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2010

master catalog

& RESOURCE GUIDE

Cabling Excellence
for Open Architecture

MOHAWK

Mohawk Green Initiative

Green Highlights

- Purchasing products from local vendors and distributors to lessen the environmental impact of transportation
- Purchasing lamps with less mercury meeting LEED credit criteria
- Purchasing all copy paper with 30% recycled content
- Proper disposal and/or recycling of all required materials
  - Wood Pallets
  - Ballasts
  - All scrap electronics
  - Lamps & bulbs
  - All batteries
  - Scrap from manufacturing process

Mohawk continually strives to be a greener company. We have recognized that we can drastically reduce our overall environmental footprint by making changes to the way we do business. We understand that this is the right thing to do to protect and ensure the environment we all live in.

Mohawk has already incorporated some alternative methods to our manufacturing process and we have many more changes upcoming, including:

- Lean manufacturing principles that reduce unnecessary waste and inventory
- In-Line Printing to reduce scrap sent out for disposal and the chemicals that make up the compounds
- The use of grinders to reuse the PVC "bleed out" scrap produced from color changes
- Wire draw machines that produce longer production runs and generate less scrap
- Elimination of the "band marking" process which will eliminate the need for ink usage, which in turn will eliminate hazardous waste generated, creating a safer work environment for our associates

Products with this logo comply with the EU-RoHS directive 2002/95/EC (Restrictions on hazardous substances) regulations.

The "Green" Key Performance Indicators

Through a facility carbon footprint assessment, Mohawk has identified 3 key indicators to measuring the performance of its environmental sustainability project. These 3 indicators are solid waste disposal, electricity usage, and natural gas usage. Some key steps that have been taken, or projects under way, are:

- **Solid Waste Recycling Program** – Reduce our environmental footprint by reducing the amount of solid waste disposed of in a landfill. As of May 2009, the facility is recycling 43% of the solid waste materials generated.
- **Electricity Consumption** – Reduce our environmental footprint by reducing the amount of indirect Green House Gas emissions that result from electricity consumption. Currently, the facility is in the process of installing motion sensors and programmable thermostats, and updating the compressed air system.
- **Natural Gas Consumption** – Through natural gas usage in 2008, the facility was responsible for 316 metric tons of CO_2. Projected consumption reduction and GHG release is 10% by the end of 2009.

Open Architecture – Freedom of Choice

Mohawk's Open Architecture opens doors to allow a completely flexible and warranted mix-and-match network system, without the confines of competitive dictated partnerships. Since the cable products and installation practices are warranted through Mohawk, the channel performance is guaranteed for 25 years*.

With the Open Architecture concept, designers and end-users can create their customized network from a variety of connectivity products which have been third-party verified through Mohawk's ChannelMATE™ program. Through our extensive Mohawk training, contractors can earn the MAC accreditation. Becoming a MAC contractor allows them to offer Mohawk's ChannelMATE end-to-end system warranty, installed using any approved connectivity hardware, independently verified and defined by the industry standards.

Mohawk provides the right combination of cable products with many leading industry connectivity products to deliver an infrastructure that affords flexibility, expandability, and durability. With each ChannelMATE warranted system, the end-user is provided with all test results, confirming that the installed system meets or exceeds the latest ANSI/TIA-568-C standard, as well as ETL and UL specifications to assure compliance for safety and performance. Mohawk is an ISO 9001 compliant facility, adhering to its quality standards.

ChannelMATE guarantees that the cable and connectivity meet the specified backbone and horizontal system specifications as defined in ANSI/TIA-568-C. All parts and labor are guaranteed for 25 years.

5eLAN	Fiber Optic
Copper Backbone	AdvanceNet
MegaLAN	GigaLAN
6 LAN	XGO

* Warranty available with MAC program. See page 59 for MAC program details.

www.mohawk-cable.com

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Quick Reference Copper Cable Selection Guide

Jacket Colors & Part Numbers

			White	Blue	Pink	Yellow	Gray
UTP Cables	XGO – Augmented Cat 6	RISER	M58877	M58876	M58880	M58878	M58879
		PLENUM	M58866	M58865	M58869	M58867	M58868
	GigaLAN – Cat 6E	RISER	M57418	M57419	M57867	M57420	M57422
		PLENUM	M57413	M57414	M57750	M57415	M57417
	AdvanceNet – Cat 6e+	RISER	M56889	M57202	M57203	M57204	M57205
		PLENUM	M56905	M57193	M57194	M57195	M57196
	6 LAN Plus – Cat 6e	RISER	M58805	M58804	M58919	M58920	M58806
		PLENUM	M58802	M58801	M58914	M58863	M58803
	6 LAN – Cat 6	RISER	M58291	M58292	M58293	M58294	M58295
		PLENUM	M58280	M58281	M58282	M58283	M58285
	MegaLAN – Cat 5E	RISER	M55989	M56167	M56094	M56095	M56746
		PLENUM	M55988	M56168	M56092	M56093	M56882
	5eLAN – Cat 5e	RISER	M57554	M57553	M57555	M57556	M57552
		PLENUM	M57547	M57546	M57548	M57550	M57545
F/UTP Cables	Category 6	RISER	M58155	M58156	M58157	M58158	M58159
		PLENUM	M58175	M58176	M58177	M58178	M58179
	MegaLAN – Cat 5E	RISER	M55987	M57370	M57371	M57372	M57373
		PLENUM	M55986	M57360	M57322	M57361	M57362
	5eLAN – Cat 5e	RISER	M58195	M58196	M58197	M58198	M58145
		PLENUM	M58185	M58186	M58187	M58188	M58144

Cable Count & Type

			25 pair UTP	50 pair UTP	100 pair UTP	200 pair UTP	300 pair UTP	25 pair F/UTP	Page #
Hi-Pair	Category 5e	RISER	M58141	M58522	–	–	–	M58520	16
		PLENUM	M58142	–	–	–	–	M58521	
	Category 3	RISER	M55700	M55216	M55211	M55212	M57098	–	17
		PLENUM	M56801	M56126	M56128	M56129	M57211	M55073	

					Packaging			
Green	Red	Orange	Black	Violet	Reel	Box	Reel-in-a-box	Page #
M58881	M58882	M58883	M58884	M58885	✓	–	–	8
M58870	M58871	M58873	M58874	M58875	✓	–	–	
M57421	M57621	M57868	M57869	M57870	✓	–	✓	10
M57416	M57620	M57861	M57866	M57860	✓	–	✓	
M57206	M57207	M57208	M57209	M57210	✓	✓	✓	11
M57197	M57198	M57199	M57200	M57201	✓	✓	✓	
M58922	M58923	M58924	M58925	M58795	✓	✓	✓	12
M58915	M58916	M58917	M58918	M58794	✓	✓	✓	
M58296	M58297	M58298	M58299	M58300	✓	✓	✓	13
M58286	M58287	M58288	M58289	M58290	✓	✓	✓	
M56165	M56670	M56954	M57129	M56048	✓	✓	✓	14
M56166	M56072	M56876	M56877	M56878	✓	✓	✓	
M57557	M58008	M58009	M58010	M58007	✓	✓	✓	15
M57551	M57887	M57924	M57936	M57761	✓	✓	✓	
M58160	M58161	M58162	M58163	M58164	✓	–	–	18
M58180	M58181	M58182	M58183	M58184	✓	–	–	
M57374	M57375	M57376	M57377	M57378	✓	–	–	19
M57363	M57364	M57365	M57366	M57367	✓	–	–	
M58199	M58200	M58201	M58202	M58203	✓	–	–	20
M58189	M58190	M58191	M58192	M58193	✓	–	–	

Above part numbers are for reels only. Add “RB” for reel-in-a-box. Add “B” for boxes.

For copper product cross reference see page 44.

For copper cable selection see page 56.

Quick Reference Fiber Cable Selection Guide

			Fiber Count				
			2	4	6	8	12
Fiber Optic Cables	Tactical	Single-Mode	M96566	M96639	M96567	M96568	M96570
		Multimode	M96571	M96551	M96572	M96573	M96575
	Distribution	RISER	M9X037	M9X038	M9X039	M9X040	M9X042
		PLENUM	M9X043	M9X044	M9X045	M9X046	M9X048
	VersaLite TBF	RISER	–	–	M9X039T	–	M9X042T
		PLENUM	–	–	M9X045T	–	M9X048T
	VersaLite	PLENUM	–	–	M9X202	–	M9X204
	RiserLite – Loose Tube	Indoor/Outdoor	–	–	M9X810	–	M9X811
		Armored	–	–	M9X890	–	M9X891
	RiserLite – Central Loose Tube		M9X802	M9X803	M9X804	M9X805	M9X806
	Central Tube	Outdoor	M9X150	M9X151	M9X152	M9X153	M9X155
		Armored	M9X170	M9X171	M9X172	M9X173	M9X175
	Outdoor Loose Tube		–	–	M9X510T	–	M9X511T
	Armored Loose Tube		–	–	M9X381T	–	M9X382T
	ArmorLite	RISER	–	–	M9X230	–	M9X231
		PLENUM	–	–	M9X240	–	M9X241

For "X" in part number see optical characteristics on page 30.

Grades

Multimode

Grade 6 is a 50/125 fiber that exceeds TIA-568-C.3-1 and ISO 11801 OM4 for 550-meter lengths at 10 Gigabit data rates.

Grade 5 is a 50/125 fiber that complies with TIA-568-C.3 and ISO 11801 OM3 for 300-meter lengths at 10 Gigabit data rates. (Formerly AdvanceLite 2000)

Grade 4 is a 50/125 fiber that complies with TIA-568-C.3 and ISO 11801 OM2, and provides 600-meter link lengths for Gigabit Ethernet. (Formerly AdvanceLite 600)

Grade 3 is a 62.5/125 fiber that complies with TIA-568-C.3 and ISO 11801 OM1, and provides up to 1000-meter link lengths for Gigabit Ethernet. (Formerly AdvanceLite 1000)

Grade 2 is a 62.5/125 fiber that complies with TIA-568-C.3 and ISO 11801 OM1, and provides up to 550-meter link lengths for Gigabit Ethernet. (Formerly AdvanceLite 300)

Single-Mode

Grade SM is a single-mode fiber that complies with ITU G.652.c/d and ISO 11801 OS2. This is a low water peak fiber with advantages for CWDM applications.

24	36	48	72	96	144	Page #
–	–	–	–	–	–	31
–	–	–	–	–	–	
M9X601* M9X602	M9X604	M9X606	M9X609	M9X622	M9X619	32
M9X611* M9X612	M9X614	M9X616	M9X620	M9X623	M9X621	33
M9X601T*	M9X604T	M9X606T	–	–	–	34
M9X611T*	M9X614T	M9X616T	–	–	–	
M9X205	M9X206	M9X207	M9X209	M9X211	M9X215	35
M9X812	M9X813	M9X814	M9X815	M9X816	M9X817	36
M9X892	M9X893	M9X894	M9X895	M9X896	M9X897	37
–	–	–	–	–	–	38
–	–	–	–	–	–	39
–	–	–	–	–	–	
M9X500T	M9X502T	M9X505T	M9X507T	M9X513T	M9X509T	40
M9X384T	M9X386T	M9X389T	M9X391T	M9X398T	M9X393T	41
M9X233	–	M9X235	–	–	–	42
M9X242	–	M9X245	–	–	–	

*Single jacket version.

Standard Jacket Colors

For outside plant cables, the standard jacket color is black. This includes loose tube, RiserLite and VersaLite cables.

Grades 2, 3 & 4 – Orange

Grades 5 & 6 – Aqua

Grades SM – Yellow

Non-standard colors are available.

For fiber product cross reference see page 46.

For fiber cable selection guide see page 57.

Additional Products

Giga*LAN 10*®

Giga*LAN 10* is a component compliant Augmented Category 6 cable utilizing a unique FlexWeb® combined with patented fluted jacket construction to isolate the cable pairs, providing outstanding pair-to-pair balance.

DSL-Link®

Mohawk is the first in the industry to offer this 25-pair 5e F/UTP cable with tinned conductors. The shield offers superior reduction against RFI (radio frequency interference) which is beneficial in noisy installation environments.

Cell Tower Cable

This Cellular tower cable is an overall foil/braid shielded twisted pair cable intended for outdoor use. The compact rugged design is more flexible than traditional armored cable typically used for this application. The foil/braid shield is an excellent choice where interference from external radio frequency or electromagnetic sources is a concern.

MarineGuard®

MarineGuard cables are constructed with solid bare copper insulated conductors and assembled into four twisted pairs with an overall foil and braid shield under an overall gray LSZH jacket and are available in Category 6, Category 5E or Category 5e constructions.

Omni Guard®

Mohawk's Omni Guard industrial grade LAN copper cable families include Category 5, Category 5e or Category 6 UTP constructions. These cables are oil- and UV-resistant with a black TPE jacket for excellent abrasion/cut-through resistance.

Category 3 Cable

Our Category 3 cables offer proven support for Analog & Digital voice and IEEE 802.5 2 Mbps. They meet TIA-568-C.2 Category 3 Horizontal Standards and comply with EU-RoHS Directive 2002/95/EC Regulations.

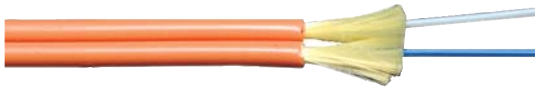
Bulk Patch Cable

Mohawk's bulk patch cables are made with stranded tinned copper. All Category 6, Category 5E or Category 5e patch cables come in unshielded versions and the Category 5e cables also come in shielded versions. All cables are available in a variety of colors, and meet the ANSI/TIA-568-C.2 requirements.

Fiber Optic Breakout

This fiber optic cable features 900 μm tight buffered fibers and is color-coded for easy termination. Available in plenum and riser, it is flame retardant, UL listed for code compliance and available in both a 2.0 and 2.5mm sub-unit. MSHA approved cables and ABS LSZH cables are also available in riser.

Simplex & Duplex



Mohawk's Simplex & Duplex fiber cables are 900 μm tight buffered with "easy strip" coating. These cables are available in riser, plenum and LSZH versions, and come in 2.9mm, 2.5mm, 2.0mm and 1.6mm diameter options. Private label and colors are available.

Media Pull

Media Pull cables are multiples of individually jacketed components. The components are bundled together in a neat, clean and easy-to-use package. Media Pull parallel spooled cables are multiple cables of the same or different category that are spooled side by side on a reel but not bound or cabled, allowing for easier installation. Available in up to 6 components and can include fiber and coax as well.

Copper Plug & Play

Mohawk's Media Pull UTP trunking cable assemblies provide an easily installed and cost-effective alternative to individual field-terminated channels. Combining factory-terminated and tested Media Pull modules with Mohawk's UTP cable in a high-performance modular cable assembly, Media Pull UTP trunking cable assemblies are designed to simplify the installation of systems in data centers and other high-density, high-performance environments.

For more information on these products, call 1-800-422-9961 or visit our website www.mohawk-cable.com.

Augmented Cat 6A UTP XGO™

Tested to 750 MHz

XGO is a high performance Augmented Category 6A cable, supporting 10GBASE-T applications over a full 100-meter channel, meeting the requirements of the current standard ANSI/TIA-568-C.2. IEEE 802.3an is looking beyond the present, specifying an operating range from 1-500 MHz.

XGO's unique and patented construction features our FlexWeb® combined with a fluted jacket, isolated cable pairs and superior pair balance, providing outstanding headroom with reduced crosstalk.

- **ETL component compliant cable to ANSI/TIA-568-C.2 Category 6A**
- **25-Year Warranty***
- **Sweep tested to 750 MHz for performance beyond 500 MHz**
- **Supports any component compliant 6A connectivity**
- **Application** – Support for 10 Gigabit Ethernet / 10GBASE-T / IEEE 802.3an; fully backwards compatible for 1000BASE-T, 100BASE-T, and 10BASE-T applications
- **Power Sum Alien Crosstalk** – Power Sum Alien Crosstalk measures the impact of many aggressors on one victim pair. It is the sum of unwanted signal coupling of crosstalk noise from the external cabling pairs into a victim pair of a cable. In the illustration (see Figure 1), a bundle of 7 cables with 6 cables around a center cable is depicted. What is being measured is the noise coupling from the pairs in the outer ring of cables (aggressor pairs) to the pairs in the center cable (victim pair). Each pair of the aggressor cables contributes noise to each of the pairs in the victim cable. The total impact on the victim is determined using a power summation equation.

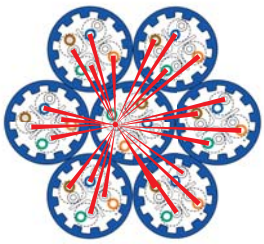


Figure 1

- This cable and/or its manufacture are covered by US Patent Nos. 6,596,944, 6,074,503, 5,424,491, 7,135,641 and patents pending.

* Warranty available with MAC program.

Electrical Characteristics

STANDARDS:
ANSI/TIA-568-C.2 CAT 6A, ISO/IEC 11801E2.1 CAT 6A & IEC 61156-5 CAT 6A
HORIZONTAL CABLE

CONDUCTOR DCR:

PLENUM	6.6 Ω/100m (20.0 Ω/Mft) MAX
RISER	7.8 Ω/100m (23.8 Ω/Mft) MAX

DCR UNBALANCE:
3% MAX

MUTUAL CAPACITANCE:
46 pF/m (14 pF/ft) NOM

CAPACITANCE UNBALANCE PAIR/GROUND:
33 pF/100m (100 pF/Mft) MAX

CHARACTERISTIC IMPEDANCE:
100 Ω ±7% (10-550 MHz)

INPUT IMPEDANCE:
100 Ω ±10% (1-100 MHz)
100 Ω ±15% (>100-350 MHz)
100 Ω ±22% (>350 MHz)

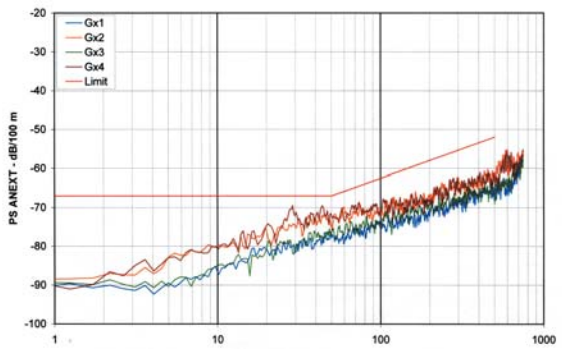
PROPAGATION DELAY:
534 + 36/√ƒ ns/100m MAX

DELTA DELAY (SKEW):
45 ns/100m MAX

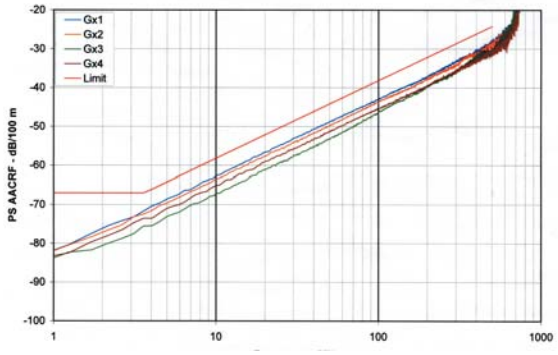
NOMINAL VELOCITY OF PROPAGATION (NVP):

PLENUM	72%
RISER	68%

Power Sum Alien NEXT

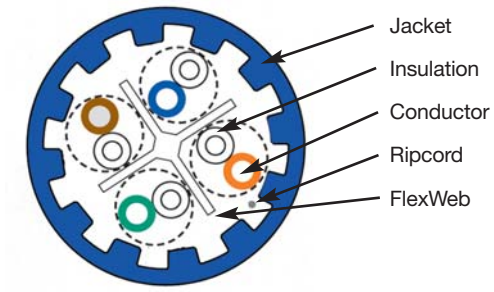


Power Sum Alien ACRF



Safety listed to NEC (NFPA 70)

Verified by ETL to TIA/EIA-568-B.2-1



Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M58877 Riser	4 PAIR 23 AWG UTP	Thermoplastic	White PVC .340 8.64	57 84	C(UL)US CMR
M58866 Plenum	4 PAIR 23 AWG UTP	FEP	White ThermoPlen®* .340 8.64	69 103	C(UL)US CMP

*Plenum rated Thermoplastic. For pair colors, see Chart A Page 50.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58877	GREEN	M58881
BLUE	M58876	RED	M58882
PINK	M58880	ORANGE	M58883
YELLOW	M58878	BLACK	M58884
GRAY	M58879	VIOLET	M58885

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58866	GREEN	M58870
BLUE	M58865	RED	M58871
PINK	M58869	ORANGE	M58873
YELLOW	M58867	BLACK	M58874
GRAY	M58868	VIOLET	M58875

Custom colors available; please consult the factory.

FREQ (MHz)	INSERTION LOSS (dB/100m)	NEXT (dB/100m)	PS-NEXT (dB/100m)	ACRF (dB/100m)	PS-ACRF (dB/100m)	RETURN LOSS (dB)	PROP DELAY (ns/100m)	ALIEN CROSSTALK PS-ANEXT (dB/100m)	ALIEN CROSSTALK PS-AACRF (dB/100m)
	max	min	min	min	min	min	max	min	min
1.0	2.0	74.3	72.3	67.8	64.8	20.0	570.0	67.0	67.0
4.0	3.8	65.3	63.3	55.8	52.8	23.0	552.0	67.0	66.2
8.0	5.3	60.8	58.8	49.7	46.7	24.5	546.7	67.0	60.1
10.0	5.9	59.3	57.3	47.8	44.8	25.0	545.4	67.0	58.2
16.0	7.4	56.2	54.2	43.7	40.7	25.0	543.0	67.0	54.1
20.0	8.3	54.8	52.8	41.8	38.8	25.0	542.0	67.0	52.2
25.0	9.3	53.3	51.3	39.8	36.8	24.3	541.2	67.0	50.2
31.25	10.5	51.9	49.9	37.9	34.9	23.6	540.4	67.0	48.3
62.5	14.9	47.4	45.4	31.9	28.9	21.5	538.6	65.6	42.3
100.0	19.1	44.3	42.3	27.8	24.8	20.1	537.6	62.5	38.2
155.0	24.0	41.4	39.4	24.0	21.0	18.8	536.9	59.6	34.4
200.0	27.5	39.8	37.8	21.8	18.8	18.0	536.5	58.0	32.2
250.0	31.0	38.3	36.3	19.8	16.8	17.3	536.3	56.5	30.2
300.0	34.2	37.1	35.1	18.3	15.3	16.8	536.1	55.3	28.7
350.0	37.2	36.1	34.1	16.9	13.9	16.3	535.9	54.3	27.3
400.0	40.0	35.3	33.3	15.8	12.8	15.9	535.8	53.5	26.2
500.0	45.2	33.8	31.8	13.8	10.8	15.2	535.6	52.0	24.2
550.0	47.7	33.2	31.2	13.0	10.0	14.9	-	-	-
600.0	50.0	32.6	30.6	12.2	9.2	14.7	-	-	-
650.0	52.3	32.1	30.1	11.54	8.5	14.4	-	-	-
750.0	56.6	31.2	29.2	10.3	7.3	14.0	-	-	-

Values above 500 MHz are for engineering information only.

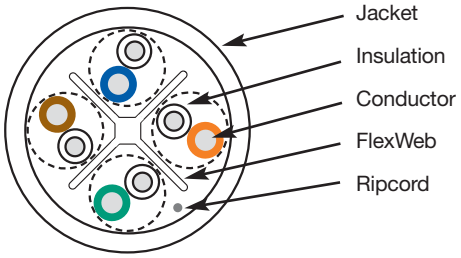
Category 6E UTP GigaLAN®

Tested to 750 MHz

GigaLAN with FlexWeb® pair isolation is one of the highest performing unshielded twisted pair (UTP) cables available today. ETL verified to ANSI/TIA-568-C.2 Category 6 and Mohawk internal GigaLAN specification.

- **25-Year Warranty***
- **Sweep tested to 750 MHz** – with verified stability
- **34% increase power at 100 MHz** and 50% increase at 250 MHz than Category 6 limits due to lower insertion loss
- **7 dB NEXT and PSNEXT improvement** versus Category 6 limits due to improved pair isolation

* Warranty available with MAC program.



This cable and/or its manufacture are covered by US Patent Nos. 6,596,944, 6,074,503 and 5,424,491.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	mm	Weight lbs/M'	kg/km	Listings
M57418 Riser	4 PAIR 23 AWG UTP	Thermoplastic	White PVC .247	6.27	34	51	C(ETL)US CMR
M57413 Plenum	4 PAIR 23 AWG UTP	Dual Insulation** FEP on all 4 pairs	White ThermoPlen®* .244	6.20	37	55	C(ETL)US CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. For pair colors see chart A on page 52.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M57418	GREEN	M57421
BLUE	M57419	RED	M57621
PINK	M57867	ORANGE	M57868
YELLOW	M57420	BLACK	M57869
GRAY	M57422	VIOLET	M57870

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M57413	GREEN	M57416
BLUE	M57414	RED	M57620
PINK	M57750	ORANGE	M57861
YELLOW	M57415	BLACK	M57866
GRAY	M57417	VIOLET	M57860

Custom colors available; please consult the factory.

Electrical Characteristics

STANDARDS:
EXCEEDS ANSI/TIA-568-C.2 CAT 6 & ISO/IEC 11801:2002 CAT 6 HORIZONTAL CABLE

CONDUCTOR DCR:
6.6 Ω/100m (20.0 Ω/Mft) MAX

DCR UNBALANCE:
3% MAX

MUTUAL CAPACITANCE:
46 pF/m (14 pF/ft) NOM

CAPACITANCE UNBALANCE PAIR/GROUND:
33 pF/100m (100 pF/Mft) MAX

CHARACTERISTIC IMPEDANCE:
100 Ω ±7% (10-550 MHz)

INPUT IMPEDANCE:
100 Ω ±12% (1-100 MHz)
100 Ω ±15% (>100-350 MHz)
100 Ω ±22% (>350 MHz)

PROPAGATION DELAY:
506 + 36/√*f* ns/100m MAX

DELTA DELAY (SKEW):
45 ns/100m MAX (10-500 MHz)

NOMINAL VELOCITY OF PROPAGATION (NVP):
PLENUM 72%
RISER 68%

FREQ (MHz)	INSERTION LOSS (dB/100m)		NEXT (dB/100m)		ACR (dB/100m)	PS-NEXT (dB/100m)		PS-ACR (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)	RL (dB)	DELAY (ns/100m)
	avg	max	avg	min	min	avg	min	min	min	min	min	max
1.0	1.8	1.85	91	81.3	79.4	84	79.3	77.4	74.8	72.8	20.0	570
4.0	3.3	3.44	82	72.3	68.8	75	70.3	66.8	62.8	60.8	24.2	552
10.0	5.2	5.44	76	66.3	60.8	69	64.3	58.8	54.8	52.8	27.0	545
16.0	6.7	6.93	73	63.2	56.2	66	61.2	54.2	50.7	48.7	27.0	543
20.0	7.4	7.79	72	61.8	54.0	65	59.8	52.0	48.8	46.8	27.0	542
31.25	9.3	9.87	69	58.9	49.1	62	56.9	47.1	44.9	42.9	25.9	540
62.5	13.4	14.40	64	54.4	40.3	57	52.4	38.3	38.9	36.9	24.2	539
100.0	17.1	18.72	61	51.3	33.3	54	49.3	31.3	34.8	32.8	23.1	538
250.0	28.1	31.88	55	45.3	15.7	48	43.3	13.7	26.8	24.8	20.9	536
350.0	33.8	39.07	53	43.1	7.5	46	41.1	5.5	23.9	21.9	20.1	536
500.0	41.4	48.73	51	40.8	-	44	38.8	-	20.8	18.8	19.2	536
600.0	46.0	54.69	50	39.6	-	43	37.6	-	-	-	18.8	-
750.0	52.3	63.12	48	38.2	-	41	36.2	-	-	-	18.2	-

Values above 250 MHz are for engineering information only.

RoHS

Safety listed to NEC (NFPA 70)

Verified by ETL to TIA/EIA-568-B.2-1

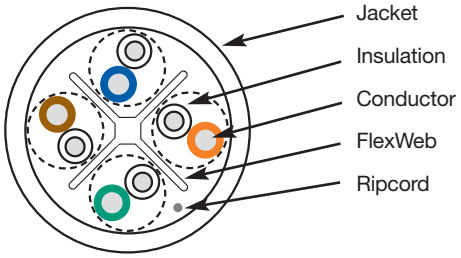
Category 6e+ UTP
AdvanceNet®

Tested to 650 MHz

AdvanceNet with FlexWeb® pair isolation is a mid-grade Category 6 unshielded twisted pair (UTP) cable. ETL verified to ANSI/TIA-568-C.2 Category 6 and Mohawk internal AdvanceNet specification.

- **25-Year Warranty***
- **Sweep tested to 650 MHz** – with verified stability
- **28 dB minimum ACR at 100 MHz**
- **4 dB NEXT and PSNEXT improvement** versus Category 6 limits due to improved pair isolation

* Warranty available with MAC program.



This cable and/or its manufacture are covered by US Patent Nos. 6,596,944, 6,074,503 and 5,424,491.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	mm	Weight lbs/M'	kg/km	Listings
M56889 Riser	4 PAIR 23 AWG UTP	Thermoplastic	White PVC .225	5.72	29	43	C(ETL)US CMR
M56905 Plenum	4 PAIR 23 AWG UTP	Dual Insulation** FEP on all 4 pairs	White ThermoPlen®* .228	5.79	32	48	C(ETL)US CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. For pair colors see chart A on page 50.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M56889	GREEN	M57206
BLUE	M57202	RED	M57207
PINK	M57203	ORANGE	M57208
YELLOW	M57204	BLACK	M57209
GRAY	M57205	VIOLET	M57210

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M56905	GREEN	M57197
BLUE	M57193	RED	M57198
PINK	M57194	ORANGE	M57199
YELLOW	M57195	BLACK	M57200
GRAY	M57196	VIOLET	M57201

Custom colors available; please consult the factory.

Electrical Characteristics

STANDARDS:
EXCEEDS ANSI/TIA-568-C.2 CAT 6, ISO/IEC 11801:2002 CAT 6 & IEC 61156-5 CAT 6 HORIZONTAL CABLE

CONDUCTOR DCR:
7.8 Ω/100m (23.8 Ω/Mft) MAX

DCR UNBALANCE:
3% MAX

MUTUAL CAPACITANCE:
46 pF/m (14 pF/ft) NOM

CAPACITANCE UNBALANCE PAIR/GROUND:
66 pF/100m (100 pF/Mft) MAX

CHARACTERISTIC IMPEDANCE:
100 Ω ±15% (1-350 MHz)

INPUT IMPEDANCE:
100 Ω ±15% (1-100 MHz)
100 Ω ±18% (>100-200 MHz)
100 Ω ±22% (>200-350 MHz)

PROPAGATION DELAY:
534 + 36/√*f* ns/100m MAX

DELTA DELAY (SKEW):
45 ns/100m MAX

NOMINAL VELOCITY OF PROPAGATION (NVP):
PLENUM 72%
RISER 68%

FREQ (MHz)	INSERTION LOSS (dB/100m)		NEXT (dB/100m)		ACR (dB/100m)	PS-NEXT (dB/100m)		PS-ACR (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)	RL (dB)
	avg	max	avg	min	min	avg	min	min	min	min	min
1.0	1.8	2.0	88	79.3	77.3	81	77.3	75.3	72.8	69.8	20.0
4.0	3.5	3.7	79	70.3	66.6	72	68.3	64.6	60.7	57.7	23.0
10.0	5.6	5.8	73	64.3	58.5	66	62.3	56.5	52.8	49.8	25.0
16.0	7.1	7.4	70	61.3	53.9	63	59.3	51.9	48.7	45.7	25.0
20.0	7.9	8.3	69	59.8	51.5	62	57.8	49.5	46.7	43.7	25.0
31.25	10.0	10.4	66	56.9	46.5	59	54.9	44.5	42.9	39.9	23.6
62.5	14.3	15.0	61	52.4	37.4	54	50.4	35.4	36.8	33.8	21.5
100.0	18.4	19.3	58	49.3	30.0	51	47.3	28.0	32.8	29.8	20.1
250.0	30.5	32.1	52	43.3	11.3	45	41.3	9.3	24.8	21.8	17.3
350.0	37.0	38.9	50	41.2	2.3	43	39.2	0.3	21.9	18.9	16.3
500.0	45.5	47.9	48	38.8	-	41	36.8	-	18.8	15.8	15.2
650.0	53.2	55.9	46	37.1	-	39	35.1	-	16.5	13.5	14.4

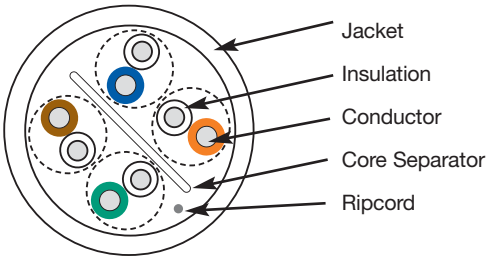
Values above 350 MHz are for engineering information only.

Safety listed to NEC (NFPA 70)

Verified by ETL to TIA/EIA-568-B.2-1

Category 6e UTP
6 LAN Plus™

Tested to 550 MHz



6 LAN Plus with flat tape core separator is a mid-grade Category 6 unshielded twisted pair (UTP) cable. ETL verified to ANSI/TIA-568-C.2 Category 6 and Mohawk internal 6 LAN Plus specification.

- **25-Year Warranty***
- **Sweep tested to 550 MHz** – with verified stability
- **25.5 dB minimum PS-ACR at 100 MHz**
- **3 dB NEXT and improvement** versus Category 6 limits due to improved pair isolation

This cable and/or its manufacture are covered by US Patent Nos. 7,179,999, 6,998,537, 6,570,095, 5,563,377 and 5,244,491.

* Warranty available with MAC program.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	Diameter mm	Weight lbs/M'	Weight kg/km	Listings
M58805 Riser	4 PAIR 23 AWG UTP	Thermoplastic	White PVC .218	5.54	25	39	C(ETL)US CMR
M58802 Plenum	4 PAIR 23 AWG UTP	Dual Insulation** FEP on all 4 pairs	White ThermoPlen®* Rated for 125°C .215	5.46	28	42	C(ETL)US CMP

*Plenum rated Thermoplastic. ** US Patent No. 5,563,377. For pair colors see chart A on page 50.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58805	GREEN	M58922
BLUE	M58804	RED	M58923
PINK	M58919	ORANGE	M58924
YELLOW	M58920	BLACK	M58925
GRAY	M58806	VIOLET	M58795

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58802	GREEN	M58915
BLUE	M58801	RED	M58916
PINK	M58914	ORANGE	M58917
YELLOW	M58863	BLACK	M58918
GRAY	M58803	VIOLET	M58794

Custom colors available; please consult the factory.

Electrical Characteristics

STANDARDS:
EXCEEDS ANSI/TIA-568-C.2 CAT 6 & ISO/IEC 11801:2002 CAT 6 HORIZONTAL CABLE

CONDUCTOR DCR:
PLENUM 7.8 Ω/100m (23.8 Ω/Mft) MAX
RISER 8.9 Ω/100m (27.1 Ω/Mft) MAX

DCR UNBALANCE:
3% MAX

MUTUAL CAPACITANCE:
46 pF/m (14 pF/ft) NOM

CAPACITANCE UNBALANCE PAIR/GROUND:
66 pF/100m (200 pF/Mft) MAX

CHARACTERISTIC IMPEDANCE:
100 Ω ±15% (1-250 MHz)

INPUT IMPEDANCE:
100 Ω ±15% (1-100 MHz)
100 Ω ±20% (>100-200 MHz)
100 Ω ±25% (>200 MHz)

PROPAGATION DELAY:
534 + 36/√*f* ns/100m MAX

DELTA DELAY (SKEW):
45 ns/100m MAX

NOMINAL VELOCITY OF PROPAGATION (NVP):
PLENUM 72%
RISER 68%

FREQ (MHz)	INSERTION LOSS (dB/100m)		NEXT (dB/100m)		ACR (dB/100m)	PS-NEXT (dB/100m)		PS-ACR (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)	RL (dB)
	avg	max	avg	min	min	avg	min	min	min	min	min
1.0	1.9	2.0	83	77.3	75.3	78	75.3	73.3	67.8	64.8	20.0
4.0	3.6	3.8	74	68.3	64.5	69	66.3	62.5	55.8	52.8	23.0
10.0	5.7	6.0	68	56.3	56.3	63	60.3	54.3	47.8	44.8	25.0
16.0	7.3	7.6	65	59.2	51.6	60	57.2	49.6	43.7	40.7	25.0
20.0	8.1	8.5	64	57.8	49.3	59	55.8	47.3	41.8	38.8	25.0
31.25	10.2	10.7	61	54.9	44.2	56	52.9	42.2	37.9	34.9	23.6
62.5	14.8	15.4	56	50.4	35.0	51	48.4	33.0	31.9	28.9	21.5
100.0	19.0	19.8	53	47.3	27.5	48	45.3	25.5	27.8	24.8	20.1
250.0	31.5	32.8	47	41.3	8.5	42	39.3	6.5	19.8	16.8	17.3
350.0	38.2	39.8	45	39.1	-	40	37.1	-	16.9	13.9	16.3
500.0	47.0	48.9	43	36.8	-	38	34.8	-	13.8	10.8	15.2
550.0	49.7	51.8	42	36.2	-	37	34.2	-	-	-	14.9

Values above 250 MHz are for engineering information only.

Safety listed to NEC (NFPA 70)

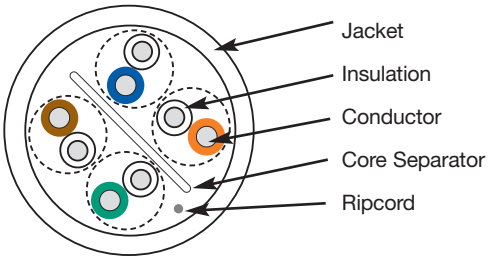
Verified by ETL to TIA/EIA-568-B.2-1

Category 6 UTP
6 LAN™

Tested to 550 MHz

6 LAN with flat tape core separator is an entry grade Category 6 unshielded twisted pair (UTP) cable. ETL verified to ANSI/TIA-568-C.2 Category 6 and Mohawk internal 6 LAN specification.

- **25-Year Warranty***
- **Sweep tested to 550 MHz** – with verified stability
- **24 dB minimum PS-ACR at 100 MHz**



This cable and/or its manufacture are covered by US Patent Nos. 7,179,999, 6,998,537, 6,570,095 and 5,424,491.

* Warranty available with MAC program.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	mm	Weight lbs/M'	kg/km	Listings
M58291 Riser	4 PAIR 23 AWG UTP	Thermoplastic	White PVC .212	5.38	24	36	C(ETL)US CMR
M58280 Plenum	4 PAIR 23 AWG UTP	Dual Insulation** FEP on all 4 pairs	White ThermoPlen®* Rated for 125°C .208	5.28	27	42	C(ETL)US CMP

*Plenum rated Thermoplastic. ** US Patent No. 5,563,377. For pair colors see chart A on page 50.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58291	GREEN	M58296
BLUE	M58292	RED	M58297
PINK	M58293	ORANGE	M58298
YELLOW	M58294	BLACK	M58299
GRAY	M58295	VIOLET	M58300

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58280	GREEN	M58286
BLUE	M58281	RED	M58287
PINK	M58282	ORANGE	M58288
YELLOW	M58283	BLACK	M58289
GRAY	M58285	VIOLET	M58290

Custom colors available; please consult the factory.

Electrical Characteristics

STANDARDS:
MEETS ANSI/TIA-568-C.2 CAT 6 & ISO/IEC 11801:2002 CAT 6 HORIZONTAL CABLE

CONDUCTOR DCR:
7.8 Ω/100m (23.8 Ω/Mft) MAX

DCR UNBALANCE:
3% MAX

MUTUAL CAPACITANCE:
46 pF/m (14 pF/ft) NOM

CAPACITANCE UNBALANCE PAIR/GROUND:
66 pF/100m (200 pF/Mft) MAX

CHARACTERISTIC IMPEDANCE:
100 Ω ±15% (1-250 MHz)

INPUT IMPEDANCE:
100 Ω ±15% (1-100 MHz)
100 Ω ±20% (>100-200 MHz)
100 Ω ±25% (>200 MHz)

PROPAGATION DELAY:
534 + 36/√*f* ns/100m MAX

DELTA DELAY (SKEW):
45 ns/100m MAX

NOMINAL VELOCITY OF PROPAGATION (NVP):
PLENUM 72%
RISER 68%

FREQ (MHz)	INSERTION LOSS (dB/100m)		NEXT (dB/100m)		ACR (dB/100m)	PS-NEXT (dB/100m)		PS-ACR (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)	RL (dB)
	avg	max	avg	min	min	avg	min	min	min	min	min
1.0	1.9	2.0	80	74.3	72.3	75	72.3	70.3	67.8	64.8	20.0
4.0	3.6	3.8	71	65.3	61.5	66	63.3	59.5	55.8	52.8	23.0
10.0	5.7	6.0	65	59.3	53.3	60	57.3	51.3	47.8	44.8	25.0
16.0	7.3	7.6	62	56.2	48.6	57	54.2	46.6	43.7	40.7	25.0
20.0	8.1	8.5	61	54.8	46.3	56	52.8	44.3	41.8	38.8	25.0
31.25	10.2	10.7	58	51.9	41.2	53	49.9	39.2	37.9	34.9	23.6
62.5	14.8	15.4	53	47.4	32.0	48	45.4	30.0	31.9	28.9	21.5
100.0	19.0	19.8	50	44.3	24.5	45	42.3	22.5	27.8	24.8	20.1
250.0	31.5	32.8	44	38.3	5.5	39	36.3	3.5	19.8	16.8	17.3
300.0	35.0	36.4	43	37.1	0.7	38	35.1	-	18.3	15.3	16.8
500.0	47.0	48.9	40	33.8	-	35	31.8	-	13.8	10.8	15.2
550.0	49.7	51.8	39	33.2	-	34	31.2	-	-	-	14.9

Values above 250 MHz are for engineering information only.

Safety listed to NEC (NFPA 70)

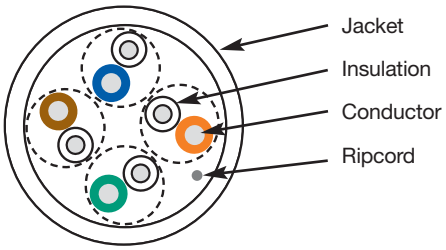
Verified by ETL to TIA/EIA-568-B.2-1

Category 5E UTP
MegaLAN®

Tested to 400 MHz

MegaLAN is an enhanced Category 5e grade unshielded twisted pair (UTP) cable. ETL verified to ANSI/TIA-568-C.2 category 5e and Mohawk internal MegaLAN specification.

- **25-Year Warranty***
- **Sweep tested to 400 MHz** – with verified stability
- **1 dB minimum improvement in Insertion Loss versus Category 5e**
- **5 dB minimum improvement in NEXT versus Category 5e**
- **.25 ns/meter maximum skew** – tightly controlled propagation delay



This cable and/or its manufacture are covered by US Patent No. 5,424,491.

* Warranty available with MAC program.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	mm	Weight lbs/M'	kg/km	Listings
M55989 Riser	4 PAIR 24 AWG UTP	Thermoplastic	White PVC .190	4.83	20	30	C(ETL)US CMR
M55988 Plenum	4 PAIR 24 AWG UTP	Dual Insulation** FEP on all 4 pairs	White ThermoPlen®* .190	4.83	24	36	C(ETL)US CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. For pair colors see chart A on page 50.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M55989	GREEN	M56165
BLUE	M56167	RED	M56670
PINK	M56094	ORANGE	M56954
YELLOW	M56095	BLACK	M57129
GRAY	M56746	VIOLET	M57048

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M55988	GREEN	M56166
BLUE	M56168	RED	M56072
PINK	M56092	ORANGE	M56876
YELLOW	M56093	BLACK	M56877
GRAY	M56882	VIOLET	M56878

Custom colors available; please consult the factory.

Electrical Characteristics

STANDARDS:
EXCEEDS ANSI/TIA-568-C.2 CAT 5e & ISO/IEC 11801:2002 CAT 5 HORIZONTAL CABLE

CONDUCTOR DCR:
8.9 Ω/100m (27.1 Ω/Mft) MAX

DCR UNBALANCE:
3% MAX

MUTUAL CAPACITANCE:
46 pF/m (14 pF/ft) NOM

CAPACITANCE UNBALANCE PAIR/GROUND:
66 pF/100m (200 pF/Mft) MAX

CHARACTERISTIC IMPEDANCE:
100 Ω ±15% (1-400 MHz)

INPUT IMPEDANCE:
100 Ω ±15% (1-100 MHz)
100 Ω ±22% (>100-200 MHz)

PROPAGATION DELAY:
506 + 36/√f ns/100m MAX

DELTA DELAY (SKEW):
25 ns/100m MAX

NOMINAL VELOCITY OF PROPAGATION (NVP):
PLENUM 72%
RISER 68%

FREQ (MHz)	INSERTION LOSS (dB/100m) avg	max	(dB/mft) max	NEXT (dB/100m) avg	min	ACR (dB/100m) min	PS-NEXT (dB/100m) avg	min	PS-ACR (dB/100m) min	ELFEXT (dB/100m) min	PS-ELFEXT (dB/100m) min	RL (dB) min
1.0	1.8	2.0	6.2	80	70.3	70.3	73	68.3	66.3	67.8	64.8	20.0
4.0	3.6	4.1	12.2	70	61.3	59.3	63	59.3	55.3	55.8	52.8	23.0
10.0	5.8	6.5	19.4	64	55.3	50.9	58	53.3	46.9	47.8	44.8	25.0
20.0	8.3	9.2	27.7	60	50.8	43.7	54	48.8	39.7	41.8	38.8	25.0
31.25	10.4	11.7	34.8	58	47.9	38.5	51	45.9	34.5	37.9	34.9	23.6
62.5	15.1	17.0	50	54	43.4	29.0	47	41.4	25.0	31.9	28.9	21.5
100.0	19.6	22.0	64	50	40.3	21.3	43	38.3	17.3	27.8	24.8	20.1
200.0	28.8	32.4	93	46	35.8	7.3	40	33.8	3.3	21.8	18.8	18.0
300.0	36.5	40.5	116	44	33.1	-	37	31.1	-	18.3	15.3	16.8
400.0	43.2	45.6	136	42	31.3	-	35	29.3	-	-	-	15.9

Values above 250 MHz are for engineering information only.

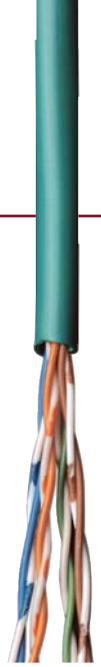
Safety listed to NEC (NFPA 70)

Verified by ETL to TIA/EIA-568-B.2-1

RoHS

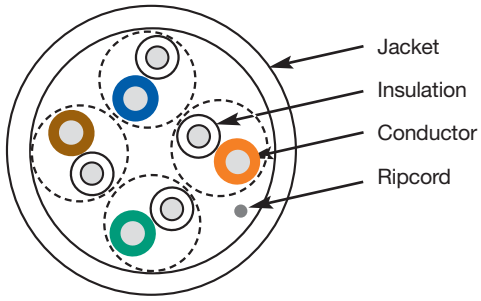
Category 5e UTP
5eLAN®

Tested to 200 MHz



5eLAN is an enhanced Category 5e grade unshielded twisted pair (UTP) cable. ETL verified to ANSI/TIA-568-C.2 Category 5e and Mohawk internal 5eLAN specification.

- **25-Year Warranty***
- **Sweep tested to 200 MHz** – with verified stability
- **14 dB Minimum ACR @ 100 MHz**
- **.25 ns/meter Maximum Skew** – tightly controlled propagation delay



This cable and/or its manufacture are covered by US Patent No. 5,424,491.

* Warranty available with MAC program.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M57554 Riser	4 PAIR 24 AWG UTP	Thermoplastic	White PVC .190 4.83	20 30	C(ETL)US CMR
M57547 Plenum	4 PAIR 24 AWG UTP	Dual Insulation** FEP on all 4 pairs	White ThermoPlen®* .185 4.70	23 34	C(ETL)US CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. For pair colors see chart A on page 50.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M57554	GREEN	M57557
BLUE	M57553	RED	M58008
PINK	M57555	ORANGE	M58009
YELLOW	M57556	BLACK	M58010
GRAY	M57552	VIOLET	M58007

Custom colors available; please consult the factory.

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M57547	GREEN	M57551
BLUE	M57546	RED	M57887
PINK	M57548	ORANGE	M57924
YELLOW	M57550	BLACK	M57936
GRAY	M57545	VIOLET	M57761

FREQ (MHz)	INSERTION LOSS (dB/100m)		(dB/mft)	NEXT (dB/100m)		ACR (dB/100m)	PS-NEXT (dB/100m)		PS-ACR (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)	RL (dB)
	avg	max	max	avg	min	min	avg	min	min	min	min	min
1.0	1.8	2.0	6.3	77	66.3	64.3	68	62.3	60.3	63.8	60.8	20.0
4.0	3.8	4.1	13	68	57.3	53.2	57	53.3	49.2	51.8	48.8	23.0
10.0	6.0	6.5	20	62	51.3	44.8	52	47.3	40.8	43.8	40.8	25.0
20.0	8.6	9.3	28	58	46.8	37.5	48	42.8	33.5	37.8	34.8	25.5
31.25	10.9	11.7	36	56	43.9	32.2	46	39.9	28.2	33.9	30.9	23.6
62.5	15.8	17.0	52	52	39.4	22.4	42	35.4	18.4	27.9	24.9	21.5
100.0	20.5	22.0	67	48	36.3	14.3	38	32.3	10.3	23.8	20.8	20.1
200.0	30.2	32.4	99	43	31.8	-	33	27.8	-	17.8	14.8	18.0

Values above 100 MHz are for engineering information only.

RoHS

Safety listed to NEC (NFPA 70)

Verified by ETL to TIA/EIA-568-B.2-1

High Pair Count

25 and 50 pair Category 5 and 5e cables and/or their manufacture are covered by US Patent Nos. 5,821,466 and 5,424,491.

Power Sum Backbone Cables

OPERATING TEMP.: -20ºC to +60ºC (-4ºF to +140ºF)
STORAGE TEMP.: -20ºC to +75ºC (-4ºF to +167ºF)
INSTALLATION TEMP.:* 0ºC to +60ºC (+32ºF to +140ºF)

* THE INSTALLATION TEMPERATURE REFERS TO THE TEMPERATURE OF THE *CABLE* WHILE BEING INSTALLED OR PULLED. DO NOT INSTALL BELOW 0ºC (+32ºF).

Mohawk Part No.	Cable Type	Shield Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Min Bend Radius inch mm	Listings
Category 5e Riser						
M58141	25 PAIR 24 AWG UTP	None	Gray PVC .470 11.94	119 177	4.7 119	C(UL)US CMR
M58522	50 PAIR 24 AWG UTP	None	Gray PVC .750 19.05	252 375	7.5 191	C(UL)US CMR
M58520	25 PAIR 24 AWG F/UTP	O/A ALUM/PLY W/DW	Gray PVC .522 13.26	149 222	5.25 133	C(UL)US CMR
Category 5e Plenum						
M58142	25 PAIR 24 AWG UTP	None	Gray FEP .430 10.92	137 204	4.3 109	C(UL)US CMP
M58521	25 PAIR 24 AWG F/UTP	O/A ALUM/PLY W/DW	Gray ThermoPlen®* .472 11.99	157 234	4.75 120	C(ETL)US CMP

For pair color code see chart D on page 50.

Category 5e Power Sum 25 Pair Packaging Options

Type	Reel/Put-up	Gross Weight (lbs.)	Reel/Put-up	Gross Weight (lbs.)	Reel/Put-up	Gross Weight (lbs.)
Plenum	22" Reel 1000 ft.	131	30" Reel 2000 ft.	262	36" Reel 5000 ft.	655
Non-Plenum	24" Reel 1000 ft.	119	36" Reel 2000 ft.	245	48" Reel 5000 ft.	640

Mohawk Part No.	Cable Type	Shield Type	Jacket Type Diameter inch	mm	Weight lbs/M'	kg/km	Min Bend Radius inch	mm	Listings
Category 3 Riser									
M55700	25 PAIR 24 AWG UTP	None	Gray PVC .364	9.25	100	149	3.6	91	C(UL)US CMR
M55216	50 PAIR 24 AWG UTP	None	Gray PVC .591	15.01	197	293	5.9	150	C(UL)US CMR
M55211	100 PAIR 24 AWG UTP	None	Gray PVC .707	17.96	381	567	7.1	180	C(UL)US CMR
M55212	200 PAIR 24 AWG UTP	None	Gray PVC 1.054	26.77	814	1211	10.5	267	C(UL)US CMR
M57098	300 PAIR 24 AWG UTP	None	Gray PVC 1.222	31.04	1186	1765	12.25	311	C(UL)US CMR
Category 3 Plenum									
M56801	25 PAIR 24 AWG UTP	None	Gray ThermoPlen®* .389	9.88	123	183	3.9	99	C(ETL)US CMP
M56126	50 PAIR 24 AWG UTP	None	Gray ThermoPlen®* .550	13.97	224	333	5.5	140	C(ETL)US CMP
M56128	100 PAIR 24 AWG UTP	None	Gray ThermoPlen®* .775	19.69	443	659	7.8	198	C(ETL)US CMP
M56129	200 PAIR 24 AWG UTP	None	Gray ThermoPlen®* 1.088	27.64	942	1402	10.9	277	C(ETL)US CMP
M57211	300 PAIR 24 AWG UTP	None	Gray ThermoPlen®* 1.334	33.88	1397	2079	13.3	338	C(ETL)US CMP
M55073	25 PAIR 24 AWG F/UTP	O/A ALUM/PLY W/DW	Gray ThermoPlen®* .346	8.79	115	171	3.5	88	C(ETL)US CMP

*Plenum rated Thermoplastic. For pair and binder colors see chart B on page 50.

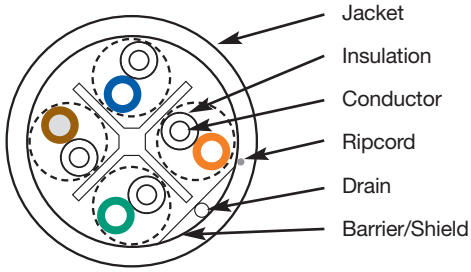
Category 3 High Pair Count Packaging Options

		Riser UTP		Plenum UTP	
Pair Count	Put-up	Reel Size	Gross Weight (lbs.)	Reel Size	Gross Weight (lbs.)
25	1000 ft.	18 x 10.5 x 8	96.1	18 x 10.5 x 8	107.21
25	5000 ft.	36 x 12 x 10	471	36 x 12 x 10	526.55
25	10000 ft.	36 x 20 x 10	1087	36 x 20 x 13	979
50	1000 ft.	24 x 12 x 10	189.9	24 x 14 x 10	224
50	5000 ft.	38 x 20 x 13	994.5	45 x 20 x 13	1159.64
100	1000 ft.	36 x 12 x 10	376.5	36 x 12 x 10	436.4
100	4000 ft.*	50 x 28 x 24	1849	50 x 28 x 24	4000
100	5000 ft.*	50 x 28 x 24	1930	–	–
200	1000 ft.	36 x 20 x 13	782.5	38 x 20 x 13	908.7
300	1000 ft.	45 x 20 x 13	1164.45	50 x 28 x 24	1407.1

* Maximum capacity for this cable

F/UTP Category 6

Tested to 550 MHz



Category 6 F/UTP is a Category 6 with FlexWeb® pair isolator and foil-backed shield over the cable core with a drain under the foil cable. ETL verified to ANSI/TIA-568-C.2 Category 6 and Mohawk internal 6 F/UTP specification .

- **25-Year Warranty***
- **Sweep tested to 550 MHz** – with verified stability
- **24 dB minimum ACR at 100 MHz**
- **.30 ns/meter Maximum Skew** – tightly controlled propagation delay
- **Use with shielded or screened connecting hardware is recommended**

This cable and/or its manufacture are covered by US Patent Nos. 6,596,944, 6,074,503 and 5,424,491.

* Warranty available with MAC program.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	Diameter mm	Weight lbs/M'	Weight kg/km	Listings
M58155 Riser	4 PAIR 23 AWG F/UTP	Thermoplastic	White PVC .265	6.73	44	65	C(UL)US CMR
M58175 Plenum	4 PAIR 23 AWG F/UTP	FEP	White ThermoPlen®* .255	6.48	49	73	C(UL)US CMP

*Plenum rated Thermoplastic. For pair colors see chart A on page 50.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58155	GREEN	M58160
BLUE	M58156	RED	M58161
PINK	M58157	ORANGE	M58162
YELLOW	M58158	BLACK	M58163
GRAY	M58159	VIOLET	M58164

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58175	GREEN	M58180
BLUE	M58176	RED	M58181
PINK	M58177	ORANGE	M58182
YELLOW	M58178	BLACK	M58183
GRAY	M58179	VIOLET	M58184

Custom colors available; please consult the factory.

Electrical Characteristics

STANDARDS:
EXCEEDS ANSI/TIA-568-C.2 CAT 6 & ISO/IEC 11801:2002 CAT 6 HORIZONTAL CABLE

CONDUCTOR DCR:
7.8 Ω/100m (23.8 Ω/Mft) MAX

DCR UNBALANCE:
3% MAX

MUTUAL CAPACITANCE:
46 pF/m (14 pF/ft) NOM

CAPACITANCE UNBALANCE PAIR/GROUND:
66 pF/100m (200 pF/Mft) MAX

CHARACTERISTIC IMPEDANCE:
100 Ω ±15% (1-300 MHz)

INPUT IMPEDANCE:
100 Ω ±15% (1-100 MHz)
100 Ω ±22% (>100-200 MHz)
100 Ω ±32% (>200-350 MHz)

PROPAGATION DELAY:
534 + 36/√*f* ns/100m MAX

DELTA DELAY (SKEW):
30 ns/100m MAX

NOMINAL VELOCITY OF PROPAGATION (NVP):
PLENUM 72%
RISER 68%

FREQ (MHz)	INSERTION LOSS (dB/100m)		NEXT (dB/1000ft)		ACR (dB/100m)	PS-NEXT (dB/100m)		PS-ACR (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)	RL (dB/100m)
	avg	max	avg	min	min	avg	min	min	min	min	min
1.0	1.9	2.0	82	74.3	72.3	75	72.3	70.3	70.0	68.0	20.0
4.0	3.6	3.8	73	65.3	61.5	65	63.3	59.5	58.0	56.0	23.0
10.0	5.6	6.0	67	59.3	53.3	60	57.3	51.3	50.0	48.0	25.0
16.0	7.1	7.6	66	56.2	48.6	58	54.2	46.6	45.9	43.9	25.0
20.0	7.9	8.5	64	54.8	46.3	56	52.8	44.3	44.0	42.0	25.0
31.25	10.0	10.7	62	51.9	41.2	53	49.9	39.2	40.1	38.1	23.6
62.5	14.4	15.4	58	47.4	32.0	49	45.4	30.0	34.1	32.1	21.5
100.0	18.5	19.8	54	44.3	24.5	45	42.3	22.5	30.0	28.0	20.1
250.0	30.7	32.8	49	38.3	5.5	40	36.3	3.5	22.0	20.0	17.3
500.0	45.7	48.9	45	33.8	-	36	31.8	-	16.0	14.0	15.2
550.0	48.4	51.8	44	33.2	-	35	31.2	-	-	-	14.9

Values above 250 MHz are for engineering information only.

Safety listed to NEC (NFPA 70)

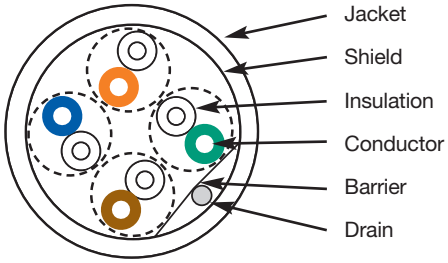
Verified by ETL to TIA/EIA-568-B.2-1

F/UTP MegaLAN®

Tested to 400 MHz

MegaLAN F/UTP is a foil-backed shield over the cable core with a drain wire under the foil shield. ETL verified to Category 5e and Mohawk internal MegaLAN F/UTP specification.

- **25-Year Warranty***
- **Sweep tested to 400 MHz** – with verified stability
- **20 dB minimum ACR at 100 MHz**
- **5 dB NEXT improvement versus Category 5e**
- **Use with shielded or screened connecting hardware is recommended**



This cable and/or its manufacture are covered by US Patent No. 5,424,491.

* Warranty available with MAC program.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	Diameter mm	Weight lbs/M'	Weight kg/km	Listings
M55987 Riser	4 PAIR 24 AWG F/UTP	Thermoplastic	White PVC .245	6.22	32	48	C(UL)US CMR
M55986 Plenum	4 PAIR 24 AWG F/UTP	FEP	White ThermoPlen®* .224	5.69	32	48	C(UL)US CMP

*Plenum rated Thermoplastic. For pair colors see chart A on page 50.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M55987	GREEN	M57374
BLUE	M57370	RED	M57375
PINK	M57371	ORANGE	M57376
YELLOW	M57372	BLACK	M57377
GRAY	M57373	VIOLET	M57378

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M55986	GREEN	M57363
BLUE	M57360	RED	M57364
PINK	M57322	ORANGE	M57365
YELLOW	M57361	BLACK	M57366
GRAY	M57362	VIOLET	M57367

Custom colors available; please consult the factory.

Electrical Characteristics

STANDARDS:
EXCEEDS ANSI/TIA-568-C.2 CAT 5e & ISO/IEC 11801:2002 CAT 5 HORIZONTAL CABLE

CONDUCTOR DCR:
8.9 Ω/100m (27.1 Ω/Mft) MAX

DCR UNBALANCE:
3% MAX

MUTUAL CAPACITANCE:
46 pF/m (14 pF/ft) NOM

CAPACITANCE UNBALANCE PAIR/GROUND:
66 pF/100m (200 pF/Mft) MAX

CHARACTERISTIC IMPEDANCE:
100 Ω ±15% (1-400 MHz)

INPUT IMPEDANCE:
100 Ω ±15% (1-100 MHz)
100 Ω ±22% (>100-200 MHz)

PROPAGATION DELAY:
506 + 36/√f ns/100m MAX

DELTA DELAY (SKEW):
30 ns/100m MAX

NOMINAL VELOCITY OF PROPAGATION (NVP):
PLENUM 72%
RISER 68%

FREQ (MHz)	INSERTION LOSS (dB/100m)		NEXT (dB/100m)		ACR (dB/100m)	PS-NEXT (dB/100m)		PS-ACR (dB/100m)	ELFEXT (dB/100m)	PS-ELFEXT (dB/100m)	RL (dB)
	avg	max	avg	min	min	avg	min	min	min	min	min
1.0	1.8	2.0	80	70.3	70.3	73	68.3	66.3	67.8	64.8	20.0
4.0	3.6	4.0	70	61.3	59.3	63	59.3	55.3	55.8	52.8	23.0
10.0	5.8	6.4	64	55.3	50.9	58	53.3	46.9	47.8	44.8	25.0
16.0	7.3	8.1	62	52.2	46.1	56	50.2	42.1	43.7	40.7	25.0
20.0	8.3	9.1	60	50.8	43.7	54	48.8	39.7	41.8	38.8	25.0
31.25	10.4	11.4	58	47.9	38.5	51	45.9	34.5	37.9	34.9	23.6
62.5	15.1	16.4	54	43.4	29.0	47	41.4	25.0	31.9	28.9	21.5
100.0	19.6	21.0	50	40.3	21.3	43	38.3	17.3	27.8	24.8	20.1
250.0	32.8	34.4	45	34.3	1.9	38	32.3	-	19.8	16.8	17.3
300.0	36.5	38.0	44	33.1	-	37	31.1	-	18.3	15.3	16.8
350.0	40.0	41.4	43	32.1	-	36	30.1	-	16.9	13.9	16.3
400.0	43.2	44.6	42	31.3	-	35	29.3	-	-	-	15.9

Values above 250 MHz are for engineering information only.

Safety listed to NEC (NFPA 70)

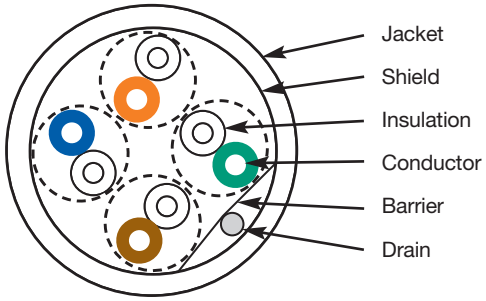
Verified by ETL to TIA/EIA-568-B.2-1

Category 5e F/UTP
5eLAN®

Tested to 200 MHz

5eLAN F/UTP is an enhanced Category 5e grade unshielded twisted pair (UTP) cable. ETL verified to ANSI/TIA 568-C.2 Category 5e and Mohawk internal 5eLAN specification.

- **25-Year Warranty***
- **Sweep tested to 200 MHz** – with verified stability
- **14 dB minimum ACR at 100 MHz**
- **.25 ns/meter Maximum Skew** – tightly controlled propagation delay
- **Use with shielded or screened connecting hardware is recommended**



* Warranty available with MAC program.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M58145 Riser	4 PAIR 24 AWG F/UTP	Thermoplastic	Gray PVC .232 5.89	29 43	C(UL)US CMR
M58144 Plenum	4 PAIR 24 AWG F/UTP	FEP	Gray ThermoPlen®* .218 5.54	31 46	C(UL)US CMP

*Plenum rated Thermoplastic. For pair colors see chart A on page 50.

Jacket Colors for 4-Pair Riser

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58195	GREEN	M58199
BLUE	M58196	RED	M58200
PINK	M58197	ORANGE	M58201
YELLOW	M58198	BLACK	M58202
GRAY	M58145	VIOLET	M58203

Custom colors available; please consult the factory.

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58185	GREEN	M58189
BLUE	M58186	RED	M58190
PINK	M58187	ORANGE	M58191
YELLOW	M58188	BLACK	M58192
GRAY	M58144	VIOLET	M58193

RoHS

Safety listed to NEC (NFPA 70)

Verified by ETL to TIA/EIA-568-B.2-1

Special Applications

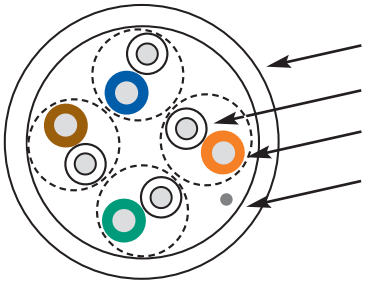
Spectrum®

Low Skew Video Twisted Pair Cable

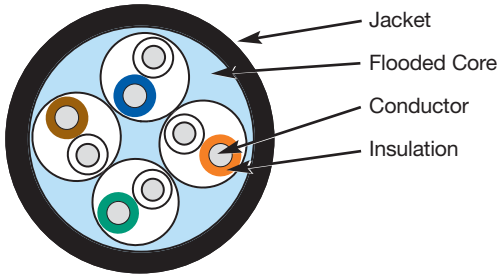
With fast growing applications such as digital signage and in-studio video monitoring becoming mainstream, Mohawk has developed an unshielded twisted pair cable as an alternative to coax for RGB (Red,Green,Blue) or component style video broadcasts. The cable consists of a standard "Category" style design using four twisted pairs under one jacket. This allows the cables to be smaller than the standard style coax type cables that have been traditionally used for RGB applications.

The primary benefit is the cable's built-in "low-skew." Skew is defined as the difference in signal delay between any pairs in the same cable. This cable has a skew of **2.2ns/100m**. This means that all parts of the image being transmitted along the separate pairs of cable will arrive within 2.2 nanoseconds of each other, ensuring the clearest image on the receiving monitor. The lower the skew, the longer the lengths of cable that can carry the video transmission before experiencing some form of degradation of the image. The cable can transmit component type video on lengths of up to **2000 ft.**

4PR UTP



4PR FLOODED



Applications

- Retail Signage
- Supermarkets
- Education
- Government
- Hospitality
- Transportation

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M58813 Non-Plenum	4 PAIR 23 AWG UTP	Thermoplastic	Maroon PVC .190 4.8	20 30	C(ETL)US CMR
M58814 Plenum	4 PAIR 23 AWG UTP	Dual Insulation** FEP on all 4 pairs	Maroon ThermoPlen®* .185 4.7	23 34	C(ETL)US CMP
M58841 LSZH	4 PAIR 23 AWG UTP	Thermoplastic	Maroon LSZH .196 4.98	26 39	N/A
M58854 Indoor/Outdoor	4 PAIR 23 AWG FLOODED	Thermoplastic	Black LSZH .250 6.35	41 61	C(UL)US CM-LS

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. For pair colors see chart A on page 50.
Custom colors available; please consult the factory.

RoHS

Special Applications

LAN-Trak OSP

Outside Plant Cable

LAN-Trak OSP delivers TIA/EIA-568-C.2 Category 5, 5e, 5E or 6 electrical performance in an outside plant cable, because even small amounts of moisture or water in the cable will degrade the electrical performance of a Category cable. These cables are designed for exposure to the elements. Jacketed with black UV-resistant polyethylene, they employ a craft-friendly semi-dry flooding material that cleans easily from the cable core.

Traditional petroleum-based gels such as "icky-pick" result in hard-to-clean and time-consuming cable prep time. This thixotropic gel has a dry, soft texture that is dermally safe and cleans easily with citrus-based cleaners. The result is faster cable prep time, quicker clean-ups and happier technicians.

These cables allow you to extend your current network to outdoor satellite structures such as temporary classrooms or trailers in a campus environment. They are also well suited for runs under concrete slabs and in other wet locations.

These cables are offered in both unshielded (UTP) and the more robust corrugated aluminum tape cables. Also, the NEC may require a Category 5, 5e, or 6 rated protection device.

As with all horizontal cables, run length is limited to 90 meters (295 feet) per TIA/EIA-568-C.2 for Category 5, 5e, or 6 operation.

RoHS

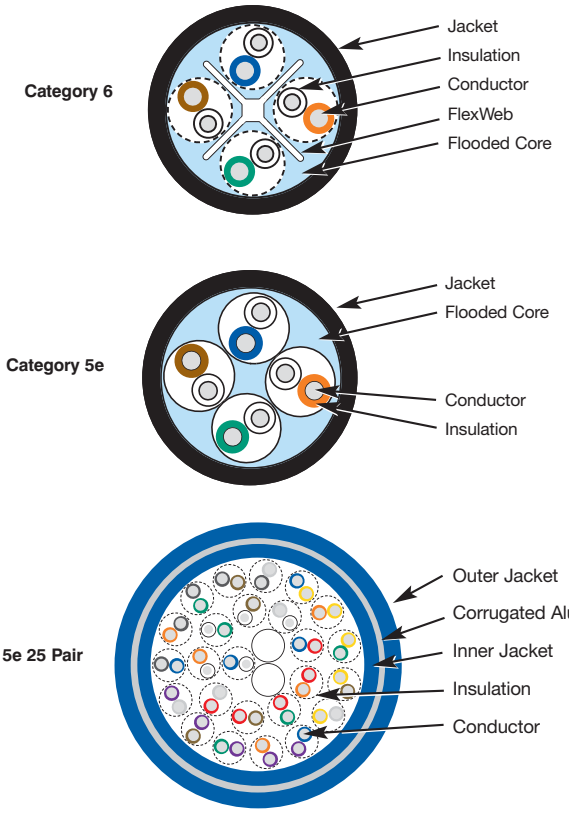
Mohawk Part No.	Cable Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km	Min. Bend Radius inch	Min. Bend Radius mm
LAN-Trak OSP Category 6							
M57622***	4 PAIR 24 AWG Duct/Aerial Lashed	.261	6.63	36	54	2.75	70
LAN-Trak OSP Category 5e							
M58790	4 PAIR 24 AWG Duct/Aerial Lashed	.236	5.99	29	43	2.50	61
M57562*	4 PAIR 24 AWG Suitable for Burial (Corrugated Aluminum)	.380	9.65	88	131	5.70	145
M58527**	25 PAIR 24 AWG Suitable for Burial (Corrugated Aluminum)	.730	18.54	300	446	11.00	280
LAN-Trak OSP Category 5							
M56871*	4 PAIR 24 AWG Outdoor Duct	.186	4.72	21	31	2.00	51
M57041*	4 PAIR 24 AWG Duct/Aerial Lashed	.236	5.99	29	43	2.50	61
M57042*	4 PAIR 24 AWG Suitable for Burial (Corrugated Aluminum)	.380	9.65	87	129	5.70	145
M57656**	25 PAIR 24 AWG Suitable for Burial (Corrugated Aluminum)	.730	18.54	300	446	11.00	280

*US Patent No. 5,424,491. **US Patent Nos. 5,424,491 & 5,821,466. ***US Patent Nos. 5,424,491, 6,074,503 & 6,496,944. **Standard put-up 1000 ft.**

For 4 pair colors see chart A; for 25 pair colors see chart D on page 50.

Special Applications
VersaLAN® CM & CMR/CMX Outdoor

Indoor/Outdoor Category 5e & 6 Cable



New to VersaLAN product family
VersaLAN CMR/CMX Outdoor cable is designed for residential LAN applications. The black PVC jacket resists cracking from long term UV exposure and the CMR listing allows the cable to be run between multiple floors within a building. The F/UTP design provides additional EMI/RFI isolation in electrically noisy environments. These designs are gel-free and are not intended for extended exposure to water.

Use VersaLAN CM if your application exposes the cables to water for extended periods. VersaLAN CM cable is made with fully water-blocked and waterproof construction containing the same soft semi-dry flooding material used in Mohawk's standard outside plant cable. VersaLAN CM is rated for general purpose communications use in accordance with Article 800 of the National Electrical Code (NEC). The cable is UL (USA) & c(UL) (CANADA) listed for this application by passing UL 1581 vertical tray flame test.

Mohawk's technology enables the cable to be run indoors with a CM UL listing and outdoors between buildings. The unique construction extends Ethernet networks into previously restricted ground. This product delivers in wet indoor locations where standard plenum or riser will fail.

This cable was designed for slab on grade installations and can be used indoors in wet locations or flood-prone areas. It is also suitable for outdoor use in duct and for aerial lashing. It is fully water-blocked and has a black sunlight-resistant jacket.

This product can be run directly to a single floor outlet floor application as opposed to standard outside plant cable which can only be brought indoors 50 feet. It is suitable for outdoor applications in addition to running inside a building. It is not suitable for direct burial.

VersaLAN products deliver 1 GbE to bandwidth requirements for evolving applications, such as enterprise data centers.

This product and/or its manufacture is covered by US Patent No. 5424491.

*These cables are approved by the American Bureau of Shipping (ABS). The ABS is an international classification society dedicated to developing and verifying standards for design, construction and maintenance of marine vessels. ABS approval offers excellence and safety standards for marine vessel products.

Mohawk Part No.	Cable Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km	Min. Bend Radius inch	Min. Bend Radius mm	Listings
M58772*	**Cat 6** 4 PAIR 23 AWG UTP	.271	6.88	46	68	2.75	70	C(UL)US CM-LS
M58762*	**Cat 5e** 4 PAIR 24 AWG UTP	.251	6.38	38	57	2.50	61	C(UL)US CM-LS
M58783*	**Cat 5e** 25 PAIR 24 AWG F/UTP	.730	18.54	332	494	11.0	279	C(UL)US CM-LS
M58926	**Cat 5e** 4 PAIR 24 AWG UTP	.23	5.84	28	12.7	2.3	58	CMR CMX Outdoor; CMR FT4
M58932	**Cat 5e** 4 PAIR 24 AWG AWG F/UTP w/drain	.265	6.73	36	16.3	2.7	67	CMR CMX Outdoor; CMR FT4

Special Applications

RG-6 Coax

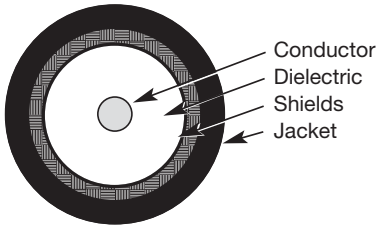
Coaxial Cables

These dual and quad shield plenum and non-plenum cables extend Mohawk's existing product offerings to include coax capabilities. RG-6 dual shield has a foil tape and aluminum braid and RG-6 quad shield consists of a foil/braid/foil/braid design. These cables include 18 AWG solid copper covered steel conductors.

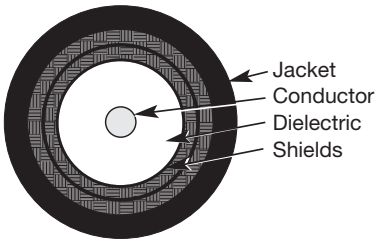
Applications

- Community Access Television Stations
- Closed Circuit Television
- Security Cameras and Security Sectors
- Broadband Cable Access Television & Video Cameras
- K-12 Education
- Healthcare

RG-6 Dual



RG-6 Quad



Plenum (White Jacket) NEC CATVP/CMP NFPA 262

Mohawk Part No.	Shield Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km	Min. Bend Radius inch	Min. Bend Radius mm	Max Pulling Tension (lbs)
M71002	DUAL Foil and 61% AL Braid	.235	6.0	36	53	2.5	63	126
M71003	QUAD Foil, 60% AL Braid Foil and 40% AL Braid	.273	6.9	45	67	2.75	69	134

Non-Plenum (Black Jacket) NEC CATV NEC Article 725

Mohawk Part No.	Shield Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km	Min. Bend Radius inch	Min. Bend Radius mm	Max Pulling Tension (lbs)
M71005	DUAL Foil and 61% AL Braid	.245	6.2	35	52	2.5	68	126
M71006	QUAD Foil, 60% AL Braid Foil and 40% AL Braid	.295	7.5	48	71	3.0	76	137

RoHS

Special Applications

RG-11 Coax

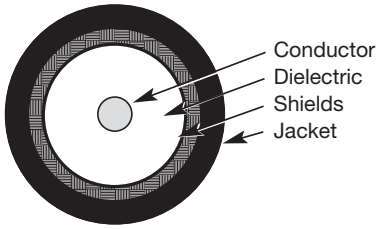
Coaxial Cables

These dual and quad shield plenum and non-plenum cables extend Mohawk's existing product offerings to include coax capabilities. RG-11 dual shield has a foil tape and aluminum braid and RG-11 quad shield consists of a foil/braid/foil/braid design. RG-11 cables offer a stronger signal, longer lengths and less loss than RG-6 cables for HDTV applications. These cables include 14 AWG solid copper conductors.

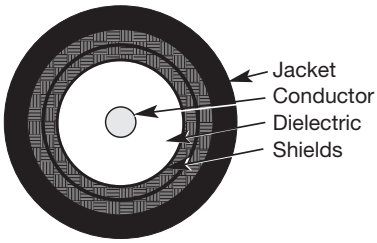
Applications

- Community Access Television Stations
- Closed Circuit Television
- Security Cameras and Security Sectors
- Broadband Cable Access Television & Video Cameras
- K-12 Education
- Healthcare

RG-11 Dual



RG-11 Quad



Plenum (White Jacket) NEC CATVP/CMP* or CATVP/CL2P** NFPA 262

Mohawk Part No.	Shield Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km	Min. Bend Radius inch	Min. Bend Radius mm	Max Pulling Tension (lbs)
M71001**	DUAL Foil and 65% AL Braid	.352	8.9	43	64	3.5	89	230
M71004*	QUAD Foil, 60% AL Braid Foil and 40% AL Braid	.385	9.8	55	82	3.8	95	260

Non-Plenum (Black Jacket) NEC CATV/CL2 NEC Article 725

Mohawk Part No.	Shield Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km	Min. Bend Radius inch	Min. Bend Radius mm	Max Pulling Tension (lbs)
M71007	DUAL Foil and 61% AL Braid	.405	10.3	52	77	4.0	101	250
M71008	QUAD Foil, 65% AL Braid Foil and 55% AL Braid	.415	10.5	59	88	4.1	108	315

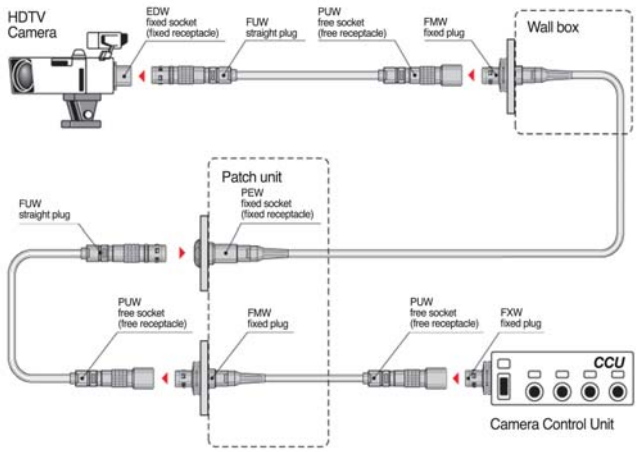
RoHS

Broadcast

Fiber Optic Camera Cable Assemblies

Mohawk offers broadcasters a complete end-to-end cabling solution for their HDTV infrastructure upgrades. Utilizing the highest quality Corning® Single-Mode optical fibers to transmit the uncompressed 1.5 gigabits per second, coupled with years of termination expertise, ensures optimal performance and repeatability.

Studio Configuration



- LEMO Push-Pull self-latching system for quick and easy mating
- Meets SMPTE 304M-1998
- Optimum sealing (IP 68) meeting the requirements of the IEC 60529 standard for safe outdoor applications
- Easily cleaned fiber optic contacts due to removable alignment sleeve
- Compact design with 2 fiber optic contacts, 2 power and 2 signal electrical contacts
- Return Loss (upc) > 45 dB
- Rugged stainless steel outer shell
- Contact Mohawk for other LEMO broadcast connectors and pre-terminated options

Fiber Optic Connectors for HDTV Cameras

Mohawk offers a complete line of Hybrid Optical Fiber camera cables which comply to the SMTPE 311M specification.

Mohawk has over 12 years of experience terminating LEMO 304M connectors. Our factory polished and terminated assemblies ensure superior performance and durability. These assemblies provide unlimited bandwidth, exceptional digital distance transmission and noise immunity in any HDTV or SD camera system. Standard on every assembly is a high performance LEMO solid stainless steel shell and full-length rubber protective boot with end cap, ensuring that cable and connector get the “shot” done.

Breakout Jumpers & Patch Panels

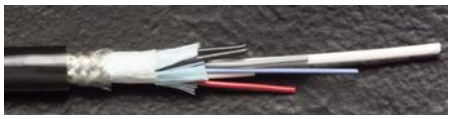
Mohawk provides an easy solution to expensive on-site LEMO terminations. Utilizing custom-made LEMO to industry standard fiber connector types (ST, FC, SC) and multi-pin crimp on copper connectors, customers and integrators can quickly and inexpensively re-cable their studios, mobile trucks or stadiums with ease.

Broadcast

Fiber Optic Camera Cables

Meets SMPTE Standard for Hybrid Electrical and Fiber Optical Camera Cable

Product Description – These special fiber/copper composite cables consist of two tight buffered, Single-Mode optical fibers, four 20 AWG (19x32) and two 24 AWG (7x32) tinned copper conductors, insulated with PE. These are cabled around a jacketed stranded steel strength element, with an overall tinned copper braid, 80% min. coverage, and a black Dura-Flex jacket. These cables are compliant with SMPTE 311M and UL recognized type AWM, 300 volt rating.

	Mohawk Part Number	Nominal OD inch	Nominal OD mm	Weight lbs/M'	Weight kg/km	Min. Bend Radius inch	Min. Bend Radius cm	Max Load (Installation) lbs	Max Load (Installation) Newtons	Optical Attenuation dB/km*	Jacket
Studio Light Duty 	M96040	.362	9.2	76	113	2.5	6.0	160	710	0.80 Max	Thermo-Plastic Elastomer
Harsh Environment Outdoor Cable 	M96818	.362	9.2	81	121	2.5	6.0	160	710	0.80 Max	Poly-urethane
Riser rated 9.2mm & Breakout Style 	M96921	.362	9.2	89	132	2.5	6.0	160	710	0.80 Max	UL type CMR-OF Listing
	M96825	.406	10.3	110	163	3.25	8.3	160	710	0.80 Max	
12mm Double Jacket 	M97938	.472	12	110	163	3.25	8.3	160	710	0.80 Max	Thermo-Plastic Elastomer
Plenum rated & Breakout Style 	M96920	.294	7.47	69	102	2.5	6.0	160	710	0.80 Max	PVDF Copolymer UL type CMP-OF Listing
	M92924	.256	6.50	61	91	2.5	6.0	160	710	0.80 Max	
Stedicam / Patch† 	M97176	.166	4.2	18	27	1.0	4.3	80	355	0.80 Max	PVC
Stadium† 	M97673	.525	13.34	135	201	3.5	8.9	160	710	0.80 Max	PVC UL type CMR-OF

*At 1310 nm †Contact Mohawk for fiber count and copper size/count. Not 311M Compliant.

Specialty riser and plenum rated versions available for permanent installations.
For use with SMPTE standard 304M video connectors, manufactured by LEMO.

RoHS

Broadcast

Video Triaxial Cables

Mohawk's video triaxial cables are used to interconnect video cameras to related equipment. Triaxial cables are constructed with a solid or stranded center conductor and two isolated shields. The center conductor and the inner isolated shield make up a coaxial cable configuration that functions to carry the video signal. The outer isolated shield can be used for several separate signals by means of multiplexing that may include teleprompter feeds and control for automation such as robotics.

We offer both RG/U types of triaxial cable. The standard sizes include RG59/U and RG11/U types. The RG59/U is the smaller of the two and is generally more flexible. RG11/U has lower attenuation values that will allow longer cable runs. Both cables may be used with various OEM's Triax Adapter Systems for SD/HD transmission. The Mohawk Dura-Flex jacket was developed to enhance flexibility and provide excellent protection through a wide range of temperatures.

1/2" & 3/8" Triaxial Cable Assemblies

All assemblies are available in custom lengths. We offer industry standard Kings Tri-Lock® connectors as well as Fischer and LEMO triax connectors.

RG/U Type Video Triaxial Cables

Mohawk Part Number	AWG (stranding) Nom DCR	Dielectric Type Nominal OD inch	Dielectric Type Nominal OD mm	Shield Type	Nominal OD inch	Nominal OD mm	Nom Imp ohms	Nominal Capacitance pF/ft	Nominal Capacitance pF/m	Nom Attenuation freq MHz	Nom Attenuation dB/ 100 ft	Nom Attenuation dB/ 100m	Weight lbs/ M'	Weight kg/ km	Suggested Connector & Tooling
M80248 UL AWM/10296 3/8" Triax RG-59/U Type	20 (Solid) .032 Bare Copper 10.1 Ω/M' 33.1 Ω/km	Cellular Polyethylene .146	3.71	2 BC - Inner 2.5 Ω/M' 8.3 Ω/km Outer 1.6 Ω/M' 5.3 Ω/km 95% Shield Coverage	.355	9.02	75	16.2	53.2	1 10 71.5 135 270 360 540 720 1000	.3 .8 2.2 3.0 4.2 4.8 5.9 6.9 8.8	.98 2.62 7.22 9.84 13.78 15.75 19.36 22.64 28.87	85	126	*Connector:* Kings Female 7703-2 Kings Male 7705-2 *Tooling:* Kings KTH-1000 Tool Kings KTH-2002 Die
				Polyethylene Insulation Between Braids Black Dura-Flex jacket 100% Sweep Tested 5-850 MHz Min. SRL 21 dB										
M52479 UL AWM/10296 1/2" Triax RG-11/U Type	14 (19x27) .064 Bare Copper 3.1 Ω/M' 10.2 Ω/km	Cellular Polyethylene .312	7.92	2 BC - Inner 1.8 Ω/M' 5.9 Ω/km Outer 1.4 Ω/M' 4.6 Ω/km 95% Shield Coverage	.510	12.95	75	17.3	56.8	1 10 71.5 135 270 360 540 720 1000	.14 .50 1.20 1.80 2.60 3.10 3.90 4.70 5.70	.46 1.64 3.94 5.91 8.53 10.17 12.80 15.42 18.70	158	235	*Connector:* Kings Female 7703-3 Kings Male 7705-3 *Tooling:* Kings KTH-1000 Tool Kings KTH-2041 Die
				Polyethylene Insulation Between Braids Black Dura-Flex jacket 100% Sweep Tested 5-850 MHz Min. SRL 21 dB										

The above cables are available as assemblies using Kings, Fischer and LEMO Connectors. Kings are also available with protective full-body boots.

Water-Resistant Video Triaxial Cables and Triax Rubber Boot

This cable is a broadcast quality triaxial cable which is specially manufactured to provide moisture protection. This cable has a dual braid shield configuration separated by an inner polyolefin belt. An overall jacket of Dura-Flex provides excellent physical and mechanical properties. Offered in both 3/8" and 1/2" size.

These special triax boots are available on our assemblies to protect the connectors against handling and weather.

Broadcast

Multicore Assemblies/Repair Services

Multicore Assemblies

Mohawk is an approved source of camera cable assemblies for the major manufacturers of professional camera systems. We use only the highest quality components, from the highest quality connectors to the tightly specified coaxial and interconnect transmission lines that make up our UL listed cable.

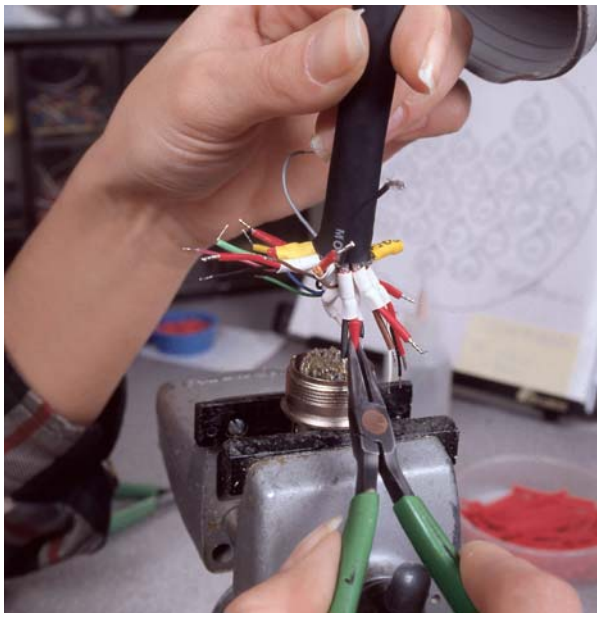
Types of assemblies offered:

Manufacturer	Manufacturer's Part #	Description
Sony	CCZAD	26 pin Digital
Sony	CCZA	26 pin Analog
Sony	CCA7	10 pin
Sony	CCA5	8 pin
Sony	CCQ-AM	14 pin to 14 pin
Sony	VDC-C	12 pin
Ikegami	MCC	26 pin
Ikegami	CP	8 pin
Hitachi	KAB	26 pin
Hitachi	KR	28 pin
JVC	VCP	26 pin
Panasonic	WVCA26U	26 pin

Custom Lengths Available

Repair Services

Mohawk offers quality and innovation in our repair service facility. We can repair many types of cables, including hybrid fiber optic assemblies and the various multicore assemblies, no matter who the manufacturer. We can diagnose the problem and offer a solution at a competitive cost.



Fiber Optic Cables

Mohawk's Range of Fiber Optic Cables for Gigabit Applications

Mohawk has been manufacturing and testing fiber optic cable in accordance with many industry standards, including Telcordia, RUS and TIA/EIA, since 1990. Cables are listed by Underwriters Laboratories (UL) for compliance with the National Electrical Code and Canadian Electrical Code.

Cables are available with fiber counts ranging from 1 to 216 in multimode, single-mode or hybrid versions. They are compatible with all major manufacturers' connectivity hardware, including LID fusion splicers.

Mohawk's ISO 9001 registration assures our customers of consistent quality. Also, by working closely with customers, vendors, and industry organizations, Mohawk can help determine the best solution for a given application.

Cables feature fiber that is optimized for laser-based protocols, yet these cables are still compatible with LED systems. They provide guaranteed link lengths to handle multi-gigabit transmission while maintaining full compatibility with existing installed FDDI-grade cable.

Optical Characteristics

Meets or exceeds ISO/IEC 11801	OM1	OM1	OM2	OM3	OM4	OS2
Grade	**2**	**3**	**4**	**5**	**6**	**SM**
Glass Type	62.5/125 MM	62.5/125 MM	50/125 MM	50/125 MM	50/125 MM	Single-Mode Enhanced[6]
Part Number Code (X)	B	D	A	C	E	W
Operating Wavelength (nm)	850/1300	850/1300	850/1300	850/1300	850/1300	1310/1550
Min. OFL[1] Bandwidth (MHz-km)	200/500	200/500	500/500	1500/500	3000/500	—
Min. Laser[2] Bandwidth (MHz-km)	220/500	385/500	510/500	2000/500	4700/500	—
Max. Attenuation Loose Tube (dB/km)	3.25/1.0	3.25/1.0	3.0/1.0	3.0/1.0	3.0/1.0	0.40/0.30
Max. Attenuation Tight Buffered[3] (dB/km)	3.50/1.25	3.50/1.25	3.50/1.25	3.50/1.25	3.50/1.25	0.80/0.50
100 Mbit Fast Ethernet Min. Link Length (meters S/L/E[4])	300/2000	300/2000	300/2000	300/2000	300/2000	5000/—
1 Gigabit Ethernet Min. Link Length (meters S/L/E[4])	300/550	500/1000	600/600	1000[5]/600	1000[5]/600	5000/—
10 Gigabit Ethernet Min. Link Length (meters S/L/E[4])	33/300	33/300	150/300	300/300	550/300	10,000/ 40,000

[1] OFL – Overfilled Launch

[2] Effective Modal Bandwidth, determined by RML or DMD performance specifications

[3] Max. Attenuation for Tight Buffered, Ribbon & VersaLite Cables

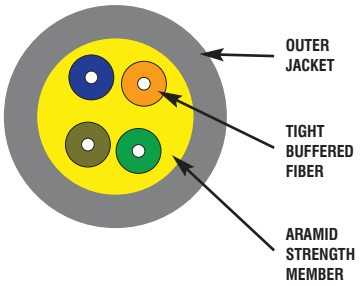
[4] S/L/E – Short wavelength (850 nm) / Long wavelength (1310 nm) / Extra long wavelength (1550 nm)

[5] >2000 meters for engineered links

[6] Low water peak Single-Mode suitable for CWDM use complies with ITU G.652.c/d

Tactical Cables

Fiber Optic Tactical Cables



Recommended Applications

- Re-deployable audio/video communications
- ENG vehicles
- Military communications
- Mining and industrial applications
- Outdoor sporting, news or other broadcast events

Product Features

- Rugged jacket
- Durable design for repeated deployment
- Designed to military standards
- Superior level of crush resistance
- Small and lightweight

Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	440 N/cm
• Impact Resistance	(EIA-455-25)	200 Impacts w/2.2 N-m
• Flexure	(EIA-455-104)	2000 Cycles min.
• Min. Bend Radius	Long Term – No Load	8x Cable diameter
• Min. Bend Radius	Short Term – Load	15x Cable diameter
• Operating Temp.	(EIA-455-3)	–55°C to +85°C
• Storage Temp.	(EIA-455-3)	–70°C to +85°C

Single-Mode

Part Number	Fiber Count	Nominal OD		Weight		Min. Bend Radius				Max. Load (Installation)	
						Short Term		Long Term			
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M96566	2	5.3	.210	28	19	8.3	3.2	4.3	1.7	1468	330
M96639	4	5.7	.225	28	19	8.6	3.4	4.6	1.8	1468	330
M96567	6	6.1	.240	36	24	9.1	3.6	4.8	1.9	1468	330
M96568	8	6.3	.250	39	26	9.7	3.8	6.4	2.5	1468	330
M96569	10	6.7	.265	42	28	10.2	4.0	6.9	2.7	1468	330
M96570	12	6.7	.265	36	24	9.7	3.8	5.1	2.0	1468	330

Multimode (62.5/125 Grade 2)

Part Number	Fiber Count	Nominal OD		Weight		Min. Bend Radius				Max. Load (Installation)	
						Short Term		Long Term			
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M96571	2	5.3	.210	28	19	8.3	3.2	4.3	1.7	1468	330
M96551	4	5.7	.225	28	19	8.6	3.4	4.6	1.8	1468	330
M96572	6	6.1	.240	36	24	9.1	3.6	4.8	1.9	1468	330
M96573	8	6.3	.250	39	26	9.7	3.8	6.4	2.5	1468	330
M96574	10	6.7	.265	42	28	10.2	4.0	6.9	2.7	1468	330
M96575	12	6.7	.265	36	24	9.7	3.8	5.1	2.0	1468	330

Additional optical fiber versions also available – contact factory.

See optical characteristics on page 30.

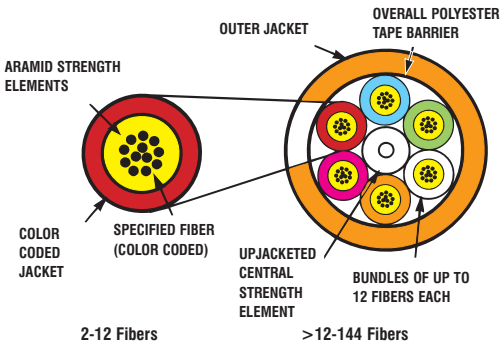
For buffer colors see chart C on page 50.

RoHS

Riser Distribution

Riser UL/cUL Type OFNR/OFN FT4

FIBER BUNDLE DETAIL



Recommended Applications

- Intrabuilding backbone cabling
- Work area cabling
- Computer room cabling

Product Features

- 900 μm tight buffered fibers
- Color coded for easy termination
- UV and Flame Retardant
- UL listed for code compliance
- MSHA approved cables are available
- LSZH cables are also available

Mechanical, Environmental & Flame Characteristics

• Crush Resistance	(EIA-455-41)	220 N/cm
• Impact Resistance	(EIA-455-25)	200 Impacts w/1.6 N-m
• Flexure	(EIA-455-104)	2000 cycles min.
• Min. Bend Radius	Long Term – No Load	10x Cable diameter
• Min. Bend Radius	Short Term – Load	15x Cable diameter
• Operating Temp.	–	–20°C to +70°C
• Installation Temp.	–	–10°C to +60°C
• Storage Temp.	–	–40°C to +80°C
• UL/cUL Rated	Type OFNR / OFN FT4	
• Flame Resistance	UL 1666	Passed

RoHS

Part Number	Fiber Count	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X037	2	4.67	.184	19	13	7.0	2.8	4.7	1.8	801	180
M9X038	4	5.08	.200	24	16	7.6	3.0	5.1	2.0	867	195
M9X039	6	5.59	.220	28	19	8.4	3.3	5.6	2.2	1201	270
M9X040	8	5.97	.235	33	22	8.9	3.5	6.1	2.4	1201	270
M9X042	12	6.48	.255	40	27	9.6	3.8	6.6	2.6	1334	300
M9X601*	24	8.26	.325	63	42	12.4	4.9	8.4	3.3	1735	390
M9X602	24	12.60	.496	124	83	18.8	7.4	12.7	5.0	4270	960
M9X604	36	16.36	.644	204	137	24.6	9.7	16.5	6.4	6405	1440
M9X606	48	15.93	.627	195	131	23.9	9.4	16.0	6.3	4203	945
M9X609	72	19.10	.750	290	195	28.6	11.3	19.1	7.5	6005	1350
M9X622	96	22.73	.895	432	290	34.0	13.4	22.9	9.0	8820	1983
M9X619	144	24.49	.964	467	314	36.8	14.5	24.4	9.6	12,210	2745

For "X" in part number see optical characteristics on page 30. *Single jacket version.

For buffer and inner jacket colors see chart C on page 50.

Plenum Distribution

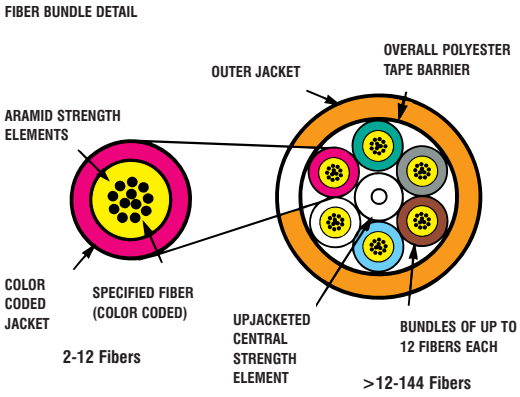
Plenum UL/cUL Type OFNP/OFN FT6

Recommended Applications

- Intrabuilding backbone cabling
- Work area cabling
- Computer room cabling

Product Features

- 900 μm tight buffered fibers
- Color coded for easy termination
- Flame Retardant
- UL listed for code compliance



Mechanical, Environmental & Flame Characteristics

• Crush Resistance	(EIA-455-41)	220 N/cm
• Impact Resistance	(EIA-455-25)	200 Impacts w/1.6 N-m
• Flexure	(EIA-455-104)	2000 cycles min.
• Min. Bend Radius	Long Term – No Load	10x Cable diameter
• Min. Bend Radius	Short Term – Load	15x Cable diameter
• Operating Temp.	–	–20°C to +70°C
• Installation Temp.	–	0°C to +60°C
• Storage Temp.	–	–40°C to +80°C
• UL/cUL Rated	Type OFNP / OFN FT6	
• Flame Resistance	UL 910	Passed

Part Number	Fiber Count	Outside Diameter		Weight		Min. Bend Radius				Max. Load (Installation)	
						Short Term		Long Term			
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X043	2	4.67	.184	21	14	7.0	2.8	4.7	1.8	801	180
M9X044	4	4.42	.174	19	13	7.0	2.8	4.7	1.8	867	195
M9X045	6	4.83	.190	24	16	7.6	3.0	5.1	2.0	1201	270
M9X046	8	5.64	.222	28	19	8.5	3.3	5.6	2.2	1201	270
M9X048	12	5.72	.225	33	22	8.6	3.4	5.8	2.3	1334	300
M9X611*	24	8.38	.330	60	40	12.4	4.9	8.4	3.3	1735	390
M9X612	24	11.56	.455	125	84	17.3	6.8	11.7	4.6	5618	1263
M9X614	36	15.09	.594	199	134	22.6	8.9	15.0	5.9	8509	1913
M9X616	48	15.21	.599	195	131	22.9	9.0	15.2	6.0	5538	1245
M9X620	72	19.15	.754	293	197	28.7	11.3	19.1	7.5	9310	2093
M9X623	96	22.96	.904	478	321	34.5	13.6	22.9	9.0	10,422	2343
M9X621	144	26.49	1.043	561	377	39.9	15.7	26.7	10.5	16,213	3645

For "X" in part number see optical characteristics on page 30. *Single jacket version.

For buffer and inner jacket colors see chart C on page 50.

RoHS

Riser & Plenum
VersaLite TBF™

Tight Buffer Distribution

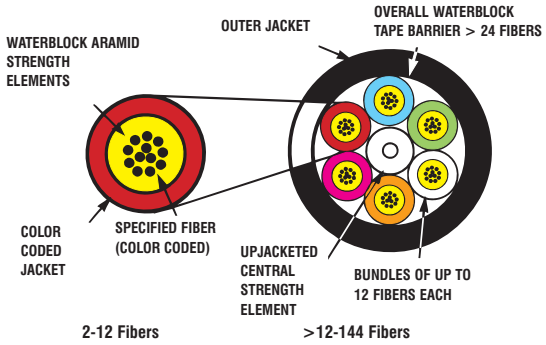
MOHAWK FIBER PRODUCTS

Indoor/Outdoor
Riser UL/cUL Type OFNR/OFN FT4
Plenum UL/cUL Type OFNP/OFN FT6

Recommended Applications
- Campus backbones
- Interbuilding installations
- Data centers
- Ducts between buildings

Product Features
- 900 μm tight buffered 2 to 144 fiber cables
- Fibers and sub-units are color coded for ease of identification
- Fully water-blocked for outdoor applications
- Durable flame-retardant and UV-resistant black outer jacket
- UL Riser & Plenum rated OFNR/OFNP for versatile use
- Meets ICEA S-104-696 test criteria
- No breakout kits required for terminations

FIBER BUNDLE DETAIL



Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	220 N/cm
• Impact Resistance	(EIA-455-25)	200 Impacts w/1.6 N-m
• Flexure	(EIA-455-104)	2000 Cycles min.
• Water Pen. Test	(EIA-455-82)	Passed
• Min. Bend Radius	Long Term – No Load	10x Cable diameter
• Min. Bend Radius	Short Term – Load	15x Cable diameter
• Operating Temp.	–	–40°C to +70°C
• Installation Temp.	–	–10°C to +60°C (Riser) 0°C to +60°C (Plenum)
• Storage Temp.	–	–40°C to +80°C
• UL/cUL Rated	Type OFNR/OFN FT4 (Riser) Type OFNP/OFN FT6 (Plenum)	
• Flame Resistance	UL 1666 (Riser) UL 910 (Plenum)	Passed Passed

RoHS

Riser

Part Number	Fiber Count	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X039T	6	5.59	.220	28	19	8.4	3.3	5.6	2.2	1334	300
M9X042T	12	6.48	.255	40	27	9.6	3.8	6.6	2.6	1334	300
M9X601T*	24	8.26	.325	63	42	12.4	4.9	8.4	3.3	2700	600
M9X604T	36	16.64	.655	210	141	25.0	9.8	16.6	6.6	2700	600
M9X606T	48	16.21	.638	195	131	24.3	9.6	16.2	6.4	2700	600

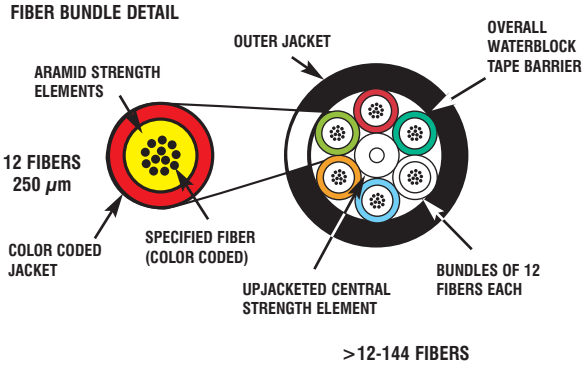
Plenum

Part Number	Fiber Count	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X045T	6	4.83	.190	24	16	7.6	3.0	5.1	2.0	1334	300
M9X048T	12	5.72	.225	33	22	8.6	3.4	5.8	2.3	1334	300
M9X611T*	24	8.38	.330	60	40	12.4	4.9	8.4	3.3	2700	600
M9X614T	36	15.37	.605	201	135	23.1	9.1	15.4	6.1	2700	600
M9X616T	48	15.49	.610	195	132	23.2	9.2	15.5	6.1	2700	600

For "X" in part number see optical characteristics on page 30. *Single jacket version.

Plenum VersaLite®

Indoor/Outdoor
UL/cUL Type OFNP/OFN FT6



Recommended Applications
- Campus backbones
- Interbuilding installations
- Data centers
- High density cable trays
- Ducts between buildings

Product Features
- 2 to 144 fiber
- Loose Tube sub-units
- Small diameter and bend radius facilitate installation in tight spaces
- Fibers and sub-units are color coded for ease of identification
- All-dielectric construction eliminates the need for grounding
- Fibers grouped into sets of 12 for maximum density

Options
- Available in 50 µm, 62.5 µm, single-mode, and hybrid constructions
- Available in colored jackets for indoor only installations
- Available with Interlock Armor

Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	250 N/cm
• Impact Resistance	(EIA-455-25)	200 Impacts w/1.6 N-m
• Flexure	(EIA-455-104)	2000 Cycles min.
• Min. Bend Radius	Long Term – No Load	15x Cable diameter
• Min. Bend Radius	Short Term – Load	20x Cable diameter
• Operating Temp.	–	–40°C to +70°C
• Installation Temp.	–	0°C to +60°C
• Storage Temp.	–	–40°C to +80°C

Part Number	Fiber Count	Fibers Per Tube	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
			mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X202	6	6	6.7	.265	49	33	13.5	5.3	10.2	4.0	1423	320
M9X204	12	12	6.7	.265	49	33	13.5	5.3	10.2	4.0	1423	320
M9X205	24	12	9.12	.359	70	47	18.3	7.2	13.7	5.4	1801	405
M9X206	36	12	9.12	.359	70	47	18.3	7.2	13.7	5.4	1801	405
M9X207	48	12	9.12	.359	71	48	18.3	7.2	13.7	5.4	1801	405
M9X209	72	12	10.9	.429	107	72	21.8	8.6	16.3	6.4	3216	723
M9X211	96	12	12.73	.501	152	102	25.4	10.0	19.1	7.5	4017	903
M9X215	144	12	16.89	.665	284	191	33.8	13.3	25.4	10.0	5618	1263

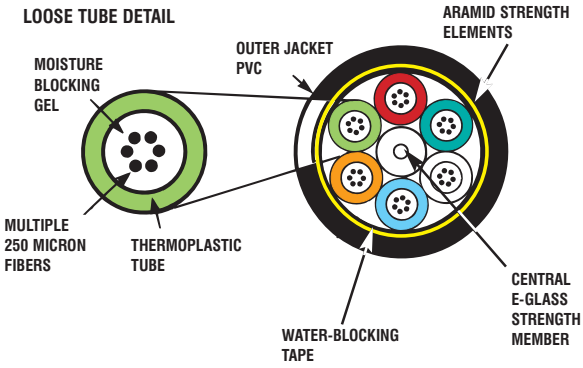
For "X" in part number see optical characteristics on page 30.

See color chart C on page 50.

RoHS

Loose Tube RiserLite®

Indoor/Outdoor
UL/cUL Type OFNR/OFN FT4



Recommended Applications

- Indoor/outdoor installations
- Telecommunications and data trunk
- Building interconnections
- Ducts between buildings

Product Features

- No splicing required at building entrance
- Available with zero-halogen jacket
- Breakout kits available (see page 43)
- Fully water-blocked

Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	2000 N/cm
• Impact Resistance	(EIA-455-25)	2000 Impacts w/1.6 N-m
• Min. Bend Radius	Long Term – No Load	15x Cable diameter
• Min. Bend Radius	Short Term – Load	20x Cable diameter
• Operating Temp.	–	–40°C to +70°C
• Installation Temp.	–	–20°C to +60°C
• Storage Temp.	–	–40°C to +80°C
• UL/cUL Rated	Type OFNR / OFN FT4	
• Flame Resistance	UL 1666	Passed

Part Number	Fiber Count	Fibers Per Tube	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
			mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X810	6	6	9.65	.380	94	63	19.3	7.6	14.5	5.7	2700	600
M9X811	12	6	9.65	.380	92	62	19.3	7.6	14.5	5.7	2700	600
M9X812	24	6	9.65	.380	91	61	19.3	7.6	14.5	5.7	2700	600
M9X813	36	6	9.65	.380	89	60	19.3	7.6	14.5	5.7	2700	600
M9X814	48	12	12.19	.480	132	89	24.4	9.6	18.3	7.2	2700	600
M9X815	72	12	12.19	.480	129	87	24.4	9.6	18.3	7.2	2700	600
M9X816	96	12	13.89	.547	170	114	27.7	10.9	20.8	8.2	2700	600
M9X817	144	12	17.78	.700	278	187	35.6	14.0	26.7	10.5	2700	600

For "X" in part number see optical characteristics on page 30.

See color chart C on page 50.

RoHS

Loose Tube RiserLite®

Indoor/Outdoor Direct Burial/Armored UL/cUL Type OFCR/OFC FT4

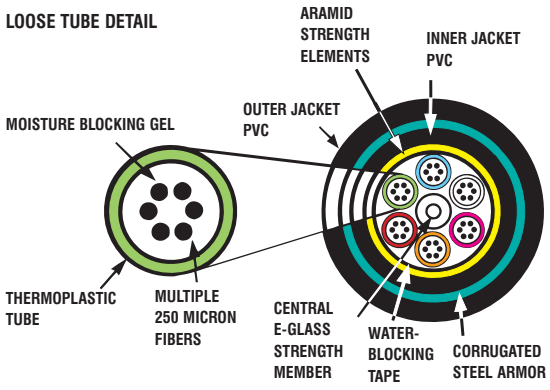
Recommended Applications

- Indoor/outdoor building interconnections
- Telecommunications and data trunk
- Long haul networking
- Direct burial and aerial lashing

Product Features

- No splicing required at building entrance
- Available with zero-halogen jacket
- Breakout kits available (see page 43)
- Fully water-blocked

LOOSE TUBE DETAIL



Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	2000 N/cm
• Impact Resistance	(EIA-455-25)	2000 Impacts w/1.6 N-m
• Min. Bend Radius	Long Term – No Load	15x Cable diameter
• Min. Bend Radius	Short Term – Load	20x Cable diameter
• Operating Temp.	–	–40°C to +70°C
• Installation Temp.	–	–20°C to +60°C
• Storage Temp.	–	–40°C to +80°C
• UL/cUL Rated	Type OFCR / OFC FT4	
• Flame Resistance	1666	Passed

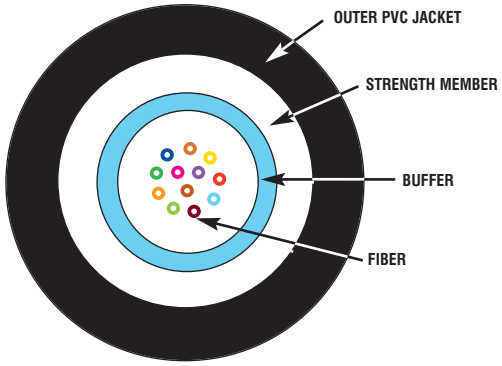
Part Number	Fiber Count	Fibers Per Tube	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
			mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X890	6	6	13.72	.540	205	138	27.4	10.8	20.6	8.1	2700	600
M9X891	12	6	13.72	.540	204	137	27.4	10.8	20.6	8.1	2700	600
M9X892	24	6	13.72	.540	202	136	27.4	10.8	20.6	8.1	2700	600
M9X893	36	6	13.72	.540	201	135	27.4	10.8	20.6	8.1	2700	600
M9X894	48	12	16.76	.660	262	176	33.5	13.2	25.1	9.9	2700	600
M9X895	72	12	16.76	.660	256	172	33.5	13.2	25.1	9.9	2700	600
M9X896	96	12	17.78	.700	307	206	35.6	14.0	26.7	10.5	2700	600
M9X897	144	12	22.35	.880	449	302	44.7	17.6	33.5	13.2	2700	600

For "X" in part number see optical characteristics on page 30.

See color chart C on page 50.

RoHS

Central Loose Tube RiserLite®



Recommended Applications

- Indoor/outdoor installations
- Telecommunications and data trunk
- Building interconnections
- Ducts between buildings
- Drop cable

Product Features

- No splicing required at building entrance
- Available with zero-halogen jacket
- Breakout kits available (see page 43)
- Fully water-blocked
- Economical option for low fiber counts

Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	250 N/cm
• Impact Resistance	(EIA-455-25)	2000 Impacts w/1.6 N-m
• Min. Bend Radius	Long Term – No Load	15x Cable diameter
• Min. Bend Radius	Short Term – Load	20x Cable diameter
• Operating Temp.	–	–40°C to +70°C
• Installation Temp.	–	–20°C to +60°C
• Storage Temp.	–	–40°C to +80°C
• UL/cUL Rated	Type OFNR / OFN FT4	
• Flame Resistance	UL 1666	Passed

Part Number	Fiber Count	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X802	2	7.36	.290	57	38	14.7	5.8	11.2	4.4	2700	600
M9X803	4	7.36	.290	57	38	14.7	5.8	11.2	4.4	2700	600
M9X804	6	7.36	.290	57	38	14.7	5.8	11.2	4.4	2700	600
M9X805	8	7.36	.290	57	38	14.7	5.8	11.2	4.4	2700	600
M9X806	12	7.36	.290	57	38	14.7	5.8	11.2	4.4	2700	600

For "X" in part number see optical characteristics on page 30.

See color chart C on page 50.

Central loose tube is available up to 24 fibers.

RoHS

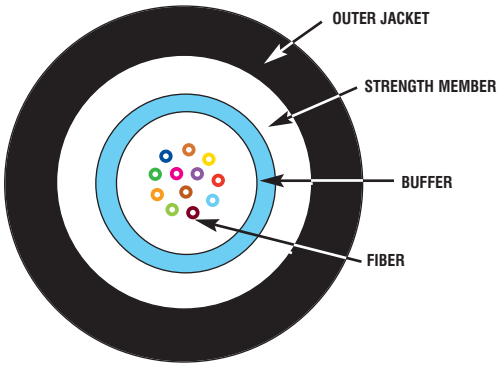
Central Loose Tube **Outdoor**

Recommended Applications

- Campus OSP backbones
- Drop cable
- Telecommunications and data trunk

Product Features

- Economical option for low fiber counts
- Quick and easy end preparation
- Fully water-blocked
- No rods – easy handling



Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	250 N/cm
• Impact Resistance	(EIA-455-25)	2000 Impacts w/1.6 N-m
• Min. Bend Radius	Long Term	15x Cable
• Min. Bend Radius	Short Term	20x Cable
• Operating Temp.	–	–40°C to +70°C
• Installation Temp.	–	–30°C to +60°C
• Storage Temp.	–	–40°C to +70°C

Outdoor

Part Number	Fiber Count	Outside Diameter		Weight		Min. Bend Radius				Max. Load (Installation)	
						Short Term		Long Term			
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X150	2	8.00	.315	49	33	16.0	6.3	11.9	4.7	2700	600
M9X151	4	8.00	.315	49	33	16.0	6.3	11.9	4.7	2700	600
M9X152	6	8.00	.315	49	33	16.0	6.3	11.9	4.7	2700	600
M9X153	8	8.00	.315	49	33	16.0	6.3	11.9	4.7	2700	600
M9X154	10	8.00	.315	49	33	16.0	6.3	11.9	4.7	2700	600
M9X155	12	8.00	.315	49	33	16.0	6.3	11.9	4.7	2700	600

Outdoor Armored

Part Number	Fiber Count	Outside Diameter		Weight		Min. Bend Radius				Max. Load (Installation)	
						Short Term		Long Term			
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X170	2	10.41	.410	101	68	20.8	8.2	15.6	6.15	2700	600
M9X171	4	10.41	.410	101	68	20.8	8.2	15.6	6.15	2700	600
M9X172	6	10.41	.410	101	68	20.8	8.2	15.6	6.15	2700	600
M9X173	8	10.41	.410	101	68	20.8	8.2	15.6	6.15	2700	600
M9X174	10	10.41	.410	101	68	20.8	8.2	15.6	6.15	2700	600
M9X175	12	10.41	.410	101	68	20.8	8.2	15.6	6.15	2700	600

For "X" in part number see optical characteristics on page 30.

See color chart C on page 50.

Central loose tube is available up to 24 fibers.

RoHS

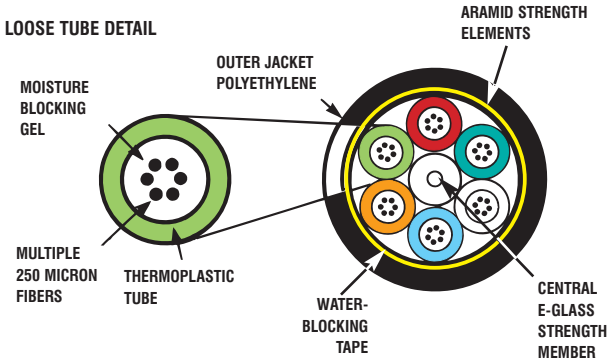
Outdoor
Loose Tube

Recommended Applications

- Building interconnections and data trunk
- Long haul networking
- Ducts between buildings and aerial lashing
- Applications requiring good ozone, moisture, weather resistance

Product Features

- All dielectric central strength member
- Excellent attenuation performance
- Dry water-blocking for moisture protection
- Polyethylene jacket for weather and UV protection
- Breakout kits available (see page 43)
- Water-block gel available in lieu of tape



Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	2000 N/cm
• Impact Resistance	(EIA-455-25)	2000 Impacts w/1.6 N-m
• Min. Bend Radius	Long Term – No Load	15x Cable diameter
• Min. Bend Radius	Short Term – Load	20x Cable diameter
• Operating Temp.	–	–40°C to +70°C
• Installation Temp.	–	–30°C to +60°C
• Storage Temp.	–	–50°C to +80°C

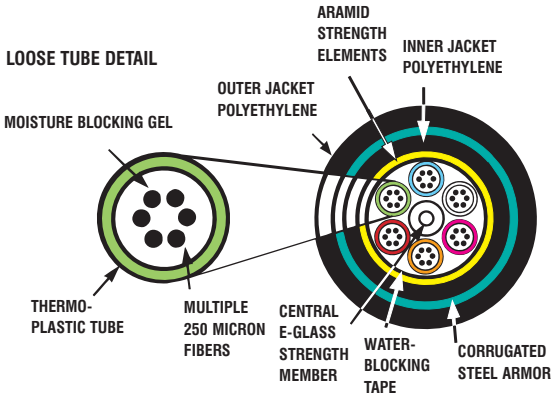
Part Number	Fiber Count	Fibers Per Tube	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
			mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X510T	6	6	9.14	.360	65	44	19.3	7.6	14.5	5.7	2700	600
M9X511T	12	6	9.14	.360	65	44	19.3	7.6	14.5	5.7	2700	600
M9X500T	24	6	9.14	.360	67	45	19.3	7.6	14.5	5.7	2700	600
M9X502T	36	6	9.14	.360	70	47	19.3	7.6	14.5	5.7	2700	600
M9X505T	48	12	11.68	.460	104	70	24.4	9.6	18.3	7.2	2700	600
M9X507T	72	12	11.68	.460	104	70	24.4	9.6	18.3	7.2	2700	600
M9X513T	96	12	13.39	.527	138	93	27.7	10.9	20.8	8.1	2700	600
M9X509T	144	12	17.27	.680	222	149	35.6	14.0	26.7	10.5	2700	600
M9X520T	216	12	17.65	.695	220	148	36.3	14.3	27.2	10.7	2700	600

For "X" in part number see optical characteristics on page 30.

See color chart C on page 50.

Armored Loose Tube

Outdoor Direct Burial – Armored



Recommended Applications

- Building interconnections
- Telecommunications and data trunk
- Long haul networking
- Direct burial and aerial lashing
- Applications requiring good ozone, moisture, weather resistance

Product Features

- Excellent attenuation performance
- Dry water-blocking for moisture protection
- Polyethylene jacket for weather and UV protection
- Breakout kits available (see page 43)
- Corrugated steel tape
- Rodent resistant
- Waterblock gel available in lieu of tape

Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	2000 N/cm
• Impact Resistance	(EIA-455-25)	2000 Impacts w/1.6 N-m
• Min. Bend Radius	Long Term – No Load	15x Cable diameter
• Min. Bend Radius	Short Term – Load	20x Cable diameter
• Operating Temp.	–	–40°C to +70°C
• Installation Temp.	–	–30°C to +60°C
• Storage Temp.	–	–50°C to +80°C

Part Number	Fiber Count	Fibers Per Tube	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
			mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X381T	6	6	13.46	.530	150	101	26.9	10.6	20.2	8.0	2700	600
M9X382T	12	6	13.46	.530	152	102	26.9	10.6	20.2	8.0	2700	600
M9X384T	24	6	13.46	.530	153	103	26.9	10.6	20.2	8.0	2700	600
M9X386T	36	6	13.46	.530	155	104	26.9	10.6	20.2	8.0	2700	600
M9X389T	48	12	16.51	.650	214	144	33.0	13.0	24.9	9.8	2700	600
M9X391T	72	12	16.51	.650	211	142	33.0	13.0	24.9	9.8	2700	600
M9X398T	96	12	17.53	.690	250	168	35.1	13.8	26.4	10.4	2700	600
M9X393T	144	12	22.10	.870	359	241	44.2	17.4	33.3	13.1	2700	600
M9X400T	216	12	22.10	.870	359	241	44.2	17.4	33.3	13.1	2700	600

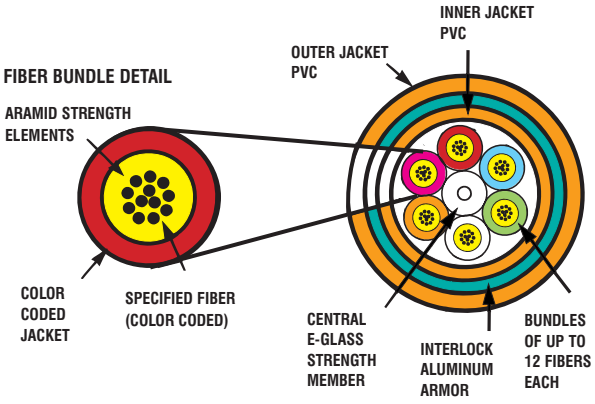
For "X" in part number see optical characteristics on page 30.

See color chart C on page 50.

RoHS

ArmorLite

Heavy Duty Interlock Armored Riser UL/cUL Type OFCR/OFC FT4 Plenum UL/cUL Type OFCP/OFC FT6



Recommended Applications

- Industrial environments
- Rugged installations
- Mining shafts
- Telecommunications and data trunk
- Replacement for innerduct
- Below data center access floor

Product Features

- 900 µm tight buffered fibers
- Excellent mechanical protection
- Heavy duty construction
- Eliminates need for innerduct
- Steel Interlock available
- Aluminum Interlock provides minimum of 10x the crush resistance over interlock cable
- Versions available for outside plant
- Colored armor available

Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	220 N/cm
• Impact Resistance	(EIA-455-25)	2000 Impacts w/3 N-m
• Min. Bend Radius	Long Term	15x Cable
• Min. Bend Radius	Short Term	20x Cable
• Operating Temp.	–	–20°C to +70°C
• Installation Temp.	–	0°C to +60°C
• Storage Temp.	–	40°C to +80°C
• UL/cUL rated		Type OFCR / OFC FT4
• Flame Resistance		UL 1666 Passed
• UL/cUL Rated		Type OFCP / OFC FT6
• Flame Resistance		UL 910 Passed

Riser

Part Number	Fiber Count	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X230	6	14.48	.570	189	127	28.9	11.4	21.7	8.5	1201	270
M9X231	12	15.74	.620	223	150	31.5	12.4	23.6	9.3	1334	300
M9X233	24	21.46	.845	263	391	42.9	16.9	32.2	12.7	4470	1005
M9X235	48	24.64	.970	540	363	49.3	19.4	36.9	14.55	4203	945

Plenum

M9X240	6	12.2	.481	134	90	24.4	9.6	18.3	7.2	1201	270
M9X241	12	12.85	.506	153	103	25.7	10.1	19.3	7.6	1334	300
M9X242	24	16.03	.631	225	151	32.0	12.6	24.1	9.5	1735	390
M9X245	48	22.38	.881	439	295	44.7	17.6	33.5	13.2	5538	1245

Indoor/Outdoor Plenum

M9X240T	6	12.22	.481	134	90	24.4	9.6	18.5	7.2	1201	270
M9X241T	12	12.85	.506	140	94	25.7	10.1	19.3	7.6	1334	300
M9X242T	24	16.03	.631	225	151	32.0	12.6	24.1	9.5	2700	600
M9X245T	48	23.01	.906	442	297	46.0	18.1	34.5	13.6	2700	600

For "X" in part number see optical characteristics on page 30.

For buffer colors see chart C on page 50.

RoHS

Plug & Play

Pre-Terminated Cables for Plug & Play Installations

Recommended Applications

- Intrabuilding installations
- Data centers

Product Features

- **2-144 Fibers**
- **Maximum Density, Minimum Diameter**
  Fibers are grouped in sets of 12. Small diameter and bend radius facilitate installation in tight spaces.
- **Easy Identification and Installation**
  Sub-units are color-coded for identification. All-dielectric construction eliminates the need for grounding. Fibers terminated in MPO connectors.

Options

- Available in 50 μm, 62.5 μm, single-mode, and hybrid constructions.
- Available in colored jackets.

Mohawk's unique data center assemblies* combine compact size with industry standard MPO terminations to facilitate quick installations with maximum flexibility. Cable diameters are reduced by as much as 35% to save space in cable management pathways. The MPO terminations allow the cables to plug into a variety of manufacturers' fiber cassettes which convert the MPO interface to an LC, SC, ST or other connector style. Factory terminations provide a pre-qualified high performance connection which removes the variability of field polishing from the link. All cables are plenum (OFNP) rated to allow them to be installed in any interior location. The fiber performance can be specified using Mohawk's grading system to match the application. Hybrid cables, combining different fiber types, can also be specified. All lengths over 10m come standard with one pulling eye.

MD - X CCC - LLLF

Part No. Example: **MD - C 024 - 200F**
(Grade 5 24-fiber cable, 200-foot assembly)

MD = Mini-Distribution Cable

MA = Mini-Distribution Interlock Armor Cable

X = Fiber Type

CCC = Fiber Count (12-144)

LLL = Length of Assembly (feet)

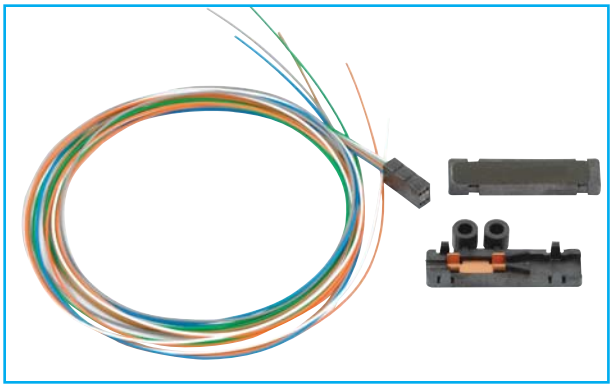
(For "X" in part number see optical characteristics on page 32.)

*Polarity per TIA/EIA array connector cable type "A". Other methods available upon request.

Breakout Kit

This Field Breakout Kit is designed to attach to one tube of a loose tube cable and has either six or twelve 900 μm tubes that hold each of the coated fibers. For each end of the cable, one kit is needed for every tube. For example, part number M9B511T has two tubes with six 62.5/125 fibers each. This cable requires four field breakout kits, two for each end of the cable.

The kit is available in two sizes to accommodate the two different tube sizes which are manufactured by Mohawk. For tubes containing one to six fibers, the diameter is 0.075" (1.9 mm) and for tubes containing seven to twelve fibers, the diameter is 0.110" (2.8 mm). Every kit is shipped with a complete set of instructions.



Tube Diameter	Fibers/Tube
0.075" (1.9 mm)	≤ 6
0.110" (2.8 mm)	7-12

Copper Product Cross Reference

		Mohawk	Berk-Tek Nexans	Systimax	Uniprise
UTP Cables	Augmented Category 6	XGO	LANmark-10G2	XX91 Series X10D	No UTP
	Category 6E	GigaLAN	LANmark-2000 6E	—	UltraPipe 6E 6ECMP 6ECMR
	Category 6e+	AdvanceNet	LANmark-1000	XX81 Series	—
	Category 6e	6 LAN Plus	—	—	UltraMedia 6e 7504 (CMP) 75N4 (CMR)
	Category 6	6 LAN	LANmark-6	XX71 Series	Media 6 6504+ (CMP) 65N4+ (CMR)
	Category 5E	MegaLAN	LANmark-350	—	Ultra II 5504M (CMP) 55N4R (CMR)
	Category 5e	5eLAN	HyperPlus 5e	XX61 Series	DataPipe 5E55 (CMP) 5EN5 (CMR)
F/UTP Cables	Category 6	Category 6 F/UTP	LANmark-10G F/UTP	—	10GNS4 ScTP
	Category 5E	MegaLAN F/UTP	LANmark-6 F/UTP	—	6554+ (CMP) 65N54+ (CMR)
	Category 5e	5eLAN F/UTP	—	—	—

Note: Products in the Systimax series do not provide cable only data, only 4-connector channel data. XX=10 for CMR and 20 for CMP.

See pages 2 & 3 for Mohawk part numbers by color.

Product information compiled from websites 10/09; any questions please consult your Mohawk sales representative.

General Cable	Hitachi HCM	Superior Essex
GenSpeed 10.000 Cat 6A	Supra 10G	10Gain
GenSpeed 6500	Supra 660	NextGain Cat 6eX
GenSpeed 6000e Cat 6+	Premium	—
—	—	DataGain Cat 6+
GenSpeed 6	Plus	Series 77 Cat 6
GenSpeed 5500	350	Cobra 5e+
GenSpeed 5350	Cat 5e	Marathon LAN
—	Cat 6 F/UTP	Cat 6+ ScTP (U/FTP)*
—	—	Cat 5e+ ScTP (F/UTP)
GenSpeed+ 5000 Screened	5e F/UTP	—

*Individually shielded pairs

Augmented Category 6 XGO™ – Meets the requirements of IEEE 802.3an, 10GBASE-T, for the full 100 meters per ANSI/TIA-568-C.2.

Category 6E GigaLAN® – Exceeds the requirements of ANSI/TIA-568-C.2 & ISO 11801 Class E cable. GigaLAN delivers an additional 7 dB of NEXT and PS-NEXT and 1.8 dB of Insertion Loss performance over standard Category 6.

Category 6e+ AdvanceNet® – Exceeds the requirements of ANSI/TIA-568-C.2 & ISO 11801 Class E cable. AdvanceNet delivers an additional 4 dB of NEXT and PS-NEXT performance over standard Category 6.

Category 6e 6 LAN Plus™ – Exceeds the requirements of ANSI/TIA-568-C.2 Category 6 & ISO 11801 Class E cable. Delivers an additional 3 dB improvement in NEXT and PSNEXT.

Category 6 6 LAN™ – Meets the minimum requirements as stated in ANSI/TIA-568-C.2 Category 6 & ISO 11801 Class E cable.

Category 5E+ MegaLAN® – Exceeds the ANSI/TIA-568-C.2 requirements for Category 5e UTP cables. Delivers a minimum of 6 dB PS-ACR at 100 MHz over Category 5e.

Category 5e 5eLAN® – Meets the minimum requirements as stated in ANSI/TIA-568-C.2 requirements for Category 5e UTP cables and delivering a minimum of 14 dB ACR@100 MHz.

Fiber Product Cross Reference

Description	Fiber Count	Fiber Type	Mohawk	General
Plenum Distribution Tight Buffer	6	SM	M9W045	AP0061PNU
Plenum Distribution Tight Buffer	6	62.5M	M9B045	CG0061PNU
Plenum Distribution Tight Buffer	6	50M	M9A045	BG0061PNU
Plenum Distribution Tight Buffer	6	50M 10G 550m	M9C045	BL0061PNU
Plenum Distribution Tight Buffer	12	SM	M9W048	AP0121PNU
Plenum Distribution Tight Buffer	12	62.5M	M9B048	CG0121PNU
Plenum Distribution Tight Buffer	12	50M	M9A048	BG0121PNU
Plenum Distribution Tight Buffer	12	50M 10G 550m	M9C048	BL0121PNU
Plenum Distribution Tight Buffer	24	SM	M9W641	AP0241PNU
Plenum Distribution Tight Buffer	24	62.5M	M9B641	CG0241PNU
Plenum Distribution Tight Buffer	24	50M	M9A641	BG0241PNU
Plenum Distribution Tight Buffer	24	50M 10G 550m	M9C641	BL0241PNU
Riser Distribution Tight Buffer	6	SM	M9W039	AP0061PNR
Riser Distribution Tight Buffer	6	62.5M	M9B039	CG0061PNR
Riser Distribution Tight Buffer	6	50M	M9A039	BG0061PNR
Riser Distribution Tight Buffer	6	50M 10G 550m	M9C039	BL0061PNR
Riser Distribution Tight Buffer	12	SM	M9W042	AP0121PNR
Riser Distribution Tight Buffer	12	62.5M	M9B042	CG0121PNR
Riser Distribution Tight Buffer	12	50M	M9A042	BG0121PNR
Riser Distribution Tight Buffer	12	50M 10G 550m	M9C042	BL0121PNR
Riser Distribution Tight Buffer	24	SM	M9W601	AP0241P1R
Riser Distribution Tight Buffer	24	62.5M	M9B601	CG0241P1R
Riser Distribution Tight Buffer	24	50M	M9A601	BG0241P1R
Riser Distribution Tight Buffer	24	50M 10G 550m	M9C601	BL0241P1R
Plenum Distribution Tight Buffer Interlock Armor	6	SM	M9W240	AP0061PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	6	62.5M	M9B240	CG0061PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	6	50M	M9A240	BG0061PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	6	50M 10G 550m	M9C240	BL0061PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	12	SM	M9W241	AP0121PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	12	62.5M	M9B241	CG0121PNU-ILPA

Corning	OCC	Berk-Tek	Superior	Systimax	Panduit
006E88-3131-29	DX06-045K-SLS/900-OFNP	PDP006-AB0707	440063101	5201006AWPYL	FSDP906Y
006K88-3130-29	DX06-045K-WLS/900-OFNP	PDP006-CB3510/25	440066G01	5201006AMPOR	FSDP606Y
006C88-3131-29	DX06-045K-ALS/900-OFNP	PDP006-LB3010/75	440065G02	—	FSDP506Y
006S88-3180-29	DX06-045K-ALT/900-OFNP	PDP006-EB3010/25	44006BG01	5201006AZPAQ	FSDPX06Y
012E88-3131-29	DX12-055K-SLS/900-OFNP	PDP012-AB0707	440123101	5201012AWPYL	FSDP912Y
012K88-3130-29	DX12-055K-WLS/900-OFNP	PDP012-CB3510/25	440126G01	5201012AMPOR	FSDP612Y
012C88-3131-29	DX12-055K-ALS/900-OFNP	PDP012-LB3010/75	440125G02	—	FSDP512Y
012S88-3180-29	DX12-055K-ALT/900-OFNP	PDP012-EB3010/25	44012BG01	5201012AZPAQ	FSDPX12Y
024E88-3131-29	DX24-055K-SLS/900-OFNP	PDP024-AB0707	440243101	5201024AWPYL	FSDP924Y
024K88-3130-29	DX24-055K-WLS/900-OFNP	PDP024-CB3510/25	440246G01	5201024AMPOR	FSDP624Y
024C88-3131-29	DX24-055K-ALS/900-OFNP	PDP024-LB3010/75	440245G02	—	FSDP524Y
024S88-3180-29	DX24-055K-ALT/900-OFNP	PDP024-EB3010/25	44024BG01	5201246AZPAQ	FSDPX24Y
006E81-3131-24	DX06-055D-SLS/900-OFNR	PDR006-AB0707	430063101	5200006AWRYL	FSDR906Y
006K81-3130-24	DX06-055D-WLS/900-OFNR	PDR006-CB3510/25	430066G01	5200006AMROR	FSDR606Y
006C81-3131-24	DX06-055D-ALS/900-OFNR	PDR006-LB3010/75	430065G02	—	FSDR506Y
006S81-3180-24	DX06-055D-ALT/900-OFNR	PDR006-EB3010/25	43006BG01	5200006AZRAQ	FSDRX06Y
012E81-3131-24	DX12-065D-SLS/900-OFNR	PDR012-AB0707	430123101	5200012AWRYL	FSDR912Y
012K81-3130-24	DX12-065D-WLS/900-OFNR	PDR012-CB3510/25	430126G01	5200012AMROR	FSDR612Y
012C81-3131-24	DX12-065D-ALS/900-OFNR	PDR012-LB3010/75	430125G02	—	FSDR512Y
012S81-3180-24	DX12-065D-ALT/900-OFNR	PDR012-EB3010/25	43012BG01	5200012AZRAQ	FSDRX12Y
024E81-3131-24	DX24-085D-SLS/900-OFNR	PDR024-AB0707	430243101	5200024AWRYL	FSDR924Y
024K81-3130-24	DX24-085D-WLS/900-OFNR	PDR024-CB3510/25	430246G01	5200024AMROR	FSDR624Y
024C81-3131-24	DX24-085D-ALS/900-OFNR	PDR024-LB3010/75	430245G02	—	FSDR524Y
024S81-3180-24	DX24-085D-ALT/900-OFNR	PDR024-EB3010/25	43024BG01	5200246AZRAQ	FSDRX24Y
006E88-3131-A3	DX06-045K-SLS/900-OFCP-IAK	PDPK006-AB0707	L40063401	5201006AWPYLAPYL	FSPP906Y
006K88-3130-A3	DX06-045K-WLS/900-OFCP-IAK	PDPK006-CB3510/25	L40066401	5201006AMPORAPOR	FSPP606Y
006C88-3131-A3	DX06-045K-ALS/900-OFCP-IAK	PDPK006-LB3010/75	L40065402	—	FSPP506Y
006S88-3180-A3	DX06-045K-ALT/900-OFCP-IAK	PDPK006-EB3010/25	L4006B401	5201006AZPAQAPAQ	FSPPX06Y
012E88-3131-A3	DX12-055K-SLS/900-OFCP-IAK	PDPK012-AB0707	L40123401	5201012AWPYLAPYL	FSPP912Y
012K88-3130-A3	DX12-055K-WLS/900-OFCP-IAK	PDPK012-CB3510/25	L40126401	5201012AMPORAPOR	FSPP612Y

Fiber Product Cross Reference

Description	Fiber Count	Fiber Type	Mohawk	General
Plenum Distribution Tight Buffer Interlock Armor	12	50M	M9A241	BG0121PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	12	50M 10G 550m	M9C241	BL0121PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	24	SM	M9W242	AP0241PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	24	62.5M	M9B242	CG0241PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	24	50M	M9A242	BG0241PNU-ILPA
Plenum Distribution Tight Buffer Interlock Armor	24	50M 10G 550m	M9C242	BL0241PNU-ILPA
Riser Distribution Tight Buffer Interlock Armor	6	SM	M9W230	AP0061PNR-ILRA
Riser Distribution Tight Buffer Interlock Armor	6	62.5M	M9B230	CG0061PNR-ILRA
Riser Distribution Tight Buffer Interlock Armor	6	50M	M9A230	BG0061PNR-ILRA
Riser Distribution Tight Buffer Interlock Armor	6	50M 10G 550m	M9C230	BL0061PNR-ILRA
Riser Distribution Tight Buffer Interlock Armor	12	SM	M9W231	AP0121PNR-ILRA
Riser Distribution Tight Buffer Interlock Armor	12	62.5M	M9B231	CG0121PNR-ILRA
Riser Distribution Tight Buffer Interlock Armor	12	50M	M9A231	BG0121PNR-ILRA
Riser Distribution Tight Buffer Interlock Armor	12	50M 10G 550m	M9C231	BL0121PNR-ILRA
Riser Distribution Tight Buffer Interlock Armor	24	SM	M9W232	AP0241P1R-ILRA
Riser Distribution Tight Buffer Interlock Armor	24	62.5M	M9B232	CG0241P1R-ILRA
Riser Distribution Tight Buffer Interlock Armor	24	50M	M9A232	BG0241P1R-ILRA
Riser Distribution Tight Buffer Interlock Armor	24	50M 10G 550m	M9C232	BL0241P1R-ILRA
Plenum Indoor/Outdoor Loose Tube	6	SM	M9W202	AP0064M1D-DT
Plenum Indoor/Outdoor Loose Tube	6	62.5M	M9B202	CG0064M1D-DT
Plenum Indoor/Outdoor Loose Tube	6	50M	M9A202	BG0064M1D-DT
Plenum Indoor/Outdoor Loose Tube	6	50M 10G 550m	M9C202	BL0064M1D-DT
Plenum Indoor/Outdoor Loose Tube	12	SM	M9W204	AP0124M1D-DT
Plenum Indoor/Outdoor Loose Tube	12	62.5M	M9B204	CG0124M1D-DT
Plenum Indoor/Outdoor Loose Tube	12	50M	M9A204	BG0124M1D-DT
Plenum Indoor/Outdoor Loose Tube	12	50M 10G 550m	M9C204	BL0124M1D-DT
Plenum Indoor/Outdoor Loose Tube	24	SM	M9W205	AP0244M1D-DT
Plenum Indoor/Outdoor Loose Tube	24	62.5M	M9B205	CG0244M1D-DT
Plenum Indoor/Outdoor Loose Tube	24	50M	M9A205	BG0244M1D-DT
Plenum Indoor/Outdoor Loose Tube	24	50M 10G 550m	M9C205	BL0244M1D-DT

Corning	OCC	Berk-Tek	Superior	Systimax	Panduit
012C88-3131-A3	DX12-055K-ALS/900-OFCP-IAK	PDPK012-LB3010/75	L40125402	—	FSPP512Y
012S88-3180-A3	DX12-055K-ALT/900-OFCP-IAK	PDPK012-EB3010/25	L4012B401	5201012AZPAQAPAQ	FSPPX12Y
024E88-3131-A3	DX24-055K-SLS/900-OFCP-IAK	PDPK024-AB0707	L40243401	5201024AWPYLAPYL	FSPP924Y
024K88-3130-A3	DX24-055K-WLS/900-OFCP-IAK	PDPK024-AB0707	L40246401	5201024AMPORAPOR	FSPP624Y
024C88-3131-A3	DX24-055K-ALS/900-OFCP-IAK	PDPK024-LB3010/75	L40245402	—	FSPP524Y
024S88-3180-A3	DX24-055K-ALT/900-OFCP-IAK	PDPK024-EB3010/25	L4024B401	5201246AZPAQAPAQ	FSPPX24Y
006E81-3131-A1	DX06-055D-SLS/900-OFCR-IAD	PDRK006-AB0707	L30063401	5200006AWRYLARYL	FSPR906Y
006K81-3130-A1	DX06-055D-WLS/900-OFCR-IAD	PDRK006-CB3510/25	L30066401	5200006AMRORARAOR	FSPR606Y
006C81-3131-A1	DX06-055D-ALS/900-OFCR-IAD	PDRK006-LB3010/75	L30065402	—	FSPR506Y
006S81-3180-A1	DX06-055D-ALT/900-OFCR-IAD	PDRK006-EB3010/25	L3006B401	5200006AZRAQARAQ	FSPRX06Y
012E81-3131-A1	DX12-065D-SLS/900-OFCR-IAD	PDRK012-AB0707	L30123401	5200012AWRYLARYL	FSPR912Y
012K81-3130-A1	DX12-065D-WLS/900-OFCR-IAD	PDRK012-CB3510/25	L30126401	5200012AMRORARAOR	FSPR612Y
012C81-3131-A1	DX12-065D-ALS/900-OFCR-IAD	PDRK012-LB3010/75	L30125402	—	FSPR512Y
012S81-3180-A1	DX12-065D-ALT/900-OFCR-IAD	PDRK012-EB3010/25	L3012B401	5200012AZRAQARAQ	FSPRX12Y
024E81-3131-A1	DX24-085D-SLS/900-OFCR-IAD	PDRK024-AB0707	L30243401	5200024AWRYLARYL	FSPR924Y
024K81-3130-A1	DX24-085D-WLS/900-OFCR-IAD	PDRK024-CB3510/25	L30246401	5200024AMRORARAOR	FSPR624Y
024C81-3131-A1	DX24-085D-ALS/900-OFCR-IAD	PDRK024-LB3010/75	L30245402	—	FSPR524Y
024S81-3180-A1	DX24-085D-ALT/900-OFCR-IAD	PDRK024-EB3010/25	L3024B401	5200246AZRAQARAQ	FSPRX24Y
Not Available	Not Available	LTP006-AB0403	Not Available	5125006AWPBK	FSCP906Y
Not Available	Not Available	LTP006-CB3510/25	Not Available	—	FSCP606Y
Not Available	Not Available	LTP006-LB3010/75	Not Available	5125006AMPBK	FSCP506Y
Not Available	Not Available	LTP006-EB3010/25	Not Available	5125006AZPBK	FSCPX06Y
012ESP-T4101-D20	Not Available	LTP012-AB0403	Not Available	5125012AWPBK	FSCP912Y
012KSP-T4130-D20	Not Available	LTP012-CB3510/25	Not Available	—	FSCP612Y
012CSP-T4131-D20	Not Available	LTP012-LB3010/75	Not Available	5125012AMPBK	FSCP512Y
012SSP-T4180-D20	Not Available	LTP012-EB3010/25	Not Available	5125012AZPBK	FSCPX12Y
024ESP-T4101-D20	Not Available	LTP024-AB0403	Not Available	5125024AWPBK	FSCP924Y
024KSP-T4130-D20	Not Available	LTP024-CB3510/25	Not Available	—	FSCP624Y
024CSP-T4131-D20	Not Available	LTP024-LB3010/75	Not Available	5125024AMPBK	FSCP524Y
024SSP-T4180-D20	Not Available	LTP024-EB3010/25	Not Available	5125024AZPBK	FSCPX24Y

Color Code Charts

Chart A

Pair No.	Pair Color Code
1	White/Blue & Blue
2	White/Orange & Orange
3	White/Green & Green
4	White/Brown & Brown

Chart B

Pair No.	Pair Color Code
1	White/Blue & Blue/White
2	White/Orange & Orange/White
3	White/Green & Green/White
4	White/Brown & Brown/White
5	White/Slate & Slate/White
6	Red/Blue & Blue/Red
7	Red/Orange & Orange/Red
8	Red/Green & Green/Red
9	Red/Brown & Brown/Red
10	Red/Slate & Slate/Red
11	Black/Blue & Blue/Black
12	Black/Orange & Orange/Black
13	Black/Green & Green/Black
14	Black/Brown & Brown/Black
15	Black/Slate & Slate/Black
16	Yellow/Blue & Blue/Yellow
17	Yellow/Orange & Orange/Yellow
18	Yellow/Green & Green/Yellow
19	Yellow/Brown & Brown/Yellow
20	Yellow/Slate & Slate/Yellow
21	Violet/Blue & Blue/Violet
22	Violet/Orange & Orange/Violet
23	Violet/Green & Green/Violet
24	Violet/Brown & Brown/Violet
25	Violet/Slate & Slate/Violet

COLOR CODE REPEATS FOR EACH GROUP OF 25 PAIRS.
For cables containing multiple groups of 25 pairs, each group will be identified by a color coded binder following the above color chart.
Example: 50 pair cable will have 2 groups of 25 pairs; first binder color is white/blue, second binder is white/orange.

Chart C

Fiber	Color	Fiber	Color
1	Blue	7	Red
2	Orange	8	Black
3	Green	9	Yellow
4	Brown	10	Violet
5	Slate	11	Pink
6	White	12	Aqua

Chart D

Pair or Group Number	Pair & Binder Color Code	
	Tip Color	Ring Color
1	White	Blue
2	White	Orange
3	White	Green
4	White	Brown
5	White	Slate
6	Red	Blue
7	Red	Orange
8	Red	Green
9	Red	Brown
10	Red	Slate
11	Black	Blue
12	Black	Orange
13	Black	Green
14	Black	Brown
15	Black	Slate
16	Yellow	Blue
17	Yellow	Orange
18	Yellow	Green
19	Yellow	Brown
20	Yellow	Slate
21	Violet	Blue
22	Violet	Orange
23	Violet	Green
24	Violet	Brown
25	Violet	Slate

COLOR CODE REPEATS FOR EACH GROUP OF 25 PAIRS.
For cables containing multiple groups of 25 pairs, each group will be identified by a color coded binder following the above color chart.
Example: 50 pair cable will have 2 groups of 25 pairs; first binder color is white/blue, second binder is white/orange.

Insulations

Comparative Properties of Insulations

Property Considered	Cellular Polyethylene	Polyethylene	Nylon	Polypropylene	Polyurethane	PVC	FEP
Acid Resistance	G to E	G to E	P to F	E	F	G to E	E
Abrasion Resistance	G	F to G	E	F to G	O	F to G	G to E
Alcohol Resistance	E	E	P	E	P	G	E
Alkali Resistance	G to E	G to E	E	E	F	G	E
Benzol (Aromatic Hydrocarbons) Resistance	P	P	G	P to F	P	P to F	E
Degreaser Solvents (Halogenated Hydrocarbons)	P	P	G	P	P	P to F	E
Electrical Properties	E	E	F	E	P to F	F to G	E
Flame Resistance	P	P	P	P	P	E	O
Gasoline, Kerosene (Aliphatic Hydrocarbons) Resistance	P to F	P to F	G	P to F	F	P	E
Heat Resistance	G to E	G	E	E	G	G to E	O
Low Temperature Flexibility	E	G to E	G	P	G	P to G	O
Nuclear Radiation Resistance	G	G	P to F	F	G	P to G	O
Oil Resistance	G to E	G to E	E	E	E	P	O
Oxidation Resistance	E	E	E	E	E	E	O
Ozone Resistance	E	E	E	E	E	E	E
Water Resistance	E	E	P to F	E	P	E	E
Weather – Sun Resistance	E	E	E	E	F to G	G to E	O

P = Poor F = Fair G = Good E = Excellent O = Outstanding
Above ratings are based on average performance of compounds. Any specific property can often be improved by the use of selective compounding.

Current Carrying Capacity of Insulated Copper Conductors

Amps	PE, Polyurethane PVC (Semi-Rigid)	Polypropylene PVC	Nylon PVC	PVDF PE (X-linked) Thermoplastic Elastomers	FEP
	Temperature Rating				
Size AWG	80°C	90°C	105°C	125°C	200°C
30	2	3	3	3	4
28	3	4	4	5	6
26	4	6	5	6	7
24	6	7	7	8	10
22	8	9	10	11	13
20	10	12	13	14	17
18	15	17	18	20	24
16	19	22	24	26	32
14	27	30	33	40	45
12	36	40	45	50	55
10	47	55	58	70	75
8	65	70	75	90	100
6	95	100	105	125	135
4	125	135	145	170	180
2	170	180	200	225	240

Single Conductor in Free Air 30° Ambient Temp.

Dielectric Constants of Insulations

Insulation Materials	Nominal
PVDF	6.4
Nylon	4.0
Polyester	2.80
Polyethylene (Cellular)	1.50
Polyethylene (High Density)	2.34
Polyethylene (Low Density)	2.28
Polypropylene	2.24
Polyvinyl Chloride (Semi-Rigid)	4.3
Teflon FEP	2.15
Teflon TFE	2.15
Tefzel, Halar	2.6
FEP (Cellular)	1.5

UTP Installation Guide

- Category 5e
- Category 6A
- Category 6

UTP cables were developed and designed to be used independent of the system application. Set transmission performance criteria (Categories) have been established for the various grades of UTP cables.

What are these Categories?

Categories are a method of classifying UTP cables and related hardware within specific performance criteria.

Category 5e - Specifies cable and connecting hardware with transmission characteristics up to 100 MHz. It differs from Category 5 by having 3 dB tighter NEXT requirements and additional requirements for PS NEXT, ELFEXT, PS ELFEXT, and RL.

Category 6 - This document specifies cable and connecting hardware with transmission characteristics up to 250 MHz. In addition, Category 6 has tighter insertion loss, NEXT, PS NEXT, ELFEXT and PS ELFEXT over Category 5e.

Cable Handling

Length

The maximum horizontal cable length is 90 meters (295 feet). Ten meters is allowed for cords in the work area, and for patch cords or jumpers in the telecommunications closet.

The maximum backbone cable length is 90 meters (295 feet). This 90-meter length assumes that 5 meters (16 feet) are needed at each end for equipment cables connecting to the backbone.

Pulling Tension

Maximum pulling tension for a 4-pair horizontal cable is 25 lbf. Excessive pulling tensions may occur during installation. Once the damage is done, reversing the effect may not be sufficient enough to correct the problem and cable replacement is recommended. Intermediate cable pulls within the overall cable run may be necessary to avoid exceeding the maximum pulling force.

Minimum Bend Radius

4-pair UTP cables have a 1" Min. Bend Radius.

CAUTION: Exceeding the minimum bend radius can distort the cable geometry and result in degrading of transmission performance.

Repositioning of the cable to the proper bend radii may not correct the fault. Once the damage is done, the best option is replacement of the damaged run.

There are two common places where exceeding the minimum bend may occur:

- *At the workstation wall outlet*. After the cable is terminated, too often the remaining cable is jammed into the wall outlet, or worse, wrapped around itself and shoved into the outlet. A better practice would be to gently work the excess cable length back through the wall outlet into the wall.
- *At the wiring closet, during routing of the cable to the terminal block or patch panel*. Prior cable placement practices may have encouraged making the cable appear as formfitting or tight against the routing structure (cable tray or rack) as possible. A better practice would be to incorporate gently sweeping curves along the cable path avoiding sharp bends or changes in direction. Every effort should be made to ensure the path the cable follows has smooth gradual sweeps at any transition point.

Installation in Temperatures Below Freezing

The minimum installation temperature for plenum cables is 0°C (32°F). If the cable has to be installed when the temperature is below 32°F the following precautions should be taken to ensure that the jacket will not crack:

- Store the cable in a heated area whose temperature is above 50°F for 24 hours before installation.
- Transfer only enough cable to the job site for 4 hours work. The cable will retain enough heat to prevent cracking. Cable that has not been installed after 4 hours should be returned to a heated area.
- Coil service loops in 10" to 12" loops. A tight coil could cause the cable to crack.
- Normally the cables are terminated after the site is enclosed and heated. Do not attempt to terminate the cables when the temperature is below freezing.

Over Stressing

Eliminate cable stress caused by tension in suspended cable runs and tightly cinched cable bundles.

Excessive cable loading or stress can also occur if a cable is incorrectly suspended in a cable run. A recommended cable support spacing is 48" to 60" centers.

Avoid twisting of cable during installation. Excessive twisting may result in distortion of cable geometry, and in severe cases tears in the jacket.

In addition to the above guidelines extracted from TIA/EIA-568, Mohawk strongly recommends the following supplementary installation tips:

- Do not walk or step on high performance cable. Do not run over high performance cable with hand trucks or forklifts. This will exert excessive force on the cable, distorting the geometry and/or crushing the pairs, resulting in electrical shorts.
- Do not use staples, either from a staple gun or mounting in a traditional manner with a hammer. Staples can exert excessive force on the cable and distort the pair geometry.
- D-Rings, nail on clamps or Velcro® straps offer acceptable cable management techniques without compressing the cable.
- Do not run cable near sources of heat, as this may negatively impact cable attenuation.
- Maintain a 6" minimum spacing between cables and sources of EMI, such as fluorescent lights or unshielded power lines.

Termination

The installer must be acquainted with the Connector Manufacturer's installation instructions. The correct tools, wire layout and untwist length are critical, especially in Category 6 installations. Modular jacks usually have the Pair color code marked on the jack. The color code can be either T568A or T568B wiring methods. Maintain the same pin to pair combination throughout the installation. Changing pin pair assignment can result in crossed pairs. Modular jacks and cross-connect blocks employ IDC connectors to complete the circuit between the cable and the hardware. The manufacturer will recommend the tools needed to terminate the cable.

Terminate with connecting hardware of the same category or higher. Any link that has substituted a lower category component is automatically classified to that lower category.

The maximum allowable amount of untwisting during cable termination to connecting hardware is 0.5" for Category 5e and Category 6 cables. Exceeding the recommended length of untwisting may cause performance problems. The same techniques should be employed when terminating cross-connect blocks. Maintaining jacket integrity to the point of termination aids in maintaining cable geometry and NEXT isolation from adjacent cable pairs.

Bridged taps and splices are not permitted as part of copper horizontal cabling requirements.

Testing

It is best to determine the lengths of several representative cable runs and adjust the NVP to correspond to the known cable lengths. If the readout for the cable length is longer than the known length, the NVP should be decreased. Conversely, if the readout for the cable length is shorter than the known length the NVP should be increased.

The NVP values for Mohawk's products are as follows:

	Non-Plenum	Plenum
Category 5e	68%	72%
Category 6	68%	72%
Category 6A	68%	72%

A Note of Caution:

Level II or Level III Testers will be required to accurately measure Category 5e and 6 permanent links and channels.

Consult the manufacturer of your test set for clarification.

Category 5e, 6 and 6A - Permanent Link Requirements at Specific Frequencies

Freq	Insertion Loss		PSAACRF	NEXT		
(MHz)	5e	6	6A	5e	6	6A
1.0	2.1	1.9	1.9	60.0	65.0	65.0
4.0	3.9	3.5	3.5	54.8	64.1	64.1
10.0	6.2	5.6	5.5	48.5	57.8	57.8
20.0	8.9	7.9	7.8	43.7	53.1	53.1
25.0	10.0	8.9	8.8	42.1	51.5	51.5
31.25	11.2	10.0	9.8	40.5	50.0	50.0
62.5	16.2	14.4	14.0	35.7	45.1	45.1
100.0	21.0	18.6	18.0	32.3	41.8	41.8
200.0	–	27.4	26.1	–	36.9	36.9
250.0	–	31.1	29.5	–	35.3	35.3

Freq	ACRF		PSAACRF	RL		
(MHz)	5e	6	6A	5e	6	6A
1.0	58.6	64.2	67.7	19.0	19.1	19.1
4.0	46.6	52.1	65.7	19.0	21.0	21.0
10.0	38.6	44.2	57.7	19.0	21.0	21.0
20.0	32.6	38.2	51.7	19.0	21.0	21.0
25.0	30.7	36.2	49.7	18.0	19.5	19.5
31.25	28.7	34.3	47.8	17.1	18.5	18.5
62.5	22.7	28.3	41.8	14.1	16.0	16.0
100.0	18.6	24.2	37.7	12.0	14.0	14.0
200.0	–	18.2	31.7	–	11.0	11.0
250.0	–	16.2	29.7	–	10.0	10.0

The Permanent Link requirements include 90 meters of horizontal cable and the connectors at each end. The cables to the test equipment are not part of the permanent link and are subtracted out by the test equipment.

Channel requirements include 90 meters of horizontal cable and 10 meters of equipment cords, patch cords and jumpers. The maximum length of cross-connect jumpers and patch cords in the cross-connect facility should not exceed 5 meters.

For additional information and an ANSI referenced list, please contact: GLOBAL ENGINEERING DOCUMENTS at 1-800-854-7179.

For additional information on cable selection, please call 1-800-422-9961 or email techsupport@mohawk-cable.com.

These guides have been prepared by Mohawk as an aid for installers of Mohawk Category and Fiber Optic Cables and are not a warranty by Mohawk and should not be construed as such.

Mohawk's sole warranty with respect to its cables is set forth in the document entitled "Mohawk Warranty," which has been or will be provided separately to installers of Mohawk Category and Fiber Optic Cables.

Fiber Installation Guide

FOREWORD

It is assumed that the reader has a general understanding of fiber optic cable constructions and terminology. BICSI (www.bicsi.org) is an excellent resource for general information.

SAFETY PRECAUTIONS

- When installed on a live system, invisible laser radiation may be present. Do not stare into connector endface or view directly with optical instruments.
- Wear safety glasses when working with optical fiber.
- Dispose of all scrap fibers to avoid getting fiber slivers.

Scope

The following guidelines are intended as a general overview of important issues related to the installation of fiber optic cable.

INSTALLATION SPECIFICATIONS

For a proper cable installation, it is important to understand the cable specification. The two most important specifications are the tensile loading and bend radius specifications. It is very important to adhere to these limits.

Tensile loading

Although there are two different types of tension in fiber optic cables, the important tension for the installation is the maximum load the cable can be subjected to without causing permanent damage. We call it the "maximum load installation" and it is measured in Newtons or pounds. The "maximum load installation" can also be known as "short-term tension", "dynamic load", "installation load" or "installation tension".

Whenever possible, the tension of the installation should be monitored. The tension can be measured with a dynamometer, or with a pulling wheel. Breakaway pulling eyes are available which separate if the tension reaches a pre-set level. The use of a swivel is recommended when pulling the cable in tray. The swivel allows the cable and pulling rope to twist independently.

If pulling a cable in an outside plant conduit, the use of approved lubricants can help minimize friction. The use of corrugated innerducts can also help reduce the amount of tension needed to pull the cable. When installing loose-tube cables, the use of sealer is recommended to prevent gel migration.

If a run is too long, or if several bends are in the conduit, intermediate pull boxes should be used to separate one pull into two or more shorter pulls. A cable should not be pulled through more than two 90° bends at one time. If three or more 90° bends in a continuous run are unavoidable, the cable should be installed from a central point, unreeled into a figure-eight, and then back-fed to complete the installation. Sharp bends may increase cable tension, so it is best to install cable in sequences that minimize stress and labor costs.

When running cable vertically, take note of the cable weight. Install cables in a sequence that applies the least amount of strain on the cable. For example, most vertical chases in buildings tend to be congested at the lower floors; instead, try to start your installation at the top and work down the building, thereby eliminating most of the cable installation by the time you reach the lower floors. After installation, the strength member of the cable will need to support the hanging cable. If a long vertical run is necessary, cable should be secured at each floor and service loops should be placed every three floors, at a minimum. This procedure will help distribute the weight of the cable vertically and will facilitate access to moves, adds and changes (MACs), if needed at a later date.

Bend radius

There are two types of bend radius:

- The short-term minimum bend radius, or dynamic bend radius, is the tightest recommended bend while installing cable at the maximum rated tension. It is the larger of the two specified bend radii. Throughout the pull, the minimum bend radius must be strictly followed. If a location exists in the middle of a run where a relatively tight bend is unavoidable, the cable should be hand-fed around the bend or a pulley can be used.
- The long-term bend radius, or static bend radius, is the tightest recommended bend while the cable is under a minimum tension. It is the smaller of the two specified bend radii. After the pull is complete, the cable can be bent more tightly to fit into existing space, but not to exceed the long-term minimum bend radius.

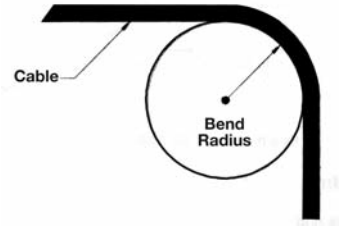


Figure 1: Bend Radius

Table 1: Typical Bend Radius Specification

	Short Term (Installation)	Long Term (Installed)
Outside Plant Cable	20x Cable Diameter	15x Cable Diameter
Premise Cable	15x Cable Diameter	10x Cable Diameter

Always follow the manufacturer's guidelines for minimum bend radius and tension. Failure to do so may result in high attenuation (macrobends) and possible damage to the cable and fiber. Guidelines are normally supplied with the cable manufacturer specification sheets. If the bend radius specifications are unknown, the industry de facto standard is to maintain a minimum radius of 20X the diameter of the cable.

The minimum bend radius must also be adhered to when using service loops. Fiber optic splice trays and patch panels are designed to accommodate the bend radii of the individual fibers, but outside of the hardware, extra care must be taken.

INSTALLATION TOOLS

Gripping Techniques

General

To effectively utilize all of the available strength in the cable, the strength member must be used. The manufacturer's specification will identify the strength member(s) in the cable.

Cables with aramid yarn as the strength member

For cables using aramid yarn alone as the strength member, the jacket can be removed exposing the aramid. The aramid should be tied in a knot with the pull rope, so that the jacket will not be inadvertently used for strength.

Optionally, the jacket can be tied into a tight knot before pulling. After pulling, the knot should be cut off.

Fiber Installation Guide

Figure 2: Distribution Cable Tied in a Knot

Cables with aramid yarn and an e-glass central member

For cables using aramid yarn and an e-glass central member, a pulling grip should be used. The strength member(s) should be attached independently. This can be accomplished by weaving the strength member into the fingers of the grip, and then taping it together. All strength members should be gripped equally to ensure a proper distribution of tension.

Figure 3: Pulling Grip

Pre-terminated Fiber Optic Cable Assemblies

General

The factory pre-terminated fiber optic cable assemblies may be specified in project environments such as Data Centers. The assemblies can be ordered in either indoor (plenum) or outdoor versions, and different fiber counts, and in multimode or single-mode. A pulling eye can be factory installed on either end or on both ends of the cable. The pulling eye (and associated cable netting) will protect the pre-terminated ends during the pull. This product is a great time saver, ensuring quality connections every time.

Pulling eye

The pulling eyes (and associated cable netting) are highly recommended. The pulling eye will facilitate the installation as well as protecting the pre-terminated ends during the pull.

For both regular and pre-connectorized cables, the maximum pull force is identified with the “installation maximum load” cable specification on our data sheets.

In many cases, pulling is not done from point to point, but rather from an intermediate point pulling back in each direction to each termination location. It is then important to make sure that the cable is ordered with two pulling eyes, one at each end.

The installation of a cable, which is pre-connectorized on both ends, requires special raceway considerations and pulling grips. A typical fiber optic connector is 0.5 in. (1.25 cm) in diameter, has a limited pull-off rating and must be protected during cable placement. A pulling grip for a pre-connectorized cable must successfully isolate the connectors from any tensile load by placing the load on the cable itself. The pulling grip must also protect the connectors from abrasion and damage. In medium fiber counts (6 to 24 fibers) the connectors must be staggered when installed to reduce the diameter of the pulling grip. In high fiber counts (greater than 24 fibers), installation of a connectorized cable may not be possible due to the conduit size that would be required.

INSTALLATION GUIDELINES

Prior to installation

All optical fiber cables are tested before leaving our manufacturing plant. Before installing the cable, we recommend testing the cable on the reel for continuity. This is to ensure that no damage occurred during shipment. Since the cost of installation is usually higher than the cost of materials, testing the fibers before installation can avoid unnecessary additional expenses and help meet important deadlines. At a minimum, continuity testing can be done on the reel with a visual fault locator or a simple fiber tracer such as a flashlight, a modified flashlight to properly hold the fibers, a microscope or a bright red light (LED look-alike). With this simple test, you should be able to identify broken fibers, if any, within the optical fiber cable.

Also, it is recommended to double-check the actual fiber count and the actual cable length, to avoid any inconvenience.

It is preferable to use Velcro® wraps instead of tie-wraps. Remember not to distort the shape of the cable, as this adds pressure onto the optical fibers and may affect performance.

Fiber optic cables can be installed in innerducts. The use of innerducts tends to reduce the pulling tension required. Ensure that the properly rated innerduct is being installed.

A 3 to 6 m (10 to 20 ft) of cable slack should be stored in enclosure or on the wall to allow repairs and/or relocation needs.

Installation in Temperatures Below Freezing

The minimum installation temperature for plenum cables is 0°C (+32°F). If the cable has to be installed when the temperature is below +32°F the following precautions should be taken to ensure that the jacket will not crack:

- Store the cable in a heated area whose temperature is above 50°F for 24 hours before installation.
- Transfer only enough cable to the job site for 4 hours work. The cable will retain enough heat to prevent cracking. Cable that has not been installed after 4 hours should be returned to a heated area.
- Coil service loops in 10” to 12” loops. A tight coil could cause the cable to crack.
- Normally the cables are terminated after the site is enclosed and heated. Do not attempt to terminate the cables when the temperature is below freezing.

OUTSIDE PLANT CABLE INSTALLATION

General

Protect exposed cables from vehicular and public traffic.

Underground Installation

For underground installation, center pull long cables. Store excess cable in vaults and manholes, and identify optical cables with markers.

Aerial Installation

Use proper hardware matching cable, span and tension requirements. Use correct cable jacket.

Buried Cable Installations

Identify cable locations with surface markers. Anticipate obstructions.

Administration

A unique identifier shall be assigned to each backbone cable and shall be marked on each end. Reference should be made as per the ANSI/TIA/EIA-606-A standard.

TERMINATION

General

Before termination, the cable should be properly secured to provide a tension-free length of fiber. When splicing fibers, mechanical or fusion, a splice tray is needed to properly store the completed splices. If connectors are to be used, trays or shelves should be used to support the fiber behind the connector. Proper strain relief sleeves provided with the connectors should always be used to prevent excessive bending of fiber. No shelf is necessary if terminating a breakout style cable with connectors.

Fiber Installation Guide

CABLE PREPARATION FOR THE TERMINATION

General

It is acceptable to directly terminate the 900 μm tight buffer from a distribution cable with a connector, if the above precautions are taken. It can be acceptable to directly terminate the 250 μm coated fiber from a loose buffer tube with a connector in certain applications. However, it is usually recommended to use a breakout kit which converts a six or twelve fiber loose buffer tube to a six or twelve fiber 900 μm distribution style ready for termination.

If outside plant cables are used, the gel flooding material (if present) needs to be cleaned with the appropriate solvent (please consult the cable manufacturer for recommendation on the choice of solvent). The more thorough the cleaning, the easier the termination procedure will be.

Cable preparation

To prepare the cable for termination, the outer jacket must be properly stripped. Two ring cuts should be made in the jacket; one about 2" from the end and the second at the point where the jacket is to be removed. Care must be taken not to cut all the way through the jacket and into the core. The 2" piece is removed from the end of the cable exposing the core and the aramid ripcord. Make a notch in the jacket alongside the ripcord (do not cut the ripcord!). Pull the ripcord with a needle-nose pliers, or similar, until it reaches the second ring cut. Remove the core from the sliced jacket and pull the jacket to tear it at the ring cut.

Once the fiber optic cable is ready for termination, follow the termination installation instructions.

TESTING

General

Once the cable plant is installed and terminated, it is recommended to test the fiber optic segment. The testing should be done according to TIA TSB-140. This document provides guidelines for field-testing length, loss and polarity of a completed fiber optic link.

It is necessary to perform an end-to-end attenuation test to verify the quality of installations and to ensure high quality system performance. The best way to verify whether an end-to-end link meets the link loss budget is to divide the end-to-end link into segments at each cross-connect and measure the attenuation of each link segment. In order for the system to operate properly, the sum of the attenuation for the multiple link segments that form an end-to-end link must be less than the link loss budget calculated in the design phase.

Test equipment

Various types of testing equipment are available on the market, such as Optical Loss Test Set (OLTS), Visual Fault Locator (VFL) sets or the Optical Time Domain Reflectometer (OTDR). For troubleshooting, the OTDR is recommended.

Optical Loss Test Set (OLTS)

The OLTS consists of a light source and an optical power meter. The main function of this equipment is to measure the optical power or loss.

Visual Fault Locator (VFL) or tracer

The VFL is a red laser source; the tracer is an LED source. Either instrument can be used to trace fibers and troubleshoot faults on optical fiber cables. The main function of this equipment is to check continuity of the fiber, as well as to identify fibers and connectors in patch panels or outlets.

Optical Time Domain Reflectometer (OTDR)

The OTDR is a more sophisticated measurement instrument. It uses a technology that injects a series of optical pulses into the fiber under test and analyzes the light scattering and the light reflection. This allows the instrument to measure the intensity of the return pulse in functions of time and fiber length. The OTDR is used to measure the optical power loss and the fiber length, as well as to locate all faults resulting from fiber breaks, splices or connectors.

Fiber testing guidelines

The following testing guidelines promote efficient and accurate testing:

- Clean all connections and adapters at the optical test points prior to taking measurements, as per ANSI/TIA/EIA-526-14A.
- The light source or OTDR (Optical Time Domain Reflectometer) must operate within the range of 850 ± 30 nm, or 1300 ± 20 nm for multimode testing.
- Test jumpers must be of the same fiber core size, performance and connector type as the cable system (e.g., 50/125 μm jumpers for a 50/125 μm optical fiber system) and shall be one to five meters long. ANSI/TIA/EIA-568-B.1 is the recommended test method.

A detailed attenuation test report is available, upon request, for every reel of fiber optic cable shipped from Mohawk. Typical values for a multimode cable are 2.7 dB/km when measured at 850 nm and 0.7 dB/km when measured at 1300 nm. Therefore, for a run of 100 meters (328 feet), the typical cable attenuation is only 0.27 dB at 850 nm and 0.07 dB at 1300 nm.

Most fiber optic connectors are specified as having an insertion loss of less than 0.5 dB. Since there are two connections for each fiber, up to 1 dB of attenuation can be expected to be added to the installed cable. As the cable runs get shorter, the cable attenuation becomes lower, but the connector insertion loss remains the same. If the cable is installed properly, most of the measured attenuation will come from the connectors.

If several fibers off of the same cable show high attenuation, or if a single fiber attenuation remains high after retermination, an OTDR should be used to isolate the problem. An OTDR is an excellent tool for troubleshooting a failing link by identifying the location of the faulty component.

These guides have been prepared by Mohawk as an aid for installers of Mohawk Category and Fiber Optic Cables and are not a warranty by Mohawk and should not be construed as such. Mohawk's sole warranty with respect to its cables is set forth in the document entitled "Mohawk Warranty," which has been or will be provided separately to installers of Mohawk Category and Fiber Optic Cables.

Copper Cable Selector Guide

Match your application to the corresponding cable category. Use the selector guide to determine which copper product best suits your needs. From legacy 10BASE-T to 10 Gibabit Ethernet to emerging networking protocols. Worst-case performance is stated at two frequencies for all categories of performance, from minimally compliant Category 5e to our Category 6A XGO. Products highlighted in green are the minimum recommended cables. For additional headroom and upgrade ability, select a product highlighted in yellow.

	UTP	5e 5eLAN		5E+ MegaLAN		6 6 LAN		6e 6 LAN Plus		6e+ AdvanceNet		6E GigaLAN		6A† XGO	
	Test Freq. MHz	100	200	100	200	100	250	100	250	100	250	100	250	100	500
10 BASE-T 4 & 16 Mbps TOKEN RING 100 BASE-T 155 Mbps ATM	Insertion Loss max.	22.0	–	21.0	30.5	19.8	32.8	19.8	32.8	19.7	32.6	18.0	29.6	19.0	45.3
	NEXT min.	35.3	–	40.3	35.8	44.3	38.3	47.3	41.3	48.3	42.3	51.3	45.3	44.3	33.8
	PS-NEXT min.	32.3	–	38.3	33.8	42.3	36.3	45.3	39.3	46.3	40.3	49.3	43.3	42.3	31.8
	PS-ACR min.	10.3	–	17.3	3.3	22.5	3.5	25.5	6.5	26.6	7.7	31.3	13.7	24.8	10.8
	PS-ELFEXT min.	20.8	–	24.8	18.8	24.8	16.8	27.8	19.8	28.0	20.0	32.8	24.8	62.5	52.0
	Return Loss min.	20.1	–	20.1	18.0	20.1	17.3	20.1	17.3	23.1	20.9	23.1	20.9	20.1	15.2
ANSI/TIA-568-C.2 Full Duplex Ethernet Specification for 1000 (Mbps BASE-TX) 500 MHz Broadband Video	Insertion Loss max.	22.0	–	21.0	30.5	19.8	32.8	19.8	32.8	19.7	32.6	18.0	29.6	19.0	45.3
	NEXT min.	35.3	–	40.3	35.8	44.3	38.3	47.3	41.3	48.3	42.3	51.3	45.3	44.3	33.8
	PS-NEXT min.	32.3	–	38.3	33.8	42.3	36.3	45.3	39.3	46.3	40.3	49.3	43.3	42.3	31.8
	PS-ACR min.	10.3	–	17.3	3.3	22.5	3.5	25.5	6.5	26.6	7.7	31.3	13.7	24.8	10.8
	PS-ELFEXT min.	20.8	–	24.8	18.8	24.8	16.8	27.8	19.8	28.0	20.0	32.8	24.8	62.5	52.0
	Return Loss min.	20.1	–	20.1	18.0	20.1	17.3	20.1	17.3	23.1	20.9	23.1	20.9	20.1	15.2
Technologies such as 10GBASE-T Operating over Category 6 Balanced Twisted Pair Cabling TSB-155 limited distance	Insertion Loss max.	22.0	–	21.0	30.5	19.8	32.8	19.8	32.8	19.7	32.6	18.0	29.6	19.0	45.3
	NEXT min.	35.3	–	40.3	35.8	44.3	38.3	47.3	41.3	48.3	42.3	51.3	45.3	44.3	33.8
	PS-NEXT min.	32.3	–	38.3	33.8	42.3	36.3	45.3	39.3	46.3	40.3	49.3	43.3	42.3	31.8
	PS-ACR min.	10.3	–	17.3	3.3	22.5	3.5	25.5	6.5	26.6	7.7	31.3	13.7	24.8	10.8
	PS-ELFEXT min.	20.8	–	24.8	18.8	24.8	16.8	27.8	19.8	28.0	20.0	32.8	24.8	62.5	52.0
	Return Loss min.	20.1	–	20.1	18.0	20.1	17.3	20.1	17.3	23.1	20.9	23.1	20.9	20.1	15.2
ANSI/TIA-568-C.2 Category 6A full 100 meters	Insertion Loss max.	22.0	–	21.0	30.5	19.8	32.8	19.8	32.8	19.7	32.6	18.0	29.6	19.0	45.3
	NEXT min.	35.3	–	40.3	35.8	44.3	38.3	47.3	41.3	48.3	42.3	51.3	45.3	44.3	33.8
	PS-NEXT min.	32.3	–	38.3	33.8	42.3	36.3	45.3	39.3	46.3	40.3	49.3	43.3	42.3	31.8
	PS-ACR min.	10.3	–	17.3	3.3	22.5	3.5	25.5	6.5	26.6	7.7	31.3	13.7	24.8	10.8
	PS ANEXT min.	20.8	–	24.8	18.8	24.8	16.8	27.8	19.8	28.0	20.0	32.8	24.8	62.5	52.0
	Return Loss min.	20.1	–	20.1	18.0	20.1	17.3	20.1	17.3	23.1	20.9	23.1	20.9	20.1	15.2
	Max. Test Freq.	200 MHz		400 MHz		550 MHz		650 MHz		650 MHz		750 MHz		750 MHz	

Not Recommended Recommended Exceeds Recommendation

F/UTP	5eLAN		MegaLAN		Cat 6		XGO†	
Test Freq. MHz	100	200	100	200	100	250	100	500
Insertion Loss max.	22.0	32.4	21.0	30.5	19.8	32.8	19.1	45.2
NEXT min.	36.3	31.8	40.3	35.8	44.3	38.3	44.3	33.8
PS-NEXT min.	32.3	27.8	38.3	33.8	42.3	36.3	42.3	31.8
PS-ACR min.	10.3	–	17.3	3.3	22.5	3.5	24.8*	10.8*
PS-ELFEXT min.	20.8	14.8	24.8	18.8	28.0	20.0	38.2**	24.2**
Return Loss min.	20.1	18.0	20.1	18.0	20.1	17.3	20.1	15.2

*PS ACRF **PS AACRF

†Augmented Category 6

Fiber Cable Selection Guide

Use the Grade Selector to determine which multimode fiber type best suits your application. Legacy and emerging networking protocols are identified and the guaranteed performance of each fiber is given along with the appropriate optical specifications.

Grade 1 Current installed base of cable. Not recommended for future installations except as patch cordage.

Grade 2 is a 62.5/125 fiber that complies with TIA-568-C.3 (ISO 11801 OM1) and provides up to 550-meter link lengths for Gigabit Ethernet. (Formerly AdvanceLite 300)

Grade 3 is a 62.5/125 fiber that complies with TIA-568-C.3 (ISO 11801 OM1)and provides up to 1000-meter link lengths for Gigabit Ethernet. (Formerly AdvanceLite 1000)

Grade 4 is a 50/125 fiber that complies with TIA-568-C.3 (ISO 11801 OM2) and provides 600-meter link lengths for Gigabit Ethernet. (Formerly AdvanceLite 600)

Grade 5 is a 50/125 fiber that complies with TIA-568-C.3 (ISO 11801 OM3) for 300-meter lengths at 10 Gigabit data rates. (Formerly AdvanceLite 2000)

Grade 6 is a 50/125 fiber that exceeds TIA-568-C.3-1 (ISO 11801 OM4) for 550-meter lengths at 10 Gigabit data rates.

		GRADE 2	GRADE 3	GRADE 4	GRADE 5	GRADE 6
Long Wavelength — 1300nm						
FDDI **100 BASE-F** **ATM 155**	Fiber Type	62.5/125	62.5/125	50/125	50/125	50/125
	OFL BW	500 MHz-km	500 MHz-km	500 MHz-km	500 MHz-km	500 MHz-km
	EMB BW	NS	NS	NS	NS	NS
	Distance	2 km	2 km	2 km	2 km	2 km
ATM 622	Fiber Type	62.5/125	62.5/125	50/125	50/125	50/125
	OFL BW	500 MHz-km	500 MHz-km	500 MHz-km	500 MHz-km	500 MHz-km
	EMB BW	NS	NS	NS	NS	NS
	Distance	500 meters	500 meters	500 meters	500 meters	500 meters
1000 BASE-LX	Fiber Type	62.5/125	62.5/125	50/125	50/125	50/125
	OFL BW	500 MHz-km	500 MHz-km	500 MHz-km	500 MHz-km	500 MHz-km
	EMB BW	NS	NS	NS	NS	NS
	Distance	550 meters	1000 meters	600 meters	600 meters	600 meters
10G BASE-LR/LW	Fiber Type	62.5/125	62.5/125	50/125	50/125	50/125
	OFL BW	500 MHz-km	500 MHz-km	500 MHz-km	500 MHz-km	500 MHz-km
	EMB BW	NS	NS	NS	NS	NS
	Distance	300 meters	300 meters	300 meters	300 meters	300 meters
Short Wavelength — 850nm						
10 BASE-F **TOKEN RING**	Fiber Type	62.5/125	62.5/125	50/125	50/125	50/125
	OFL BW	200 MHz-km	200 MHz-km	500 MHz-km	1500 MHz-km	3000 MHz-km
	EMB BW	220 MHz-km	385 MHz-km	510 MHz-km	2000 MHz-km	4700 MHz-km
	Distance	2km	2km	2km	2km	2km
FIBRE CHANNEL 531	Fiber Type	62.5/125	62.5/125	50/125	50/125	50/125
	OFL BW	200 MHz-km	200 MHz-km	500 MHz-km	1500 MHz-km	3000 MHz-km
	EMB BW	220 MHz-km	385 MHz-km	510 MHz-km	2000 MHz-km	4700 MHz-km
	Distance	350 meters	350 meters	1500 meters	2km	2km
FIBRE CHANNEL 1063	Fiber Type	62.5/125	62.5/125	50/125	50/125	50/125
	OFL BW	200 MHz-km	200 MHz-km	500 MHz-km	1500 MHz-km	3000 MHz-km
	EMB BW	220 MHz-km	385 MHz-km	510 MHz-km	2000 MHz-km	4700 MHz-km
	Distance	175 meters	175 meters	500 meters	1500 meters	1500 meters
1000 BASE-SX	Fiber Type	62.5/125	62.5/125	50/125	50/125	50/125
	OFL BW	200 MHz-km	200 MHz-km	500 MHz-km	1500 MHz-km	3000 MHz-km
	EMB BW	220 MHz-km	385 MHz-km	510 MHz-km	2000 MHz-km	4700 MHz-km
	Distance	300 meters	500 meters	600 meters	1km	2km
10G BASE-SR/SW	Fiber Type	62.5/125	62.5/125	50/125	50/125	50/125
	OFL BW	200 MHz-km	200 MHz-km	500 MHz-km	1500 MHz-km	3000 MHz-km
	EMB BW	220 MHz-km	385 MHz-km	510 MHz-km	2000 MHz-km	4700 MHz-km
	Distance	35 meters	35 meters	85 meters	300 meters	550 meters

Technical Advisory

Effect of Paint on Cables

Mohawk has had their jacket compound supplier's lab analyze the effects that paint has on the cable compounds to see what potential issues we could expect with painted cables. Due to the chemicals involved in the PVC jacket compound and the chemicals used in the paint, the supplier would not be able to confirm, without extensive long-term testing across multiple paint brands, the possible effects this may have on the cables. Further, they would not recommend Mohawk providing any guarantees due to potential adverse effects of the painted cable over time. Complicating this are the vast number of paint brands, available from both domestic and international sources.

Paint can have a detrimental effect on cables if there are chemicals in the paint that attack the jacket material. The jacket is the primary flame barrier preventing a fire from spreading into areas not initially involved in the fire. The paint can act as a source of combustible materials that is not accounted for in assigning flame ratings to the cable. Paint on the cable will also make it difficult for inspectors to see the print to identify the cable safety listing.

If the cable has already been painted, Mohawk can no longer warranty the cable's ability to perform to the mechanical, electrical, optical and environmental requirements. The owner will have to assume the liability should the cable fail in the future.

Removing the paint may have even more of a detrimental impact on the cable and is not recommended and will also void the warranty.

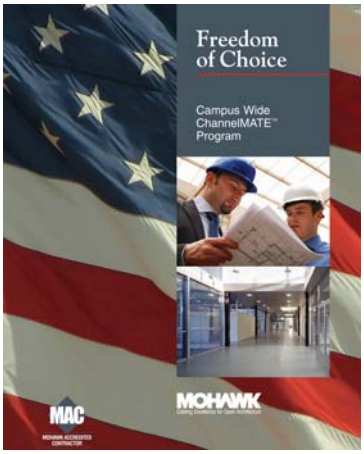
For these reasons, Mohawk will not be responsible for holding the warranty on the cables in question.

Should you have any questions or require additional information please do not hesitate to call 1-800-422-9961.

This and other Technical Advisories (TAs) are available on our website at www.mohawk-cable.com under Support/Technical Advisories.

Campus-Wide ChannelMATE™ Program

Freedom of Choice – MAC Accredited Contractor Program



The ANSI/TIA-568-C.2 documents states "This Standard specifies a generic telecommunication cabling system for commercial buildings that will support a multi-product, multi-vendor environment". Mohawk not only embraces this standard, it has adopted and incorporated the Standard's purpose into our "Open Architecture" philosophy.

Mohawk is dedicated to Open Architecture which allows flexible and warranted options for your complete Campus-Wide network system installation. Mohawk's ChannelMATE warranty combines Mohawk's high performance cable with our connectivity partners and a large network of MACs (Mohawk Accredited Contractors).

ChannelMATE is offered exclusively through our MAC contractor network to ensure your system is designed and installed to meet the specified performance grade and performance requirements of ANSI/TIA-568-C.2.

Warranty Information

Mohawk is dedicated to Open Architecture which allows flexible and warranted options for your network system. All Mohawk products have been independently third-party verified for performance to the applicable category grade, and we will warranty these products with any connectivity that is also independently third-party verified.

Mohawk offers two levels of warranty protection:

Standard Warranty (for non-MAC contractors)

Mohawk's Standard Warranty guarantees our products are free from material and workmanship defects one (1) year from shipment. The warranty covers performance on products that receive normal and proper use and due care and handling. To obtain complete warranty information, contact Mohawk at 800-422-9961 or visit our website www.mohawk-cable.com.

ChannelMATE® 25-Year Extended Warranty

Mohawk's ChannelMATE warranty is offered exclusively through our network of MAC contractors. By using one of Mohawk's MAC-certified contractors, you are ensured that the work is performed to current industry standards and accepted practices. The MAC training program has recently been modified with the latest TIA standards and practices including Augmented Category 6 performance and installation requirements.

Connectivity Partners

Mohawk's Open Architecture ChannelMATE warranty is in alliance with the following connectivity partners:

Copper Products:

- Hubbell Premise Wiring Inc.*
- Leviton Premise Wiring Inc.*
- Molex Incorporated
- Ortronics
- Panduit Network Systems Division
- The Siemon Company
- AllenTel
- Other Third Party–Verified Performance Products

Fiber Products:

- Corning Cable Systems
- Hubbell Premise Wiring Inc.*
- Leviton Premise Wiring Inc.*
- Ortronics
- Panduit Network Systems Division
- The Siemon Company
- Other Third Party–Verified Performance Products

For the warranty to be in effect, Mohawk requires the connectivity components to be independently third-party verified to the specified ANSI/TIA 568-C category performance grade. The system must be designed and installed to meet the specified performance grade and performance requirements of ANSI/TIA 568-C. Supporting field test documentation is required for each warranty link.

**Note: Indicates propriety program partners*

Packaging

Color Coded Cartons for Ease of Category Identification

Easybox For Category 3–6 UTP Cables

The cable is packaged directly in the box and dispenses in a tangle-free payout, as if on a reel, in 1000 ft. lengths.

Cable Caddy — Reel-in-a-box For Category 3–6 UTP Cables

The 1000 ft. length of cable is placed on a plastic reel and is dispensed from the front of the Cable Caddy.

Category 3–6 cables are also available on standard 1000 ft. reels.

Reels

Mohawk's standard UTP and F/UTP copper cables are available on 1000 ft. reels from inventory. Non-standard cables are available in customer specified lengths as well as 1000 ft. reels.

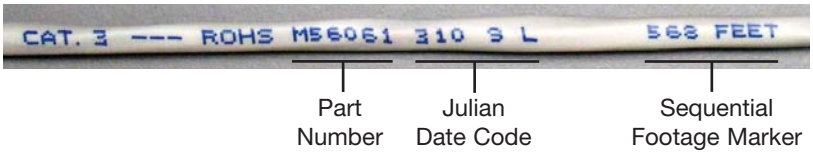
Fiber Optic Cables

Mohawk's fiber optic cable is supplied on reels only and is available in specified lengths with a –0+10% tolerance on standard size reels. Non-standard put-ups are available on request.

Smart Legend®

Mohawk's Smart Legend includes:

- Product Identification
- Safety & Verification Listing
- Part Number
- Julian Date Code for Traceability
- Reverse Sequential Footage Marker



Shipping & Packaging Guide

Cat 5e 5eLAN® • Cat 5E MegaLAN®

Package	Number Per Pallet	Size of Pallet
12" Reels	60	38" X 48"
Boxes (13⅞"W x 10¼"D x 12½"H)	36	44" X 44"
Reel-in-a-box (11⅞"W x 11⅜"D x 11⅞"H)	36	38" X 48"
5e PVC Box (14¼"W x 14¼"D x 7⅝"H)	45	42" X 48"

Cat 6 6 LAN™ • Cat 6e AdvanceNet®
Cat 6 6 LAN™ Plus

14" Reels	36	42" X 42"
Boxes (15½"W x 11¼"D x 14¼"H)	33	45" X 48"
Reel-in-a-box (12¾"W x 12¾"D x 12⅝"H)	27	42" X 42"

Cat 6E GigaLAN®

Package	Number Per Pallet	Size of Pallet
14" Reels	36	42" X 42"
Reel-in-a-box (12¾"W x 12¾"D x 12⅝"H)	27	42" X 42"

Augmented Cat 6 • Giga*LAN 10*® • XGO™

20" Reels	20	42" X 42"

Additional Reel Sizes

16"	27	48" X 48"
18"	15	44" X 44"
20"	8	42" X 42"
22"	8	42" X 42"
24"	8	48" X 48"

High Pair Count Reel Put-ups

Cat 3

		Riser UTP		Plenum UTP	
Pair Count	Put-up	Reel Size	Gross Weight (lbs.)	Reel Size	Gross Weight (lbs.)
25	1000 ft.	18 x 10.5 x 8	96.1	18 x 10.5 x 8	107.21
25	5000 ft.	36 x 12 x 10	471	36 x 12 x 10	526.55
25	10000 ft.	36 x 20 x 10	1087	36 x 20 x 13	979
50	1000 ft.	24 x 12 x 10	189.9	24 x 14 x 10	224
50	5000 ft.	38 x 20 x 13	994.5	45 x 20 x 13	1159.64
100	1000 ft.	36 x 12 x 10	376.5	36 x 12 x 10	436.4
100	4000 ft.*	50 x 28 x 24	1849	50 x 28 x 24	4000
100	5000 ft.*	50 x 28 x 24	1930	—	—
200	1000 ft.	36 x 20 x 13	782.5	38 x 20 x 13	908.7
300	1000 ft.	45 x 20 x 13	1164.45	50 x 28 x 24	1407.1

* Maximum capacity for this cable

25-pair Cat 5 & 5e Power Sum

Plenum	Gross Weight
22" Reel 1000 ft.	131 lbs.
30" Reel 2000 ft.	262 lbs.
36" Reel 5000 ft.	655 lbs.

Riser	Gross Weight
24" Reel 1000 ft.	119 lbs.
36" Reel 2000 ft.	245 lbs.
48" Reel 5000 ft.	640 lbs.

Locator

Locator

ANSI/TIA-568-C.2 Performance Reference Tables

Insertion Loss or Attenuation (Signal Strength)

Insertion Loss, expressed as a figure in dB, directly impacts the signal strength. All cables have loss but some **are better** than others. The loss is primarily controlled by the amount of copper (AWG size) in the conductor and the conductor length. Since all manufacturers have the similar constraints in the size of copper, this parameter, though important, is more restricted from a design point of view. When comparing specifications, the loss value at each of the key frequencies should be equal to or better then the TIA standard. It is desirable to have cables with less loss, a smaller number.

- Loss — the smaller the dB the better

Frequency (MHz)	Category 3 (dB)	Category 5e (dB)	Category 6 (dB)	Category 6A (dB)
0.772	2.2	n/s	n/s	n/s
1.00	2.6	2.0	2.0	2.1
4.00	5.6	4.1	3.8	3.8
8.00	8.5	5.8	5.3	5.3
10.00	9.7	6.5	6.0	5.9
16.00	13.1	8.2	7.6	7.5
20.00	-	9.3	8.5	8.4
25.00	-	10.4	9.5	9.4
31.25	-	11.7	10.7	10.5
62.50	-	17.0	15.4	15.0
100.00	-	22.0	19.8	19.1
200.00	-	-	29.0	27.6
250.00	-	-	32.8	31.1
300.00	-	-	-	34.3
400.00	-	-	-	40.1
500.00	-	-	-	45.3

Near End Crosstalk (NEXT) (Noise)

Near End Crosstalk, expressed as a figure in dB, is the result of one pair coupling some amount of signal energy (Noise) into an adjacent pair in the same cable. In a simplex system the noise source is the near end transmitter and the target is the near end receiver. Noise is undesirable, so the better the cable is able to minimize the crosstalk (noise coupling between pairs) the less the impact on Transmission Quality. Cable design, specifically the lay length of the individual pairs in relation to each other, has the greatest impact on NEXT performance isolation. Additionally, many Category 6 and above constructions use a physical barrier (Rod, Tape or Cross web) placed between the pairs to minimize NEXT. Improved NEXT is the first line of defense in preserving signal quality. It is easier for the cable designer to reduce the noise or crosstalk than it is to increase the signal strength. This makes NEXT one of the most important parameters.

- NEXT — the bigger the dB the better

Frequency (MHz)	Category 3 (dB)	Category 5e (dB)	Category 6 (dB)	Category 6A (dB)
0.772	43.0	n/s	n/s	n/s
1.00	41.3	65.3	74.3	74.3
4.00	32.3	56.3	65.3	65.3
8.00	27.8	51.8	60.8	60.8
10.00	26.3	50.3	59.3	59.3
16.00	23.2	47.2	56.2	56.2
20.00	-	45.8	54.8	54.8
25.00	-	44.3	53.3	53.3
31.25	-	42.9	51.9	51.9
62.50	-	38.4	47.4	47.4
100.00	-	35.3	44.3	44.3
200.00	-	-	39.8	39.8
250.00	-	-	38.3	38.3
300.00	-	-	-	37.1
400.00	-	-	-	35.3
500.00	-	-	-	33.8

PSNEXT Power Sum NEXT (Noise)

Power Sum crosstalk, expressed as a figure in dB, measures how much coupling or noise can be contributed to one pair in the cable as a result of signals coupling **from all the other pairs within the same cable**. In other words, if multiple pairs in the cable are used to transmit a portion of the data then each of the other pairs will be impacted by the noise created by the crosstalk between all the pairs internal to the cable. The better the cable's ability to isolate one pair from another, either by changes in pair lay or a physical barrier between pairs, the less coupling impact there is on adjacent pairs.

- Power Sum NEXT — the bigger the dB the better

Frequency (MHz)	Category 3 (dB)	Category 5e (dB)	Category 6 (dB)	Category 6A (dB)
1.00	n/s	62.3	72.3	72.3
4.00	n/s	53.3	63.3	63.3
8.00	n/s	48.8	58.8	58.8
10.00	n/s	47.3	57.3	57.3
16.00	n/s	44.2	54.2	54.2
20.00	-	42.8	52.8	52.8
25.00	-	41.3	51.3	51.3
31.25	-	39.9	49.9	49.9
62.50	-	35.4	45.4	45.4
100.00	-	32.3	42.3	42.3
200.00	-	-	37.8	37.8
250.00	-	-	36.3	36.3
300.00	-	-	-	35.1
400.00	-	-	-	33.3
500.00	-	-	-	31.8

Attenuation to Crosstalk Ratio, Far End (ACRF)

Attenuation to Crosstalk Ratio is the difference, expressed as a figure in dB, between the signal attenuation produced in a pair and the near-end crosstalk (NEXT). ACRF is also referred to as headroom. Attenuation and crosstalk must both be minimized in order for a signal to be received with an acceptable bit error rate. ACR is a quantitative indicator of how much stronger the attenuated signal is than the crosstalk at the destination (receiving) end of a communications circuit. The ACR figure must be at least several decibels for proper performance. If the ACR is not large enough, errors will be frequent. In many cases, even a small improvement in ACR can cause a dramatic reduction in the bit error rate.

- ACRF — the bigger the dB the better

Frequency (MHz)	Category 3 (dB)	Category 5e (dB)	Category 6 (dB)	Category 6A (dB)
1.00	n/s	63.8	67.8	67.8
4.00	n/s	51.8	55.8	55.8
8.00	n/s	45.7	49.7	49.7
10.00	n/s	43.8	47.8	47.8
16.00	n/s	39.7	43.7	43.7
20.00	-	37.8	41.8	41.8
25.00	-	35.8	39.8	39.8
31.25	-	33.9	37.9	37.9
62.50	-	27.9	31.9	31.9
100.00	-	23.8	27.8	27.8
200.00	-	-	21.8	21.8
250.00	-	-	19.8	19.8
300.00	-	-	-	18.3
400.00	-	-	-	15.8
500.00	-	-	-	13.8

ANSI/TIA-568-C.2 Performance Reference Tables

Power Sum Attenuation to Crosstalk Ratio, Far End (ACRF)

Power Sum ACR (PSACR) expressed as a figure in dB, is done in the same way as ACR, but using the PSNEXT value in the calculation rather than NEXT.

- ACRF — the bigger the dB the better

Frequency (MHz)	Category 3 (dB)	Category 5e (dB)	Category 6 (dB)	Category 6A (dB)
1.00	n/s	60.8	64.8	64.8
4.00	n/s	48.8	52.8	52.8
8.00	n/s	42.7	46.7	46.7
10.00	n/s	40.8	44.8	44.8
16.00	n/s	36.7	40.7	40.7
20.00	-	34.8	38.8	38.8
25.00	-	32.8	36.8	36.8
31.25	-	30.9	34.9	34.9
62.50	-	24.9	28.9	28.9
100.00	-	20.8	24.8	24.8
200.00	-	-	18.8	18.8
250.00	-	-	16.8	16.8
300.00	-	-	-	15.3
400.00	-	-	-	12.8
500.00	-	-	-	10.8

Delay

Delay of a signal is measured in nanoseconds per 100 meters (ns/100m). In the cable it is a function of individual pair length; the longer the pair length in the cable, the greater delay. Delay is not critical to transmission quality as long as it is less than the maximum allowed for the channel. Values shown are for delay.

Skew

Skew is a measure of the difference in signal delay between the fastest pair and the slowest pair in a cable. This happens because the twists rate of each pair is slightly different and the delay is therefore different. The electronics can handle a maximum of 45 nanoseconds of skew. Skew is not a critical parameter as long as it is less than 45 nanoseconds between any adjacent pairs within a cable.

Frequency (MHz)	Category 3 (dB)	Category 5e (dB)	Category 6 (dB)	Category 6A (dB)
1.00	570	570	570	570
4.00	552	552	552	552
8.00	547	547	547	547
10.00	545	545	545	545
16.00	543	543	543	543
20.00	-	542	542	542
25.00	-	541	541	541
31.25	-	540	540	540
62.50	-	539	539	539
100.00	-	538	538	538
200.00	-	-	537	537
250.00	-	-	536	536
300.00	-	-	-	536
400.00	-	-	-	536
500.00	-	-	-	536

Power Sum Alien Near End Crosstalk (PSANEXT)

PSANEXT, expressed as a figure in dB, is the sum of electromagnetic interference, noise coupling, from pairs in one cable to pairs in an adjacent cable. It approximates the energy present when all cabling pairs in a bundle (lab environment) or close proximity (tray or jay hooks real world) to each other are energized. High power sum alien crosstalk compromises the operation of the 10GBASE-T application by significantly reducing expected signal-to-noise (SNR) margins and potentially causing re-transmissions or even auto-negotiation of the switch to a lower Ethernet speed. Power sum alien crosstalk measured at the near-end of the transmitter is called power sum alien near-end crosstalk loss (PSANEXT loss).

- PSANEXT — the bigger the dB the better

Frequency (MHz)	Category 3 (dB)	Category 5e (dB)	Category 6 (dB)	Category 6A (dB)
1.00	n/s	n/s	n/s	67.0
4.00	n/s	n/s	n/s	67.0
8.00	n/s	n/s	n/s	67.0
10.00	n/s	n/s	n/s	67.0
16.00	n/s	n/s	n/s	67.0
20.00	-	n/s	n/s	67.0
25.00	-	n/s	n/s	67.0
31.25	-	n/s	n/s	67.0
62.50	-	n/s	n/s	65.6
100.00	-	n/s	n/s	62.5
200.00	-	-	n/s	58.0
250.00	-	-	n/s	56.5
300.00	-	-	-	55.3
400.00	-	-	-	53.5
500.00	-	-	-	52.0

Power Sum Attenuation to Alien Crosstalk Ratio Far End (PSAACRF or PSELFEXT)

Power Sum Attenuation to Alien Crosstalk Ratio Far End (PSAACRF), expressed as a figure in dB, is similar to ELFEXT or ACRF Attenuation to Crosstalk Ratio Far End above, except it sums the energy (adjacent pair noise) of the pairs from the adjacent cables measured at the far-end of the transmitter.

- PSAACRF — the bigger the dB the better

Frequency (MHz)	Category 3 (dB)	Category 5e (dB)	Category 6 (dB)	Category 6A (dB)
1.00	n/s	n/s	n/s	67.0
4.00	n/s	n/s	n/s	66.2
8.00	n/s	n/s	n/s	60.1
10.00	n/s	n/s	n/s	58.2
16.00	n/s	n/s	n/s	54.1
20.00	-	n/s	n/s	52.2
25.00	-	n/s	n/s	50.2
31.25	-	n/s	n/s	48.3
62.50	-	n/s	n/s	42.3
100.00	-	n/s	n/s	38.2
200.00	-	-	n/s	32.2
250.00	-	-	n/s	30.2
300.00	-	-	-	28.7
400.00	-	-	-	26.2
500.00	-	-	-	24.2

Conduit Fill Guide

Plenum

Cable	Type	O.D.	No. of Cables at 40% Conduit Fill Based on Trade Size of the Conduit (inches)								
			0.75	1	1.25	1.5	2	2.5	3	3.5	4
Augmented Category 6											
XG0	4 pr UTP	0.340	2	3	5	7	14	21	31	42	55
Giga*LAN 10*	4 pr UTP	0.295	2	4	7	10	18	28	41	56	73
Category 6E											
GigaLAN	4 pr UTP	0.244	3	6	10	15	27	42	60	82	107
Category 6e											
AdvanceNet	4 pr UTP	0.228	4	7	12	17	30	48	69	94	123
6 LAN Plus	4 pr UTP	0.208	5	9	14	21	37	57	83	113	148
Category 6											
Cat 6	4 pr F/UTP	0.255	3	6	9	14	24	38	55	75	98
6 LAN	4 pr UTP	0.208	5	9	14	21	37	57	83	113	148
Category 5E											
MegaLAN	4 pr UTP	0.190	6	11	17	25	44	69	99	135	177
MegaLAN	4 pr F/UTP	0.224	4	8	12	18	32	50	71	97	127
Category 5e											
5eLAN	4 pr UTP	0.185	6	11	18	26	46	73	105	143	187
5eLAN	4 pr F/UTP	0.218	4	8	13	19	33	52	75	103	134
5eLAN	25 pr UTP	0.430	1	2	3	5	8	13	19	26	34
5eLAN	25 pr F/UTP	0.472	1	1	2	4	7	11	16	22	28
Category 5											
Cat 5	4 pr UTP	0.180	7	12	19	27	49	77	111	151	197
Cat 5	4 pr F/UTP	0.230	4	7	12	17	30	47	68	92	121
Cat 5	25 pr UTP	0.430	1	2	3	5	8	13	19	26	34
Cat 5	25 pr F/UTP	0.472	1	1	2	4	7	11	16	22	28
Category 3											
Cat 3	4 pr UTP	0.161	8	15	24	34	61	96	139	189	247
Cat 3	4 pr F/UTP	0.189	6	11	17	25	44	70	100	137	179
Cat 3	25 pr UTP	0.389	1	2	4	6	10	16	23	32	42
Cat 3	25 pr F/UTP	0.346	2	3	5	7	13	21	30	41	53
Cat 3	50 pr UTP	0.550	0	1	2	3	5	8	12	16	21
Cat 3	100 pr UTP	0.786	0	0	1	1	2	4	6	8	10
Cat 3	200 pr UTP	1.088	0	0	0	0	1	2	3	4	5
Cat 3	300 pr UTP	1.334	0	0	0	0	1	1	2	2	3

Riser

Cable	Type	O.D.	No. of Cables at 40% Conduit Fill Based on Trade Size of the Conduit (inches)								
			0.75	1	1.25	1.5	2	2.5	3	3.5	4
Augmented Category 6											
XG0	4 pr UTP	0.340	2	3	5	7	14	21	31	42	55
Giga*LAN 10*	4 pr UTP	0.295	2	4	7	10	18	28	41	56	73
Category 6E											
GigaLAN	4 pr UTP	0.247	3	6	10	14	26	41	59	80	105
Category 6e											
AdvanceNet	4 pr UTP	0.225	4	8	12	17	31	49	71	96	126
6 LAN Plus	4 pr UTP	0.212	5	9	14	20	35	55	80	109	142
Category 6											
Cat 6	4 pr F/UTP	0.265	3	5	9	13	22	35	51	69	91
6 LAN	4 pr UTP	0.212	5	9	14	20	35	55	80	109	142
Category 5E											
MegaLAN	4 pr UTP	0.190	6	11	17	25	44	69	99	135	177
MegaLAN	4 pr F/UTP	0.245	3	6	10	15	26	41	60	81	106
Category 5e & 5											
5eLAN & 5	4 pr UTP	0.190	6	11	17	25	44	69	99	135	177
5eLAN & 5	4 pr F/UTP	0.232	4	7	11	16	29	46	67	91	119
5eLAN & 5	25 pr UTP	0.470	1	2	3	4	7	11	16	22	29
5eLAN & 5	25 pr F/UTP	0.522	1	1	2	3	6	9	13	18	23
5eLAN & 5	50 pr UTP	0.750	0	0	1	1	3	4	6	8	11
Category 3											
Cat 3	4 pr UTP	0.161	8	15	24	34	61	96	139	189	247
Cat 3	4 pr F/UTP	0.210	5	9	14	20	36	56	81	111	145
Cat 3	25 pr UTP	0.364	1	3	4	6	12	19	27	37	48
Cat 3	25 pr F/UTP	0.394	1	2	4	5	10	16	23	31	41
Cat 3	50 pr UTP	0.591	0	1	1	2	4	7	10	14	18
Cat 3	100 pr UTP	0.707	0	1	1	2	3	5	7	10	13
Cat 3	200 pr UTP	1.054	0	0	0	1	1	2	3	4	5
Cat 3	300 pr UTP	1.222	0	0	0	0	1	1	2	3	4
VersaLAN											
Cat 6	4 pr UTP	0.271	3	5	8	12	21	34	49	66	87
Cat 5e	4 pr UTP	0.251	3	6	10	14	25	39	57	77	101
Cat 5e	25 pr F/UTP	0.730	0	0	1	1	3	4	6	9	12

Mohawk reserves the right to revise any specifications in the interest of product enhancement.

Mohawk will not be responsible for holding the warranty on painted cables. For more information please see page 58 or see our Technical Advisory on our website.

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