire laid over the component or components and used as a ground connection.

Drawing: In wire manufacture, pulling the metal through a die or series of dies to reduce diameter to a specified size.

Duct: (1) A single enclosed raceway for wires or cables. See also *Conduit, Raceway*. (2) a single enclosed raceway for wires or cables usually used in soil or concrete. (3) an enclosure in which air is moved. Generally part of the HVAC system of a building.

Durometer: A measure of hardness.

E: Symbol for voltage. Usually used to represent direct voltage or the effective (root-mean-square) value of an alternating voltage.

EPDM: Ethylene-propylene-diene monomer rubber.

EPR: Ethylene-propylene rubber.

Eccetricity: Like concentricity, a measure of the center of a conductor's location with respect to the circular cross-section of the insulation. Expressed as a percentage of displacement of one circle within the other.

Elastomer: A rubber or rubber-like material which will stretch repeatedly to 200 percent or more and return rapidly and with force to its approximate original shape.

Electro-Tinned: Electrolytic process of tinning wire using pure tin.

Electrode: A conductor through which a current enters or leaves a nonmetallic conductor.

Electromagnetic Field: A rapidly moving electric field and its associated moving magnetic field.

Electromotive Force (e.m.f.): Pressure or voltage. The force which causes current to flow in a circuit.

Electronic Wire and Cable: A length of conductive or semi-conductive material used in an electronic application.

Elongation: The fractional increase in the length of a material stressed in tension.

Embossing: A marker identification by means of thermal indentation leaving raised lettering on the sheath material of cable.

Emergency Overload: Load which occurs when larger-than-normal currents are carried through a cable or wire over a certain period of time.

Ends: In braiding, the number of essentially parallel wires of threads on a carrier.

Energize: To apply rated voltage to a circuit or device in order to activate it.

Equilay: More than one layer of helically laid wires with the direction of lay reversed for successive layers, but with the length of lay the same for each layer.

External Wiring: Electronic wiring which interconnects subsystems within the system.

Extrusion: Method of continuously forcing plastic, rubber or elastomer material through an orifice to apply insulation or jacketing over a conductor or cable core.

FR-1: A flammability rating established by Underwriters Laboratories for wires and cables that pass a specially designed vertical flame test.

Farad: A unit of electrical capacity.

Fatigue Resistance: Resistance to metal crystallization which leads to conductors or wires breaking from flexing.

Glossary

Fiber: A thread or threadlike structure. Also, a single discrete element used to transmit optical (light wave) information.

Fiber Optics: A lightwave or optical communications system in which electrical information is converted to light energy, transmitted to another location through optical fibers, and is there converted back into electrical information.

Field: An area of influence around a magnet or electric charge.

Filler: (1) A material used in multi-conductor cables to occupy large interstices formed by the assembled conductors. (2) An inert substance added to a compound to improve properties or decrease cost.

Flame Resistance: The ability of a material not to propagate flame once the heat source is removed.

Flammability: The measure of the material's ability to support combustion.

Flashover: A disruptive discharge around or over the surface of a solid or liquid insulator.

Flat Cable: A cable with two smooth or corrugated but essentially flat surfaces.

Flat Conductor: A wire having a rectangular cross-section as opposed to a round or square conductor.

Flex Life: The measurement of the ability of a conductor or cable to withstand repeated bending.

Flexibility: The ease with which a cable may be bent.

Flexible: That quality of a cable or cable component which allows for bending under the influence of outside force, as opposed to limpness, which is bending due to the cable's own weight.

Floating: Referring to a circuit which has no connection to ground.

Flux: (1) The lines of force which make up an electrostatic field. (2) The rate of flow of energy across or through a surface. (3) A substance used to promote or facilitate fusion.

Foil: A thin, continuous sheet of metal.

Galvanometer: An instrument for detecting or measuring small electrical current.

Gauge: A term used to denote the physical size of a wire.

Ground: A conducting connection to earth: this is the normal reference for voltage measurements.

Grounded: Connected to earth.

Grounding Conductor: A conductor connected to earth designed to conduct only in abnormal conditions.

Ground Check Conductor: A pilot wire in cables to monitor the grounding circuit.

Ground Potential: Zero potential with respect to the ground or earth.

Hard Drawn Copper Wire: Copper wire that has not been annealed after drawing.

Heat Distortion: Distortion of flow of a material or configuration due to the application of heat.

Helix: Spiral winding.

Henry: The unit of inductance.

Hertz (Hz): A term replacing cycles-per-second as a unit of frequency.

Hi-Pot: A test designed to determine the highest voltage that can be applied to a conductor without breaking through the insulation.

High-Voltage: Generally, a wire or cable with an operating voltage of over 660 volts.

Hot Tin Dip: A process of passing bare wire through a bath of molten tin to provide a coating.

Hybrid Cable: An assembly of two or more cables (of the same of different types or categories) covered by one overall sheath.

Hygroscopic: Capable of absorbing moisture from the air.

Hypalon®: DuPont's trade name for their chlorosulfonated polyethylene, an ozone-resistant synthetic rubber.

ICEA: Abbreviation for Insulated Cable Engineers Association.

IEEE: Abbreviation for Institute of Electrical and Electronics Engineers.

Impedance: The total opposition that a circuit offers to the flow of alternating current or any other varying current at a particular frequency. It is a combination of resistance *R* and reactance *X*, measured in ohms.

Impulse Strength: The voltage breakdown of insulation under voltage surges on the order of microseconds in duration.

Inductance: The property of a circuit or circuit element that opposes a change in current flow, thus causing current changes to lag behind voltage changes. It is measured in *henrys*.

Insulated Wire: A conductor of electricity covered with a non-conducting material.

Insulation: A material having high resistance to the flow of electric current. Often called a dielectric in radio frequency cable.

Insulation Resistance: The ratio of the applied voltage to the total current between two electrodes in contact with a specific insulation, usually expressed in megohms-M feet.

Integral Belt: A layer of insulation or semi-conductive material applied by extrusion over two or more insulated, twisted or parallel conductors to form a round smooth diameter.

Internal Wiring: Electronic wiring which interconnects components, usually within a sealed subsystem.

Interstices: Voids or valleys between individual strands in a conductor or between insulated conductors in a multi-conductor cable.

Ionization Voltage (Corona Level): The minimum value of falling rms voltage which sustains electrical discharge within the vacuous or gas-filled spaces in the cable construction or insulation.

Irradiation: In insulations, the exposure of the material to high energy emissions for the purpose of favorably altering the molecular structure.

Jacket: A non-metallic polymeric close-fitting protective covering over cable insulation: the cable may have one or more conductors.

Jumper: A short length of conductor used to make a temporary connection between terminals, around a break in a circuit or around an instrument.

Junction: A point in a circuit where two or more wires are connected.

kcmil: One thousand circular mils.

KV: Kilovolt (1000 volts).

KVA: Kilovolt ampere.

KW: Kilowatt.

Kilo: A numerical prefix denoting 1,000 (10^3).

Laminated Tape: A tape consisting of two or more layers of different materials bonded together.

Lay: The length measured along the axis of a wire or cable required for a single strand (in stranded wire) or conductor (in cable) to make one complete turn about the axis of the conductor or cable.

Glossary

Lead: A wire, with or without terminals, that connects two points in a circuit.

Lead Cured: A cable that is cured or vulcanized in a metallic lead mold.

Leakage Current: The undesirable flow of current through or over the surface of an insulation.

Life Cycle: A test to determine the length of time before failure in a controlled, usually accelerated, environment.

Line Drop: A voltage loss occurring between any two points in a transmission line due to the resonance reactance or leakage of the line.

Line Loss: The total of the various energy losses occurring in a transmission line.

Line Voltage: Voltage existing in a cable or circuit.

Longitudinal Shield: A tape shield, flat or corrugated, applied longitudinally with the axis of the core being shielded.

Longitudinal Wrap: Tape applied longitudinally with the axis of the core being covered.

Loss: Energy dissipated without accomplishing useful work.

Loss Factor: The product of the dissipation and dielectric constant of an insulating material.

Lug: Termination, usually crimped or soldered to the conductor, with provision for screwing on to the terminal.

MCM: One thousand circular mils.

MHz: Megahertz.

MTW: Thermoplastic-insulated machine tool wire.

Magnet Wire: Insulated wire intended for use in windings on motor, transformer and other coils for electromagnetic devices.

Magnetic Field: The region within which a body or current experiences magnetic force.

Magnetic Flux: The rate of flow of magnetic energy across or through a surface (real or imaginary).

Marker Tape: A tape laid parallel to the conductors under the sheath in a cable, imprinted with the manufacturer's name and the specification to which the cable is made.

Meg or Mega: A numerical prefix denoting 1,000,000 (10^6).

Messenger: Supporting member, usually a high-strength steel wire, used to suspend aerial cable. The messenger may be an integral part of the cable, or exterior to it (lashed messenger).

MFT: A popular abbreviation for 1,000 ft.

Mho: The unit of conductivity. The reciprocal of an ohm.

Micro: A numerical prefix denoting one-millionth (10^{-6}).

Microfarad: One-millionth of a farad, commonly abbreviated μF.

Mil: A unit used in measuring diameter of a wire or thickness of insulation over a conductor. One-one thousandth of an inch (.001").

Mineral Insulated: Cable and thermocouple wire consisting of one or more conductors surrounded by magnesium oxide insulation and enclosed in a liquid-and-gas-tight metallic sheathing.

Miniature Wire: Insulated conductors of approximately 20-34 AWG.

Mining Cable: A flame-retardant cable specially constructed to withstand severe physical abuse for use in mines or tunnels.

Modulus of Elasticity: The ratio of stress to strain in an elastic material.

Moisture Absorption: The amount of moisture, in percentage, that a material will absorb under specified conditions.

Moisture Resistance: The ability of a material to resist absorbing moisture from the air or when immersed in water.

Molded Plug: A connector molded on either end of a cord or cable.

Monomer: The basic chemical unit used in building a polymer.

Motor Lead Wire: Wire which connects to the fragile magnet wire found in coils, transformers and stator or field windings.

Multi-Conductor: More than one conductor within a single cable complex.

Mutual Capacitance: Capacitance between two conductors when all other conductors including ground are connected together to shield and ground.

Mylar®: DuPont trademark for polyester film.

NEMA: Abbreviation for National Electrical Manufacturers Association.

NFPA: Abbreviation for National Fire Protection Association. Administrative Sponsor of the National Electrical Code® (ANSI Standards Committee CI).

National Electrical Code®: A set of regulations governing construction and installation of electrical wiring and apparatus in the United States, established by the American National Board of Fire Underwriters.

Neoprene: A synthetic rubber with good resistance to oil, chemical and flame. Also called polychloroprene.

OSHA: Abbreviation for Occupational Safety and Health Act. Specifically the Williams-Steiger law passed in 1970 covering all factors relating to safety in places of employment.

OVE: Approval agency of West Germany; Oesterreichischer Verband fur Elektrotechnik.

Off Center: Conductor displaced within the cross-section of its insulation.

Offgassing: Percentage of a specified gas released during the combustion of insulation or jacketing material.

Ohm: A unit of electrical resistance.

Oil Aging: Cable aged in an accelerated manner by placement in an oil bath and heated to a pre-set temperature for a stated time.

Overall Diameter: Finished diameter over wire or cable.

Overlap: The amount the trailing edge laps over the leading edge of a spiral tape wrap.

Oxygen Index: Percentage of oxygen necessary to support combustion in a gas mixture.

Ozone: Reactive form of oxygen, typically found around electrical discharges and present in the atmosphere in small quantities.

Pair: Two insulated wires of a single circuit associated together, also known as a "balance" transmission line.

Parallel Pair: A duplex construction of two insulated conductors laid parallel and then covered overall with a braid or jacket.

Pay-Off: The process of feeding a cable or wire from a bobbin, reel or other package.

Glossary

Percentage Conductivity: Conductivity of a material expressed as a percentage of that of copper.

Permittivity: See *Dielectric Constant*.

Pick: Distance between two adjacent crossover points of braid filaments. The measurement in picks per inch indicates the degree of coverage.

Pico: A numerical prefix denoting one-millionth of one-millionth (10^{-12}).

Picofarad: One-millionth of one-millionth of a farad. A micromicrofarad or picofarad (abbreviation pf). (See $\mu\mu F$).

Pigtail Wire: Fine-stranded, extra-flexible, rope- lay lead wire attached to a shield for terminating purposes.

Pitch Diameter: Diameter of a circle passing through the center of the conductors in any layer of a multi-conductor cable.

Planetary Cabler: A cabler capable of laying down any number of shielded, overbraided, or jacketed singles, pairs, called groups or any combination of them in sequence.

Plastic Deformation: Change in dimensions under load that is not recovered when the load is removed.

Plasticizer: A chemical agent added to plastics to make them softer and more pliable.

Plug: The part of the two mating halves of a connector which is movable when not fastened to the other mating half.

Polychloroprene: Chemical name for Neoprene.

Polyester: Polyethylene terephthalate extensively used as a moisture-resistant cable core wrap.

Polyethylene: A thermoplastic material having excellent electrical properties.

Polymer: A material of high molecular weight formed by the chemical union of monomers.

Polyolefin: Any of the polymers and copolymers of the ethylene family of hydrocarbons.

Polypropylene: A thermoplastic similar to polyethylene but stiffer and having higher softening point (temperature); excellent electrical properties.

Polyurethane: Class of polymers known for good abrasion and solvent resistance (may be applied in solid or cellular form).

Polyvinyl Chloride: A general-purpose thermoplastic widely used for wire and cable insulations and jackets.

Porosity: Multiple voids in an insulation cross-section.

Potting: The sealing of a cable termination or other component with a liquid which thermosets into an elastomer.

Power Cables: Cables of various sizes, construction and insulation—single or multi-conductor—designed to distribute primary power to various types of equipment.

Power Factor: The ratio of resistance to impedance. The ratio of the actual power of an alternating current to apparent power. Mathematically the cosine of the angle between the voltage applied and the current resulting.

Primary Insulation: The first layer of non- conductive material applied over a conductor whose prime function is to act as electrical insulation.

Primary: The transformer winding which receives the energy from a supply circuit.

Proximity Effect: Nonuniform current distribution over the cross-section of a conductor caused by the variation of the current in a neighboring conductor.

Pulling Eye: A device used to pull cable into or from a duct.

Pulse: Energy which changes abruptly from an intensity to another. May be light energy or electrical energy.

Rated Voltage: The maximum voltage at which an electrical component can be operated for extended periods without undue degradation or safety hazard.

R-F: Abbreviation for Radio-Frequency.

Reactance: The opposition offered to the flow of alternating current by inductance or capacitance of a compound or circuit.

Redraw: The consecutive drawing of wire through a series of dies to reach a desired wire size.

Reel: A revolvable flanged device made of wood or metal, used for winding flexible metal wire or cable.

Reinforced Sheath: The outmost covering of a cable that has cable sheath constructed in layers with the addition of a reinforcing material, usually a braided fiber, molded in place between layers.

Resistance: A measure of the difficulty in moving electrical current through a medium when voltage is applied. It is measured in ohms.

Return Wire: A ground wire or the negative wire in a direct-current circuit.

Rigid Bay: Cabling equipment that maintains component sequence and can produce cables with distinct layers.

Rope-Lay Conductor: A conductor composed of a central core surrounded by one or more layers of helically laid groups of wires.

Rubber (Wire Insulation): Term used to describe wire insulations made of thermosetting elastomers, occuring naturally, or may be made synthetically.

Self-Extinguishing: Characteristic of a material whose flame is extinguished after the igniting flame source is removed.

Separator: A layer of insulating material which is placed between a conductor and its dielectric, between a cable jacket and the components it covers or between various components of a multiple-conductor cable.

Serving: A wrapping applied over the core of a cable or over a wire.

Sheath: The outer covering or jacket of a multi-conductor cable.

Shield, Conductor: The conducting layer applied to make the conductor a smooth surface in intimate contact with the insulation.

Shield Coverage: Amount of outer insulation surface covered by the shielding material.

Shield, Insulation: A conducting layer to provide a smooth surface in intimate contact with the insulation outer surface: used to eliminate electrostatic charges external to the shield, and to provide a fixed known path to the ground.

Shunt Wire: A conductor joining two parts of an electric circuit to divert part of the current.

Signal: A current used to convey information, either digital, analog, audio or video.

Single-Faced Tape: Fabric tape finished on one side with a rubber or synthetic compound.

Skin Effect: The tendency of alternating current as its frequency increases, to travel only on the surface of a conductor.

Solid Conductor: A conductor consisting of a single wire.

Glossary

Spark Test: A test designed to locate pin-holes in the insulation of a wire or cable by application of a voltage for a very short period of time while the wire is being drawn through the electrode field.

Specific Gravity: The ratio of the density (mass per unit volume) of a material to that of water.

Splice: A joining of two conductors generally from separate sheaths.

Strand: One of the wires of any stranded conductor.

Strand Lay: The distance of advance of one strand of a spirally stranded conductor, in one turn, measured axially.

Stranded Conductor: A conductor composed of groups of wires twisted together.

Surface Resistivity: The resistance of a material between two opposite sides of a unit square of its surface. It is usually expressed in ohms.

Take-Up: The process of accumulating wire or cable onto a reel, bobbin or some other type of pack. Also, the device for pulling wire or cable through a piece of equipment or machine.

Tank Test: A voltage dielectric test in which the test sample is submerged in water and voltage is applied between the conductor and water as ground.

Taped Insulation: Insulation of helically wound tapes applied over a conductor or over an assembled group of insulated conductors.

Tear Strength: The force required to initiate or continue a tear in a material under specified conditions.

Temperature Rating: The maximum temperature at which an insulating material may be used in continuous operation without loss of its basic properties.

Tensile Strength: The pull stress required to break a given specimen.

Test Lead: A flexible, insulated lead wire used for making tests, connecting instruments to a circuit temporarily, or for making temporary electrical connections.

Textile Braid: Any braid made from threads of cotton, silk or synthetic fibers.

Thermal Aging: Exposure to a thermal condition or programmed series of conditions for predescribed periods of time.

Thermoplastic: A material which softens when heated and becomes firm on cooling.

Thermoset: A material which hardens or sets when heat is applied and which, once set, cannot be resoftened by heating. The application of heat is called “curing.”

Three-Phase Current: Current delivered through three wires, with each wire serving as a return for the other two.

Three-Phase Three-Wire System: An alternating current supply system comprising three conductors over which three-phase power is sent.

Three-Wire System: A d.c. or single-phase a.c. system comprising three conductors, one of which is maintained at a potential midway between the potential of the other two.

Tracer: A means of identifying polarity.

Transmission: Transfer of electric energy from one location to another through conductors or by radiation or induction fields.

Tray: A cable tray system is an assembly of units or sections, and ancillary filings, made of noncombustible materials used to support cables. Cable tray systems include ladders, troughs, channels, solid bosom trays and similar structures.

Tray Cable: A factory-assembled multi-conductor or multi-pair control cable approved under the National Electrical Code for installation in trays.

UL: Underwriters Laboratories, Inc.

Unidirectional Stranding: A term denoting that in a stranded conductor all layers have the same direction of lay.

Unilay Strand: A conductor constructed with a central core surrounded by more than one layer of helically-laid wires, with all layers having a common length and direction of lay.

VHF: Abbreviation for Very High Frequency, 30 to 300 MHz.

VW-1: A flammability rating established by Underwriters Laboratories for wires and cables that pass a specially designed vertical flame test (formerly designated FR-1).

Velocity of Propagation (VP): The speed of an electrical signal down a length of cable compared to speed in free space expressed as a percent. It is the reciprocal of the square root of the dielectric constant of the cable insulation.

Volt: A unit of electromotive force.

Voltage: The term most often used in place of electromotive force, potential difference, or voltage drop to designate the electric pressure that exists between two points and is capable of producing a current when a closed circuit is connected between two points.

Voltage Drop: A term used to express the amount of voltage loss in a conductor of given size and length drawing a given current.

Voltage Rating: The highest voltage that may be continuously applied to a wire in conformance with standards or specifications.

Volume Resistivity (Specific Insulation Resistance): The electrical resistance between opposite faces of a 1 cm. cube of insulating material commonly expressed in ohms/centimeter.

Vulcanization: A chemical reaction in which the physical properties of an elastomer are changed by reacting it with sulfur or other cross-linking agents.

Wall Thickness: The thickness of the applied insulation or jacket.

Water Absorption: A test to determine the water absorbed by a material after a given immersion period.

Waterblocked Cable: A cable constructed with no internal voids in order to allow no longitudinal water passage under a given pressure.

Watt: A unit of electric power.

Wave Length: The distance, measured in the direction of propagation, of a repetitive electrical pulse or waveform between two successive points that are characterized by the same phase of vibration.

Wicking: The longitudinal flow of a liquid in a wire or cable due to capillary action.

Wire: A conductor, either bare or insulated.

Wire Gauge: A system of numerical designation of wire sizes.

XLPE: Cross-linked polyethylene.

Yield Strength: The minimum stress at which a material will start to physically deform without increase in load.

General Cable

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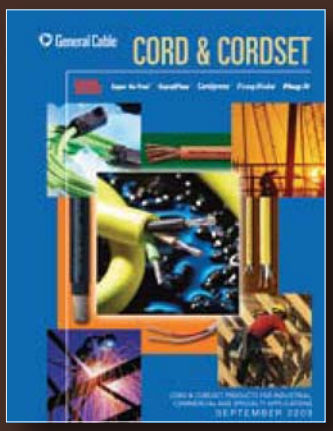

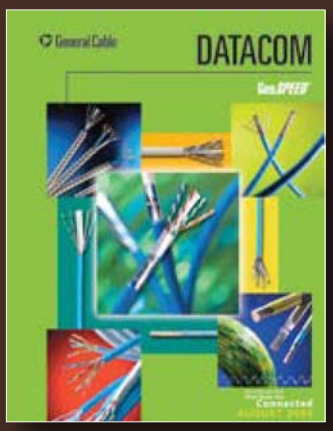

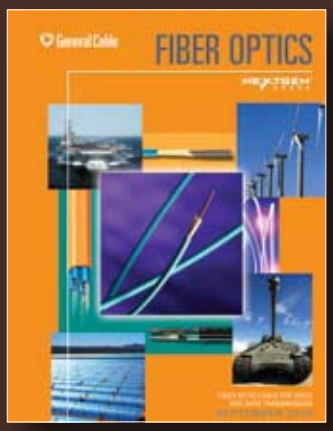

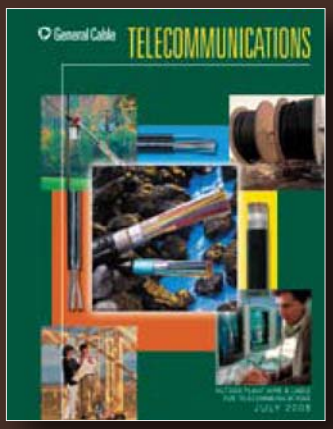

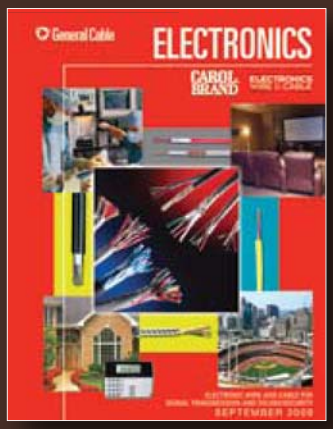

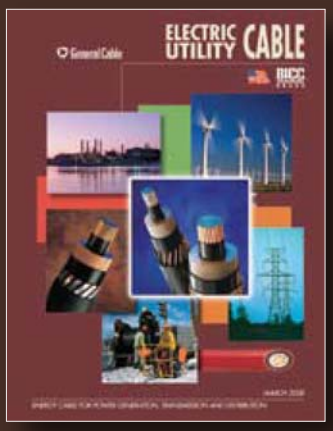

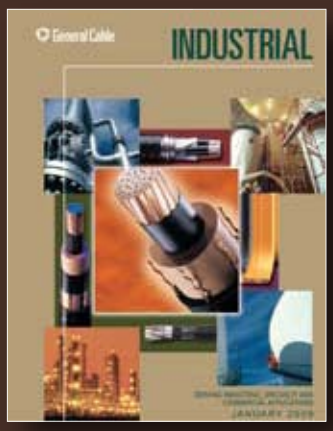

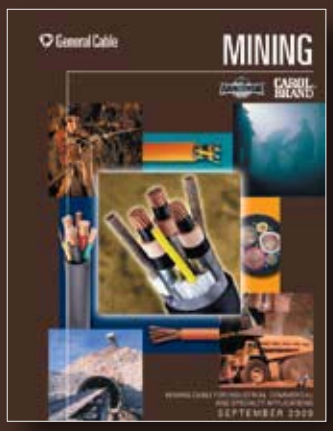

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