master catalog

Cabling Excellence for Open Architecture

08

MOHAWK

Open Architecture cabling solutions for the most crucial applications: yours.

The data communications explosion that preceded the new millennium now drives an ever-increasing demand for high-quality cabling solutions that serve a wide range of applications. Speed and bandwidth requirements seem to grow exponentially from year to year, while data reliability and network integrity are more critical than ever.

A "Lean" approach to inceasing value

As part of a commitment to meeting or exceeding industry requirements, Mohawk's transition from batch to cell manufacturing includes the modern methodologies of Lean Manufacturing. This continuous improvement approach is designed to align all processes to customer demand, with the end result of reducing waste and increasing value to customers.

Mohawk's copper cable construction goes beyond four-pair to include a complete line of high-pair cables, through 400-pair. We offer a comprehensive fiber line with counts ranging from 1 to 216 in multimode and single-mode, as well as hybrid constructions that include 10-Gigabit Ethernet-ready fiber. New cables are being developed to further advance protocols such as voice over IP (VoIP), streaming video, and multimedia (voice/data/video) applications. In addition, Mohawk continues to branch out into diversified specialty markets.

As a leader in the Network Cabling industry, Mohawk holds multiple technology patents (90 US and 122 foreign) governing our product's construction to deliver the performance our customers have come to expect. We are proud to be part of the Belden family with our New Products Design Teams enjoying complete access to the resources of the entire Belden organization. It is this commitment that will keep Mohawk at the forefront of Network Cabling Technology.

Open architecture for optimum compatibility and performance

Mohawk's open architecture allows a choice of system components with end-to-end interoperability, ensuring the highest performance from backbone to outlet, letting the governing standards work for you. Designers and end-users can "mix-and-match," creating a customized, scalable network from a variety of connectivity products that have been third-party verified to meet or exceed the latest industry standards.

One source for all your DataCom cabling needs

Mohawk supports network designers and contractors with a broad line of copper and fiber optic cables that serve diverse application needs. You can specify our products with the confidence of full standards compliance and, through our accreditation program, offer your customers installations that are warranted for 25 years.

Data Centers

Our next-generation cabling solutions are ideally suited for evolving applications such as enterprise data centers. These high-traffic installations require maximum data speeds, high bandwidth, and the expandability afforded by open architecture. Mohawk's innovative copper and fiber optic designs offer state-of-the-art performance and reliability that are independently verified to meet or exceed industry standards.

Harsh Environments

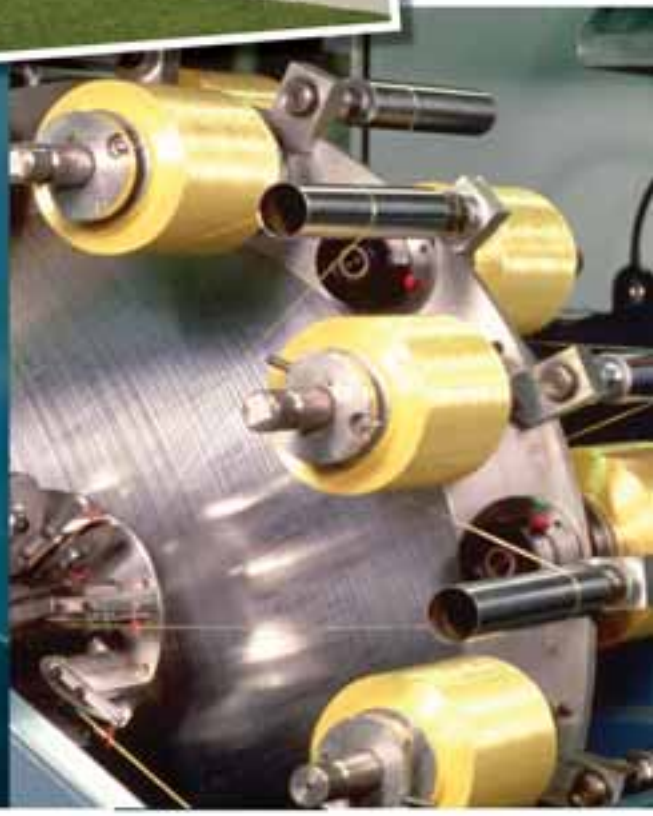
Our high-durability industrial-grade cables are designed to withstand EMI, fluctuating temperatures, abrasion, crushing, vibration, chemicals, oil and other fluids, flame, and prolonged UV exposure. For longer distances and higher bandwidth requirements, Mohawk's line of fiber optic cables feature chemical-resistant and flame-retardant outer jackets for outdoor aerial, ducts, and burial applications.

Outside Plant

Mohawk offers a full line of cabling designed for exposure to the elements, including direct burial, outdoor aerial/duct lashing, and other outdoor applications. Our LAN-Trak OSP Category 6, 5e, and 5 cables are jacketed with UV-resistant polyethylene and flooded with installer-friendly gel for moisture protection. Rodent-resistant cables and economical, fully water-blocked cables are also available.

Campuses

Mohawk offers a variety of high-performance cabling solutions for meeting the demands of today's college campuses and universities. Open architecture offers flexibility for creating unique, campus-specific networks and integrating them with existing networks and communications infrastructure. Advanced cabling supports libraries, dormitory data centers, and other campus facilities with speed, reliability, and upgradeability.



Broadcast

Mohawk offers a complete line of ruggedized cables to meet the most demanding broadcast applications. Whether your venue requires fiber, SMPTE HD, or Triax, we have a product that delivers the performance and durability you need. Mohawk is an approved source of camera cable assemblies for all major manufacturers of professional camera systems.

Security

Technology in the security sector is evolving at a rapid pace. Mohawk keeps security companies at the forefront of their industry with cabling solutions such as strong-signal-strength coax for high-definition video surveillance. These cables also offer excellent performance for standard video cameras, protecting investment in existing systems while facilitating future upgrades. We offer a complete line of twisted pair solutions for PoE surveillance and copper/fiber composites.

Government/Military

Mohawk is proud to support the mission-critical requirements of government and military/DOD cable installations. Rugged fiber optic tactical cables are designed to military specifications and offer superior crush resistance and impact resistance. Whether the application is bandwidth-intensive, designed for field deployment, or both, Mohawk offers a best-in-class cabling solution.

Open Architecture

Guaranteed Cabling Excellence

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 warranteed 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 Channel/Mate® program. Through our extensive Mohawk training, contractors can earn the System MATE® accreditation. Becoming a System MATE® contractor allows them to offer Mohawk's Channel/MATE® 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 Channel/MATE® warranteed system, the end-user is provided with all test results, confirming that the installed system meets or exceeds the latest TIA/EIA-568-B 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.

Channel/MATE® guarantees that the cable and connectivity meet the specified backbone and horizontal system specifications as defined in TIA/EIA-568-B. All parts and labor are guaranteed for 25 years.

- 5e LAN
- Copper Backbone
- MegaLAN
- 6 LAN
- Fiber Optic
- AdvanceNet
- GigaLAN
- Giga*LAN 10*

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UTP Cables

F/UTP Cables

UTP & F/UTP Cables

Special Application Cables

Broadcast Cables

Fiber Optic Cables

Technical Section

RoHS

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

ISO 9001:2000 CERTIFIED

Augmented Cat 6 UTP GigaLAN 10®

Tested to 750 MHz

GigaLAN 10, the highest performance Augmented Category 6 cable, supports 10GBASE-T applications over a full 100-meter channel, exceeding the requirements of the current Draft of ANSI/TIA/EIA-568-B.2-10. IEEE 802.3an is looking beyond the present, specifying an operating range from 1-500 MHz.

GigaLAN 10's unique FlexWeb® combined with patented fluted jacket construction isolates the cable pairs and has outstanding pair-to-pair balance for superior headroom and reduced crosstalk.

- **25 Year Warranty***
- **Increase in power to 500 MHz due to lower insertion loss characteristics than Category 6**
- **Improvement in NEXT and ACRF vs. draft Category 6A** – 1 dB minimum for NEXT and 3 dB minimum for ACRF.
- **Application** – Support for 10 Gigabit Ethernet / 10GBASE-T / IEEE 802.3an; fully backwards compatible for 10BASE-T, 100BASE-T, and 1000BASE-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 and System MATE® programs.

Electrical Characteristics

STANDARDS:
EXCEEDS DRAFT TIA 568-B.2-10 CAT 6A, DRAFT ISO/IEC 11801:2002 AMEND 1 CAT 6A & DRAFT IEC 61156-5 CAT 6A 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:
33 pF/100m (100 pF/Mft) MAX

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

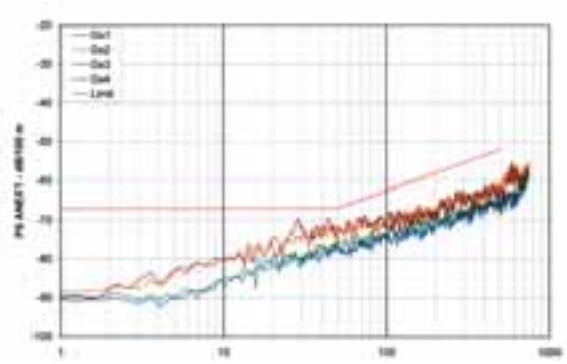
INPUT IMPEDANCE:
100 Ω ±10% (1-100 MHz)
100 Ω ±15% (>100-350 MHz)
100 Ω ±22% (>350 MHz)

PROPAGATION DELAY SKEW:
35 ns/100m MAX

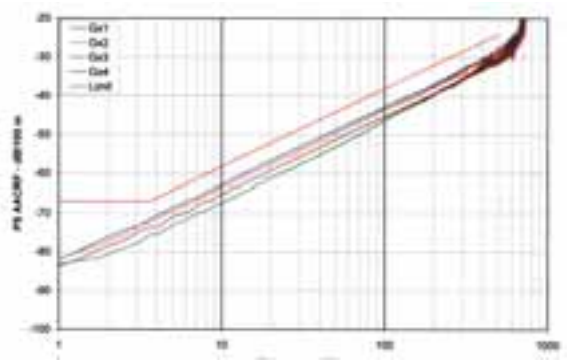
NOMINAL VELOCITY OF PROPAGATION (NVP):

PLENUM	72%
NON-PLENUM	68%

Power Sum Alien NEXT



Power Sum Alien ACRF

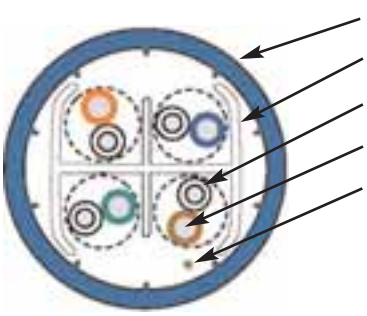


Safety listed to NEC (NFPA 70)

Verified by ETL to TIA/EIA-568-B.2-10

MOHAWK COPPER PRODUCTS

Now! with Reduced O.D.



Conduit & Cable Tray Fill Comparison Chart

	Old OD .320"	New OD .295"
1.5" conduit	9 cables	**10 cables**
2" conduit	15 cables	**18 cables**
3" conduit	35 cables	**41 cables**
4" conduit	62 cables	**73 cables**
12" cable tray*	447 cables	**562 cables**
24" cable tray*	955 cables	**1124 cables**
36" cable tray*	1432 cables	**1686 cables**

**4" deep cable tray*

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
.772	1.8	77.0	75.0	-	-	-	-	-	-
1.0	2.0	75.3	73.3	70.8	68.8	20.0	570.0	67.0	67.0
4.0	3.7	66.3	64.3	58.8	56.8	24.2	552.0	67.0	66.2
8.0	5.2	61.8	59.8	52.7	50.7	26.3	546.7	67.0	60.1
10.0	5.9	60.3	58.3	50.8	48.8	27.0	545.4	67.0	58.2
16.0	7.4	57.2	55.2	46.7	44.7	27.0	543.0	67.0	54.1
20.0	8.3	55.8	53.8	44.8	42.8	27.0	542.0	67.0	52.2
25.0	9.3	54.3	52.3	42.8	40.8	26.3	541.2	67.0	50.2
31.25	10.4	52.9	50.9	40.9	38.9	25.6	540.4	67.0	48.3
62.5	14.9	48.4	46.4	34.9	32.9	23.5	538.6	65.6	42.3
100.0	19.0	45.3	43.3	30.8	28.8	22.1	537.6	62.5	38.2
155.0	24.0	42.4	40.4	27.0	25.0	20.8	536.9	59.6	34.4
200.0	27.5	40.8	38.8	24.8	22.8	20.0	536.5	58.0	32.2
250.0	31.0	39.3	37.3	22.8	20.8	19.3	536.3	56.5	30.2
300.0	34.2	38.1	36.1	21.3	19.3	18.8	536.1	55.3	28.7
350.0	37.2	37.1	35.1	19.9	17.9	18.3	535.9	54.3	27.3
400.0	40.0	36.3	34.3	18.8	16.8	17.9	535.8	53.5	26.2
500.0	45.3	34.8	32.8	16.8	14.8	17.2	535.6	52.0	24.2
550.0	47.7	34.2	32.2	-	-	16.9	-	-	-
600.0	50.1	33.6	31.6	-	-	16.7	-	-	-
650.0	52.4	33.1	31.1	-	-	16.4	-	-	-
750.0	56.8	32.2	30.2	-	-	16.0	-	-	-

Values above 500 MHz are for engineering information only.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	Jacket Type Diameter mm	Weight lbs/M'	Weight kg/km	Listings
M58651 Non-Plenum	4 PAIR 23 AWG UTP	Thermoplastic	White PVC .295	7.49	45	67	C(UL)US CMR
M58647 Plenum	4 PAIR 23 AWG UTP	FEP	White ThermoPlen®* .295	7.49	50	74	C(UL)US CMP

*Plenum rated Thermoplastic. For pair colors see chart A on page 64.

Jacket Colors for 4-Pair Non-Plenum

Jacket Color	Mohawk #
WHITE	M58651
BLUE	M58650
YELLOW	M58652
GRAY	M58653

Jacket Colors for 4-Pair Plenum

Jacket Color	Mohawk #
WHITE	M58647
BLUE	M58646
YELLOW	M58648
GRAY	M58649

Custom colors available; please consult the factory.

Packaging Options

Put-Up	Package	Number Per Pallet	Pallet Size
1000 Ft.	20" Reels	20	42" x 42"

RoHS

Category 6E UTP GigaLAN®

Tested to 750 MHz

GigaLAN is the one of the highest performance unshielded twisted pair (UTP) cables available today. The FlexWeb® construction isolates the pairs throughout the length of the cable, while providing an installer-friendly cable.

The unique GigaLAN FlexWeb® construction isolates the cable pairs and enhances the pair-to-pair balance for superior crosstalk, LCL and TCL performance. Compact cable design meets the diameter requirements specified in TIA/EIA-568-B, providing flexibility and ease of installation. Electrical performance is ETL verified to TIA/EIA-568-B.2-1 Category 6.

- **Tested to 750 MHz** – with verified stability.
- **25 Year Warranty***
- **34% increase in power due to lower insertion loss characteristics at 100 MHz and greater than 50% at 250 MHz than Category 6.**
- **7 dB Minimum** – Improvement in Near End Crosstalk vs. Category 6 NEXT.
- **33 dB Minimum ACR @ 100 MHz and positive ACR to 460 MHz.**
- **Application** – Proven support for Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, IEEE 802.3af Power Over Ethernet for VoIP, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps, 1.2, 2.4 and 4.8 Gbps.
- **Enhanced Performance Parameters** – All electrical characteristics proven to exceed TIA/EIA-568-B.2-1 and ISO/IEC 11801 Category 6 requirements: including NEXT and ELFEXT (Pair-to-Pair and Power Sum), Insertion Loss, Return Loss, and Delay Skew.
- 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 and System MATE® programs.

Electrical Characteristics

STANDARDS:
EXCEEDS TIA/EIA-568-B.2-1 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)

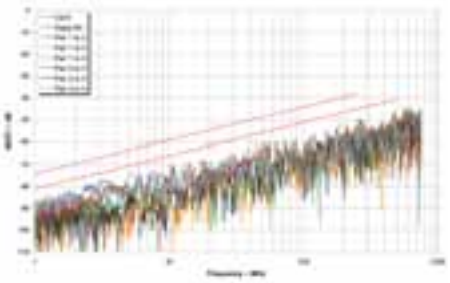
PROPAGATION DELAY:
506 + 36/√*f* ns/100m MAX

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

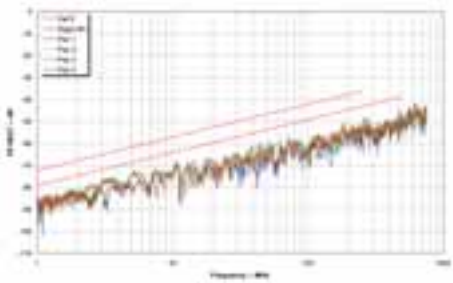
NOMINAL VELOCITY OF PROPAGATION (NVP):

PLENUM	72%
NON-PLENUM	68%

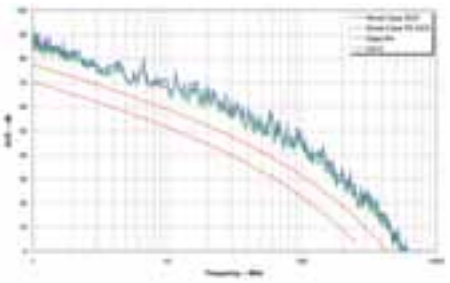
Near End Crosstalk (NEXT)



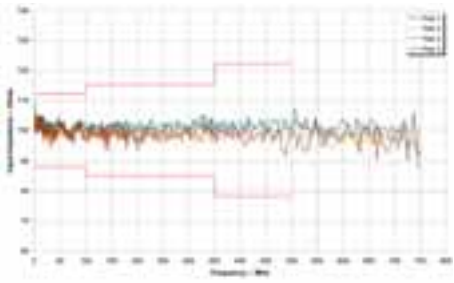
Power Sum NEXT (PS NEXT)



Worst Case ACR and Power Sum ACR

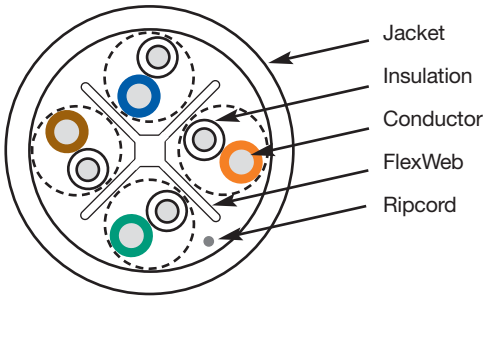


Input Impedance



Safety listed to NEC (NFPA 70)

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



Jacket Colors for 4-Pair Non-Plenum

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.

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
.772	1.6	1.7	93	83.0	81.3	86	81.0	79.3	-	-	-	-
1.0	1.8	1.9	91	81.3	79.4	84	79.3	77.4	74.8	72.8	20.0	542.0
4.0	3.3	3.5	82	72.3	68.8	75	70.3	66.8	62.8	60.8	24.2	524.0
8.0	4.7	4.9	78	67.8	62.9	71	65.8	60.9	56.7	54.7	26.3	518.7
10.0	5.2	5.5	76	66.3	60.8	69	64.3	58.8	54.8	52.8	27.0	517.4
16.0	6.7	7.0	73	63.2	56.2	66	61.2	54.2	50.7	48.7	27.0	515.0
20.0	7.4	7.8	72	61.8	54.0	65	59.8	52.0	48.8	46.8	27.0	514.0
25.0	8.3	8.7	70	60.3	51.6	63	58.3	49.6	46.8	44.8	26.5	513.2
31.25	9.3	9.8	69	58.9	49.1	62	56.9	47.1	44.9	42.9	25.9	512.4
62.5	13.4	14.1	64	54.4	40.3	57	52.4	38.3	38.9	36.9	24.2	510.6
100.0	17.1	18.0	61	51.3	33.3	54	49.3	31.3	34.8	32.8	23.1	509.6
155.0	21.7	22.8	58	48.4	25.6	51	46.4	23.6	31.0	29.0	22.0	508.9
200.0	24.9	26.2	57	46.8	20.6	50	44.8	18.6	28.8	26.8	21.4	508.5
250.0	28.1	29.6	55	45.3	15.7	48	43.3	13.7	26.8	24.8	20.9	508.3
300.0	31.1	32.7	54	44.1	11.4	47	42.1	9.4	25.3	23.3	20.4	508.1
350.0	33.8	35.6	53	43.1	7.5	46	41.1	5.5	23.9	21.9	20.1	507.9
400.0	36.5	38.4	52	42.3	3.9	45	40.3	1.9	22.8	20.8	19.7	507.8
500.0	41.4	43.6	51	40.8	-	44	38.8	-	20.8	18.8	19.2	507.6
550.0	43.7	46.0	50	40.2	-	43	38.2	-	-	-	19.0	-
600.0	46.0	48.4	50	39.6	-	43	37.6	-	-	-	18.8	-
650.0	48.1	50.6	49	39.1	-	42	37.1	-	-	-	18.6	-
750.0	52.3	55.0	48	38.2	-	41	36.2	-	-	-	18.2	-

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M57418 Non-Plenum	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
M58405 Plenum Plus®	4 Pair 23 AWG UTP	FEP	White Smokeguard®† FP Rated for 125° C .220 5.59	36 54	UL CMP Limited Combustible c(UL) CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. †Smokeguard is a registered trademark of AlphaGary. For pair colors see chart A on page 64.

Packaging Options

Put-Up	Package	Number Per Pallet	Pallet Size
1000 Ft.	14" Reels	36	42" x 42"
1000 Ft.	Reel in a Box (12¾"W x 12¾"D x 12⅞"H)	27	42" x 42"

Above part numbers are for reels only. Add "RB" for Reel-in-a-box packaging.

Bulk put-ups available upon request; please consult the factory.

RoHS

Category 6e UTP AdvanceNet®

Tested to 650 MHz

AdvanceNet is unshielded twisted pair cable tested to 650 MHz and ETL verified to TIA/EIA-568-B.2-1 Category 6.

With the mini FlexWeb® core separator, the AdvanceNet cable isolates the pairs throughout the length of the cable, while providing a smaller installer-friendly cable.

- **25 Year Warranty***
- **28 dB Minimum ACR @ 100 MHz** – Proven support for Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, IEEE 802.3af Power Over Ethernet for VoIP, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps, 1.2 and 2.4 Gbps.
- **13 dB Minimum** – Improvement in Near End Crosstalk vs. Category 5e NEXT.
- **.25 ns/meter Maximum Skew** – Tightly controlled propagation delay.
- **Enhanced Performance Parameters** – All electrical characteristics proven to exceed TIA/EIA-568-B.2-1 and ISO/IEC 11801 Category 6 requirements: NEXT and ELFEXT (Pair-to-Pair and Power Sum), Insertion Loss, Return Loss, and Delay Skew.
- 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 and System MATE® programs.

Electrical Characteristics

STANDARDS:
EXCEEDS TIA/EIA-568-B.2-1 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 (200 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)

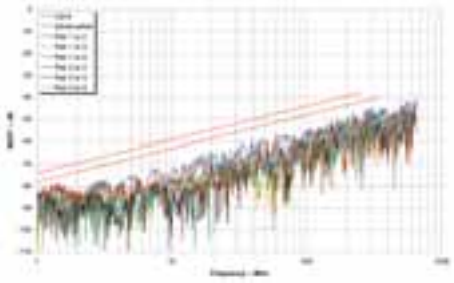
PROPAGATION DELAY:
534 + 36/√*f* ns/100m MAX

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

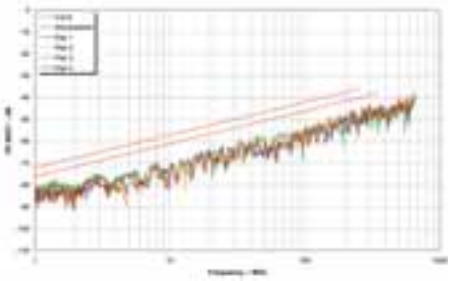
NOMINAL VELOCITY OF PROPAGATION (NVP):

PLENUM	72%
NON-PLENUM	68%

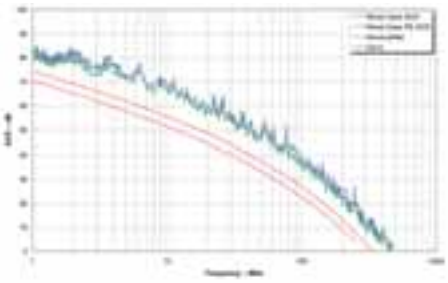
Near End Crosstalk (NEXT)



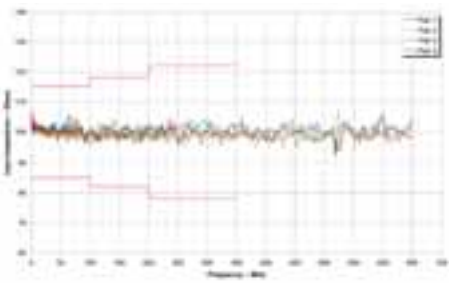
Power Sum NEXT (PS NEXT)



Worst Case ACR and Power Sum ACR

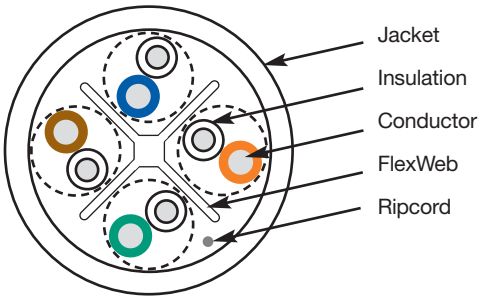


Input Impedance



Safety listed to NEC (NFPA 70)

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



Jacket Colors for 4-Pair Non-Plenum

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.

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
.772	1.6	1.8	90	80.0	78.2	83	78.0	76.2	-	-	-
1.0	1.8	2.0	88	78.3	76.3	81	76.3	74.3	70.0	68.0	20.0
4.0	3.5	3.8	79	69.3	65.5	72	67.3	63.5	58.0	56.0	24.2
8.0	4.9	5.3	75	64.8	59.5	68	62.8	57.5	51.9	49.9	26.3
10.0	5.6	5.9	73	63.3	57.4	66	61.3	55.4	50.0	48.0	27.0
16.0	7.1	7.5	70	60.2	52.7	63	58.2	50.7	45.9	43.9	27.0
20.0	7.9	8.4	69	58.8	50.4	62	56.8	48.4	44.0	42.0	27.0
25.0	8.8	9.4	67	57.3	47.9	60	55.3	45.9	42.0	40.0	26.5
31.25	10.0	10.6	66	55.9	45.3	59	53.9	43.3	40.1	38.1	25.9
62.5	14.3	15.3	61	51.4	36.1	54	49.4	34.1	34.1	32.1	24.2
100.0	18.4	19.7	58	48.3	28.6	51	46.3	26.6	30.0	28.0	23.1
155.0	23.4	25.0	55	45.4	20.4	48	43.4	18.4	26.2	24.2	22.0
200.0	27.0	28.8	54	43.8	15.0	47	41.8	13.0	24.0	22.0	21.4
250.0	30.5	32.6	52	42.3	9.7	45	40.3	7.7	22.0	20.0	20.9
300.0	33.9	36.2	51	41.1	4.9	44	39.1	2.9	20.5	18.5	20.4
350.0	37.0	39.5	50	40.1	0.6	43	38.1	-	19.1	17.1	20.1
400.0	40.0	42.7	49	39.3	-	42	37.3	-	18.0	16.0	19.7
500.0	45.5	48.6	48	37.8	-	41	35.8	-	16.0	14.0	19.2
550.0	48.2	51.5	47	37.2	-	40	35.2	-	-	-	19.0
600.0	50.7	54.2	47	36.6	-	40	34.6	-	-	-	18.8
650.0	53.2	56.8	46	36.1	-	39	34.1	-	-	-	18.6

Values above 350 MHz are for engineering information only.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M56889 Non-Plenum	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
M58414 Plenum Plus®	4 PAIR 23 AWG UTP	FEP	White Smokeguard®† FP Rated for 125° C .200 5.08	31 46	UL CMP Limited Combustible c(UL) CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. †Smokeguard is a registered trademark of AlphaGary. For pair colors see chart A on page 64.

Packaging Options

Put-Up	Package	Number Per Pallet	Pallet Size
1000 Ft.	12" Reels	48	42" x 42"
1000 Ft.	Boxes (15½"W x 11¼"D x 14¼"H)	33	45" x 48"
1000 Ft.	Reel in a Box (12¾"W x 12¾"D x 12⅞"H)	27	42" x 42"

Above part numbers are for reels only. Add "B" to end of Mohawk # for boxes, or "RB" for Reel-in-a-box packaging.

Bulk put-ups available upon request; please consult the factory.

RoHS

Category 6 UTP
6 LAN™

Tested to 550 MHz

ETL verified to TIA/EIA-568-B.2-1 Category 6.

- **25 Year Warranty***
- **24 dB Minimum ACR @ 100 MHz** – Proven support for Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, IEEE 802.3af Power Over Ethernet for VoIP, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps, 1.2 and 2.4 Gbps.
- **With flat tape core separator** throughout the length of the cable.
- **9 dB Minimum** – Improvement in Near End Crosstalk vs. Category 5e NEXT.
- **Enhanced Performance Parameters** – All electrical characteristics proven to meet TIA/EIA 568-B.2-1 and ISO/IEC 11801 Category 6 requirements: NEXT and ELFEXT (Pair-to-Pair and Power Sum), Insertion Loss, Return Loss, and Delay Skew
- This cable and/or its manufacture is covered by US Patent Nos. 6,998,537, 6,570,095 and 5,424,491.

* Warranty available with MAC and System MATE® programs.

Electrical Characteristics

STANDARDS:
MEETS TIA/EIA 1-1 568-B.2-1 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

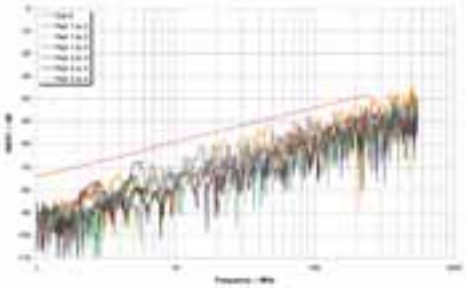
DELTA DELAY (SKEW):
45 ns/100m MAX

NOMINAL VELOCITY OF PROPAGATION (NVP):

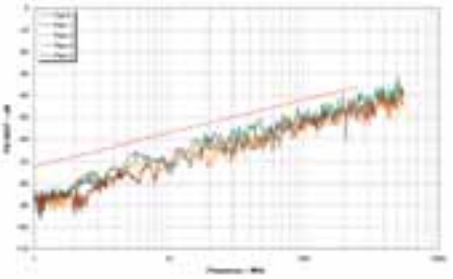
PLENUM	72%
NON-PLENUM	68%

WHERE f = FREQUENCY IN MHz from .772 to 250 MHz.

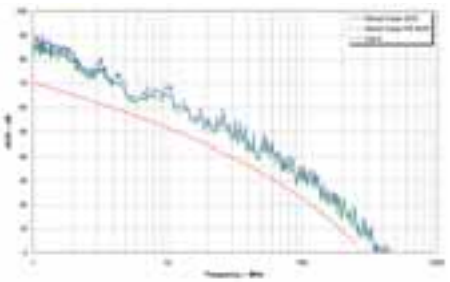
Near End Crosstalk (NEXT)



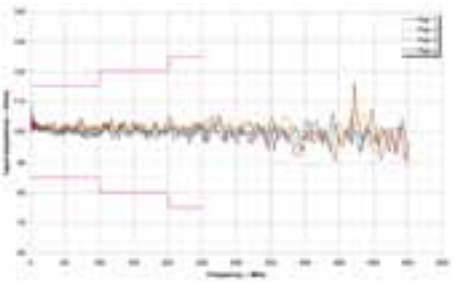
Power Sum NEXT (PS NEXT)



Worst Case ACR and Power Sum ACR

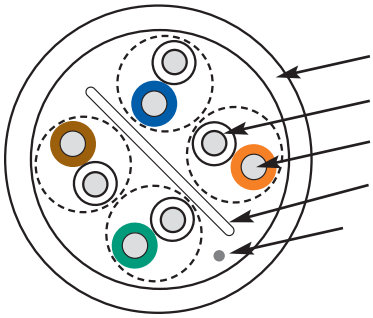


Input Impedance



Safety listed to NEC (NFPA 70)

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



Jacket Colors for 4-Pair Non-Plenum

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.

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
.772	1.7	1.8	82	76.0	74.2	77	74.0	72.2	-	-	-
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
8.0	5.1	5.3	67	60.8	55.5	62	58.8	53.5	49.7	46.7	24.5
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
25.0	9.1	9.5	59	53.3	43.8	54	51.3	41.8	39.8	36.8	24.3
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
155.0	24.2	25.2	47	41.4	16.2	42	39.4	14.2	24.0	21.0	18.8
200.0	27.8	29.0	46	39.8	10.8	41	37.8	8.8	21.8	18.8	18.0
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
350.0	38.2	39.8	42	36.1	-	37	34.1	-	16.9	13.9	16.3
400.0	41.3	43.0	41	35.3	-	36	33.3	-	15.8	12.8	15.9
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.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	mm	Weight lbs/M'	kg/km	Listings
M58291 Non-Plenum	4 PAIR 24 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	28	42	C(ETL)US CMP

*Plenum rated Thermoplastic. ** US Patent No. 5,563,377. For pair colors see chart A on page 64.

Packaging Options

Put-Up	Package	Number Per Pallet	Pallet Size
1000 Ft.	12" Reels	48	42" x 42"
1000 Ft.	Boxes (15½"W x 11¼"D x 14¼"H)	33	45" x 48"
1000 Ft.	Reel in a Box (12¾"W x 12¾"D x 12⅞"H)	27	42" x 42"

Above part numbers are for reels only. Add "B" to end of Mohawk # for boxes, or "RB" for Reel-in-a-box packaging.

Bulk put-ups available upon request; please consult the factory.

RoHS

Category 5E UTP MegaLAN®

Tested to 400 MHz

MegaLAN is ETL verified to Category 5e.

- **25 Year Warranty***
- **20 dB Minimum ACR @ 100 MHz** – Proven support for Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps and 1.2 Gbps.
- **5 dB Minimum** – Improvement in Near End Crosstalk vs. standard Category 5e NEXT.
- **Meets Return Loss** – Category 5e Standard.
- **.25 ns/meter Maximum Skew** – Tightly controlled propagation delay.
- **Enhanced Performance Parameters** – All electrical characteristics proven to exceed TIA/EIA 568-B Category 5e requirements: Near End Crosstalk, Characteristic Impedance, Insertion Loss, and Delay Skew. Also exceeds TIA/EIA-568-B.2 Category 5e requirements: Power Sum NEXT, and Far End Crosstalk – ELFEXT and PS-ELFEXT.
- **Engineered for Future Applications** – More than 10 years of service and still going strong, MegaLAN has a proven track record of successful installations.
- **User Friendly** – No special stripping tools. No waiting for deliveries. No compromises. Proven Performance all the way.
- This cable and/or its manufacture are covered by US Patent No. 5,424,491.

* Warranty available with MAC and System MATE® programs.

Electrical Characteristics

STANDARDS:
EXCEEDS TIA/EIA-568-B.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)

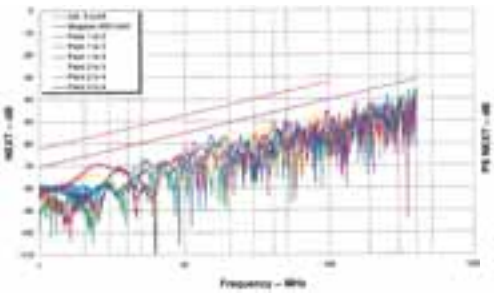
PROPAGATION DELAY:
506 + 36/√*f* ns/100m MAX

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

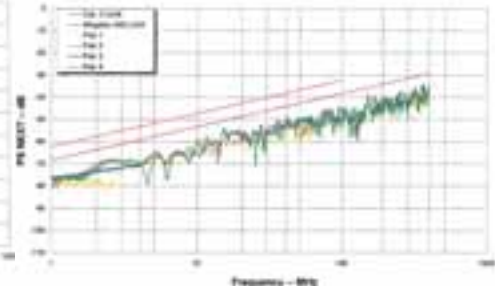
NOMINAL VELOCITY OF PROPAGATION (NVP):

PLENUM	72%
NON-PLENUM	68%

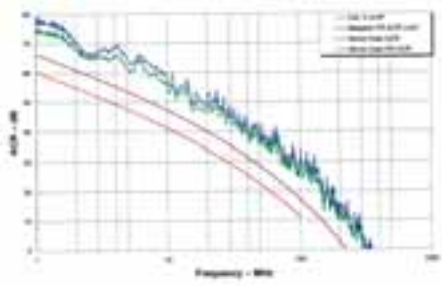
Near End Crosstalk (NEXT)



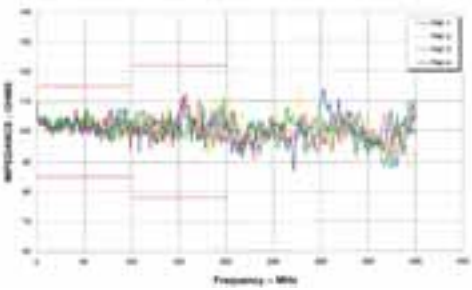
Power Sum NEXT (PS NEXT)



Worst Case ACR and Power Sum ACR

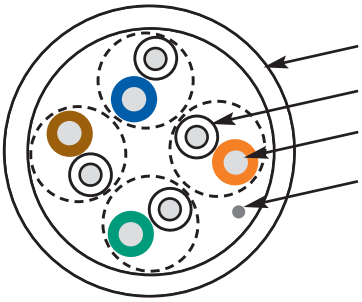


Input Impedance



Safety listed to NEC (NFPA 70)

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



Jacket Colors for 4-Pair Non-Plenum

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

Jacket Colors for 4-Pair Plenum

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

Custom colors available; please consult the factory.

FREQ (MHz)	INSERTION LOSS (dB/100m) avg	INSERTION LOSS (dB/100m) max	INSERTION LOSS (dB/mft) max	NEXT (dB/100m) avg	NEXT (dB/100m) min	ACR (dB/100m) min	PS-NEXT (dB/100m) avg	PS-NEXT (dB/100m) min	PS-ACR (dB/100m) min	ELFEXT (dB/100m) min	PS-ELFEXT (dB/100m) min	RL (dB) min
.772	1.6	1.8	5.5	82	72.0	72.2	75	70.0	68.2	-	-	-
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	4.0	12.2	70	61.3	59.3	63	59.3	55.3	55.8	52.8	23.0
8.0	5.2	5.7	17.4	66	56.8	53.1	59	54.8	49.1	49.7	46.7	24.5
10.0	5.8	6.4	19.4	64	55.3	50.9	58	53.3	46.9	47.8	44.8	25.0
16.0	7.3	8.1	24.7	62	52.2	46.1	56	50.2	42.1	43.7	40.7	25.0
20.0	8.3	9.1	27.7	60	50.8	43.7	54	48.8	39.7	41.8	38.8	25.0
25.0	9.3	10.2	31.0	59	49.3	41.1	52	47.3	37.1	39.8	36.8	24.3
31.25	10.4	11.4	34.8	58	47.9	38.5	51	45.9	34.5	37.9	34.9	23.6
62.5	15.1	16.4	50	54	43.4	29.0	47	41.4	25.0	31.9	28.9	21.5
100.0	19.6	21.0	64	50	40.3	21.3	43	38.3	17.3	27.8	24.8	20.1
155.0	25.0	26.6	81	48	37.4	12.9	41	35.4	8.9	24.0	21.0	18.8
200.0	28.8	30.5	93	46	35.8	7.3	40	33.8	3.3	21.8	18.8	18.0
250.0	32.8	34.4	105	45	34.3	1.9	38	32.3	-	19.8	16.8	17.3
300.0	36.5	38.0	116	44	33.1	-	37	31.1	-	18.3	15.3	16.8
350.0	40.0	41.4	126	43	32.1	-	36	30.1	-	16.9	13.9	16.3
400.0	43.2	44.6	136	42	31.3	-	35	29.3	-	-	-	15.9

Values above 250 MHz are for engineering information only.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M55989 Non-Plenum	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
M57113 Plenum Plus®	4 PAIR 24 AWG UTP	FEP	White Smokeguard®† FP Rated for 125° C .175 4.45	26 39	UL, CMP Limited Combustible c(UL) CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. †Smokeguard is a registered trademark of AlphaGary. For pair colors see chart A on page 64.

Packaging Options

Put-Up	Package	Number Per Pallet	Pallet Size
1000 Ft.	12" Reels	60	38" x 48"
1000 Ft.	Boxes (13⅞"W x 10¼"D x 12½"H)	36	44" x 44"
1000 Ft.	Reel in a Box (11⅞"W x 11⅜"D x 11⅞"H)	36	38" x 48"

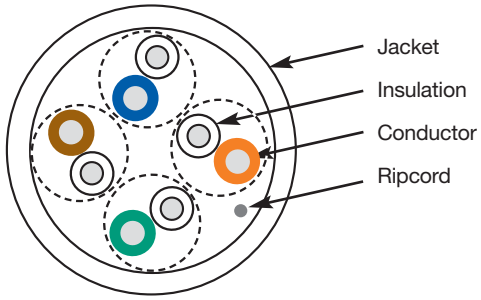
Above part numbers are for reels only. Add "B" to end of Mohawk # for boxes, or "RB" for Reel-in-a-box packaging.

Bulk put-ups available upon request; please consult the factory.

RoHS

Category 5e UTP
5e LAN®

Tested to 200 MHz



- **25 Year Warranty***
- **14 dB Minimum ACR @ 100 MHz** – Proven support for Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps.
- **4 dB Minimum** – Improvement in Near End Crosstalk vs. TIA/EIA-568-B Category 5.
- **ETL Verified to Category 5e.**
- **.45 ns/meter Maximum Skew** – Tightly controlled propagation delay.
- **Engineered for Future Applications** – Tested for all parameters specified...for 4 pair UTP in TIA/EIA-568-B.2, including PS-NEXT, Return Loss, ELFEXT and PS-ELFEXT.
- This cable and/or its manufacture are covered by US Patent No. 5,424,491.

* Warranty available with MAC and System MATE® programs.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch	Diameter mm	Weight lbs/M'	Weight kg/km	Listings
M57554 Non-Plenum	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®* .180	4.57	23	34	C(ETL)US CMP
M58104 Plenum Plus®	4 PAIR 24 AWG UTP	FEP	White Smokeguard®† FP Rated for 125° C .170	4.32	24	36	UL, CMP Limited Combustible c(UL) CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. †Smokeguard is a registered trademark of AlphaGary. For pair colors see chart A on page 64.

Jacket Colors for 4-Pair Non-Plenum

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

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

Custom colors available; please consult the factory.
Above part numbers are for reels only. Add "B" to end of Mohawk # for boxes, or "RB" for Reel-in-a-box packaging.

FREQ (MHz)	INSERTION LOSS (dB/100m) avg	(dB/100m) max	(dB/mft) max	NEXT (dB/100m) avg	(dB/100m) min	ACR (dB/100m) min	PS-NEXT (dB/100m) avg	(dB/100m) min	PS-ACR (dB/100m) min	ELFEXT (dB/100m) min	PS-ELFEXT (dB/100m) min	RL (dB) min
.772	1.6	1.8	5.5	79	68.0	66.2	70	64.0	62.2	-	-	-
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
8.0	5.4	5.8	18	64	52.8	47.0	54	48.8	43.0	45.7	42.7	24.5
10.0	6.0	6.5	20	62	51.3	44.8	52	47.3	40.8	43.8	40.8	25.0
16.0	7.6	8.2	25	60	48.2	40.0	50	44.2	36.0	39.7	36.7	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
25.0	9.7	10.4	32	57	45.3	34.9	47	41.3	30.9	35.8	32.8	24.3
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
155.0	26.2	28.1	86	45	33.4	5.3	35	29.4	1.3	20.0	17.0	18.8
200.0	30.2	32.4	99	43	31.8	-	33	27.8	-	17.8	14.8	18.0

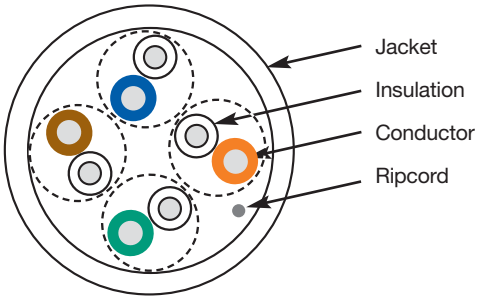
Values above 100 MHz are for engineering information only.

Safety listed to NEC (NFPA 70)

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

RoHS

UTP Category 5 & 3



Category 5 UTP

- **14 dB Minimum ACR @ 100 MHz** – Proven support for 155 Mbps ATM, 100 Mbps Fast Ethernet, 100 Mbps TP-PMD, 100VG-AnyLAN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps.
- **4 dB Minimum** – Improvement in Near End Crosstalk vs. TIA-EIA-568-B Category 5.
- **.25 ns/meter Maximum Skew** – Tightly controlled propagation delay.
- **Engineered for Future Applications** – Tested for parameters not specified for Category 5: 4 pair UTP in TIA/EIA-568-B.2, such as PS-NEXT, ACR, RL, and ELFEXT.

Mohawk Part No.	Cable Type	Dielectric Type	Shield Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
Category 5						
M54568 Non-Plenum	4 PAIR 24 AWG UTP	Thermoplastic	None	Gray PVC .190 4.83	20 30	C(ETL)US CMR
M54785 Non-Plenum	Dual 4 Pair UTP/UTP	Thermoplastic	None	Gray PVC .190x.395 4.83x10.03	43 64	C(ETL)US CMR
M54998 Plenum	4 PAIR 24 AWG UTP	Dual Insulation** FEP on all 4 pairs	None	Gray ThermoPlen®* .180 4.57	23 34	C(ETL)US CMP
M55477 Plenum	Dual 4 Pair UTP/UTP	Dual Insulation** FEP on all 4 pairs	None	Gray ThermoPlen®* .180x.375 4.57x9.53	45 67	C(ETL)US CMP
Category 3						
M52995 Non-Plenum	4 PAIR 24 AWG UTP	Thermoplastic	None	Gray PVC .161 4.09	21 31	C(ETL)US CMR
M55760 Plenum	4 PAIR 24 AWG UTP	ThermoPlen®*	None	Gray ThermoPlen®* .161 4.09	21 31	C(ETL)US CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. For pair colors see chart A on page 64.
Note: Also available in **LSZH** cable versions.

Jacket Colors for Category 5 4-Pair Non-Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M55995	RED	M56009
BLUE	M55436	ORANGE	M55721
PINK	M55959	BLACK	M56230
YELLOW	M55980	VIOLET	M56210
GRAY	M54568	GREEN	M55994

Jacket Colors for Category 5 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M55530	RED	M56256
BLUE	M55586	ORANGE	M55902
PINK	M55837	BLACK	M55901
YELLOW	M55915	VIOLET	M55900
GRAY	M54998	GREEN	M55916

Custom colors available; please consult the factory.
Above part numbers are for reels only. Add "B" to end of Mohawk # for boxes, or "RB" for Reel-in-a-box packaging.

Safety listed to NEC (NFPA 70)

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

RoHS

F/UTP Category 6

Tested to 550 MHz

F/UTP is a foil backed shield over the cable core with a drain wire under the foil shield. This cable is tested to 550 MHz and third party verified to category 6.

With Mohawk's FlexWeb® construction, the cable isolates the pairs throughout the length of the cable, while providing a round installer-friendly cable.

- **25 Year Warranty***
- **24 dB Minimum ACR @ 100 MHz** – Proven support for Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps, 1.2 and 2.4 Gbps.
- **9 dB Minimum** – Improvement in Near End Crosstalk vs. standard Category 5e NEXT.
- **.30 ns/meter Maximum Skew** – Tightly controlled propagation delay.
- 100% insulation (plenum)
- **Enhanced Performance Parameters** – All electrical characteristics proven to exceed TIA/EIA-568-B.2-1 and ISO/IEC 11801 Category 6 requirements: NEXT and ELFEXT (Pair-to-Pair and Power Sum), Insertion Loss, Return Loss, and Delay Skew.
- **Use All Shielded Components for a Shielded or Screened System** – Mohawk strongly recommends the use of shielded or screened connecting hardware, and all shielded or screened cords: patch, work area and equipment cords should be used throughout the structured cabling system.
- 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 and System MATE® programs.

Electrical Characteristics

STANDARDS:
EXCEEDS TIA/EIA-568-B.2-1 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)

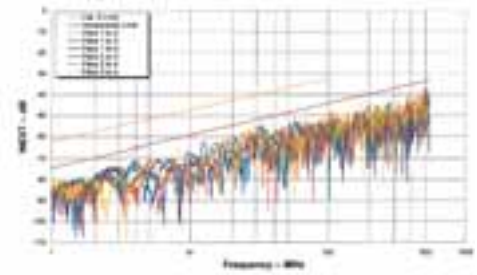
PROPAGATION DELAY:
534 + 36/√*f* ns/100m MAX

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

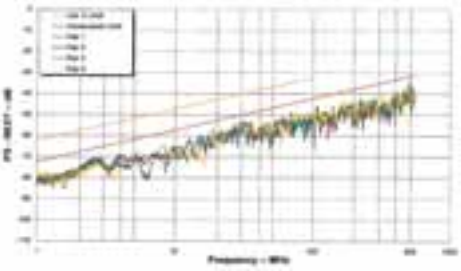
NOMINAL VELOCITY OF PROPAGATION (NVP):

PLENUM	72%
NON-PLENUM	68%

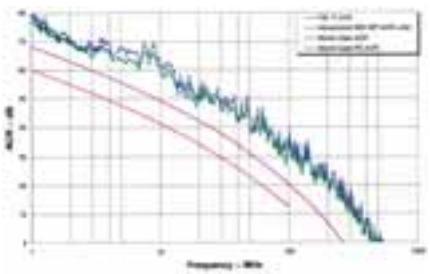
Near End Crosstalk (NEXT)



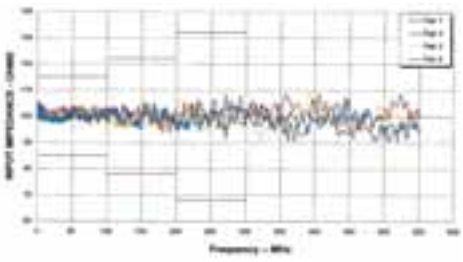
Power Sum NEXT (PS NEXT)



Worst Case ACR and Power Sum ACR

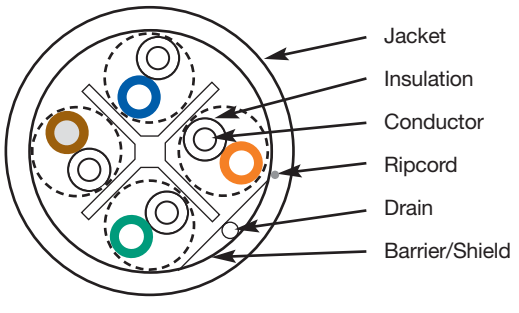


Input Impedance



Safety listed to NEC (NFPA 70)

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



Jacket Colors for 4-Pair Non-Plenum

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.

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
.772	1.7	1.8	86	76.0	74.2	80	74.0	72.2	–	–	–
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
8.0	5.0	5.3	69	60.8	55.5	61	58.8	53.5	51.9	49.9	24.5
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
25.0	8.9	9.5	63	53.3	43.8	54	51.3	41.8	42.0	40.0	24.3
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
155.0	23.6	25.2	52	41.4	16.2	43	39.4	14.2	26.2	24.2	18.8
200.0	27.1	29.0	50	39.8	10.8	42	37.8	8.8	24.0	22.0	18.0
250.0	30.7	32.8	49	38.3	5.5	40	36.3	3.5	22.0	20.0	17.3
300.0	34.0	36.4	48	37.1	0.7	39	35.1	–	20.5	18.5	16.8
350.0	37.2	39.8	47	36.1	–	38	34.1	–	19.1	17.1	16.3
400.0	40.2	43.0	46	35.3	–	37	33.3	–	18.0	16.0	15.9
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.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M58155 Non-Plenum	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 64.

RoHS

Category 5E F/UTP MegaLAN®

Tested to 400 MHz

F/UTP is a foil backed shield over the cable core with a drain wire under the foil shield. This cable is ETL verified to Category 5e.

- **25 Year Warranty***
- **20 dB Minimum ACR @ 100 MHz** – Proven support for Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps and 1.2 Gbps.
- **5 dB Minimum** – Improvement in Near End Crosstalk vs. standard Category 5e NEXT.
- **.30 ns/meter Maximum Skew** – Tightly controlled propagation delay.
- 100% insulation (plenum)
- **Enhanced Performance Parameters** – All electrical characteristics proven to exceed TIA/EIA 568-B Category 5e requirements: Near End Crosstalk, Characteristic Impedance, Insertion Loss and Delay Skew. Also exceeds TIA/EIA-568-B.2 Category 5e requirements: Power Sum NEXT, Return Loss, and Far End Crosstalk – ELFEXT and PS-ELFEXT.
- **Engineered for Future Applications** – Where cabling is to be installed in a high external noise location. This could be in the path of radar or next to a telecom or a broadcast transmission point. Or is security an issue? When quality cable is properly installed, grounded, and tested, shielded cable provides measurably lower RF emissions.
- **Use All Shielded Components for a Shielded or Screened System** – Mohawk strongly recommends the use of shielded or screened connecting hardware, and all shielded or screened cords: patch, work area and equipment cords should be used throughout the structured cabling system.
- This cable and/or its manufacture are covered by US Patent No. 5,424,491.

* Warranty available with MAC and System MATE® programs.

Electrical Characteristics

STANDARDS:
EXCEEDS TIA/EIA-568-B.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)

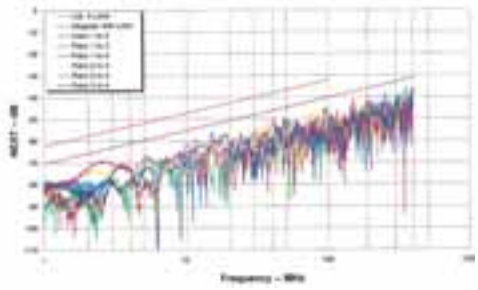
PROPAGATION DELAY:
506 + 36/√ƒ ns/100m MAX

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

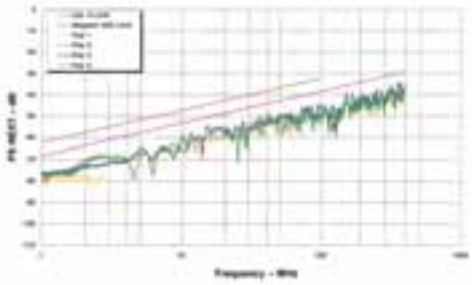
NOMINAL VELOCITY OF PROPAGATION (NVP):

PLENUM	72%
NON-PLENUM	68%

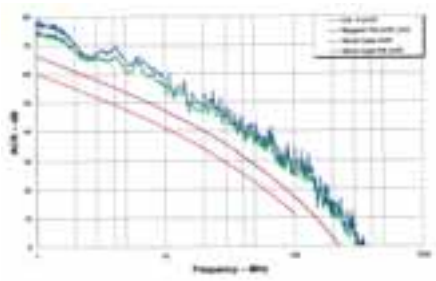
Near End Crosstalk (NEXT)



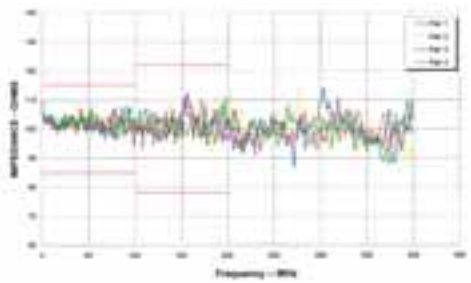
Power Sum NEXT (PS NEXT)



Worst Case ACR and Power Sum ACR

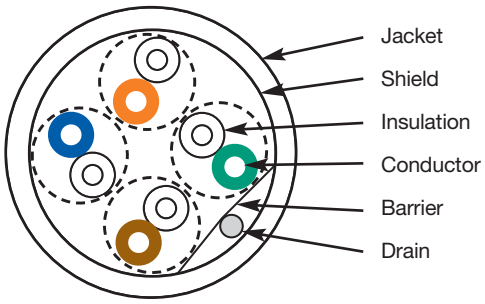


Input Impedance



Safety listed to NEC (NFPA 70)

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



Jacket Colors for 4-Pair Non-Plenum

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.

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
.772	1.6	1.8	82	72.0	72.2	75	70.0	68.2	—	—	—
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
8.0	5.2	5.7	66	56.8	53.1	59	54.8	49.1	49.7	46.7	24.5
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
25.0	9.3	10.2	59	49.3	41.1	52	47.3	37.1	39.8	36.8	24.3
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
155.0	25.0	26.6	48	37.4	12.9	41	35.4	8.9	24.0	21.0	18.8
200.0	28.8	30.5	46	35.8	7.3	40	33.8	3.3	21.8	18.8	18.0
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.

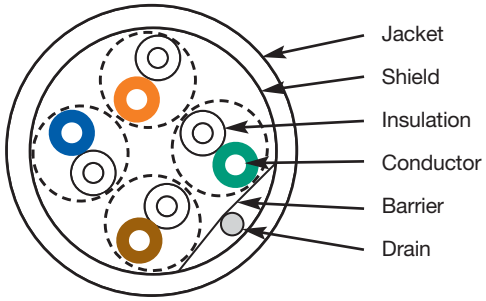
Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M55987 Non-Plenum	4 PAIR 24 AWG F/UTP	Thermoplastic	White PVC .245 6.22	32 48	C(UL)US CMR
M55986 Plenum	4 PAIR 24 AWG F/UTP	FEP	White ThermoPlen®* .224 5.69	32 48	C(UL)US CMP

*Plenum rated Thermoplastic. For pair colors see chart A on page 64.

RoHS

Category 5e F/UTP
5e LAN®

Tested to 200 MHz



F/UTP is a foil backed shield over the cable core with a drain wire under the foil shield. This cable is ETL verified to Category 5e.

- **15 Year Warranty***
- **14 dB Minimum ACR @ 100 MHz** – Proven support for Gigabit Ethernet / 1000BASE-T / IEEE 802.3ab, ATM up to 155 Mbps, 100 Mbps Fast Ethernet / 100BASE-T / IEEE 802.3, ANSI.X3.263 FDDI TP-PMD, Ethernet / 10BASE-T / IEEE 802.3, 4 & 16 Mbps Token Ring / IEEE 802.5, T1/E1, xDSL, ISDN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps.
- **4 dB Minimum** – Improvement in Near End Crosstalk vs. TIA/EIA-568-B Category 5.
- **ETL verified to Category 5e**
- **.30 ns/meter Maximum Skew** – Tightly controlled propagation delay.
- 100% insulation (plenum)
- **Engineered for Future Applications** – Tested for all parameters specified...for 4 pair ScTP in TIA/EIA-568-B.2, including PS-NEXT, Return Loss, ELFEXT and PS-ELFEXT.

* Warranty available with MAC and System MATE® programs.

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M58145 Non-Plenum	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 64.

Jacket Colors for 4-Pair Non-Plenum

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

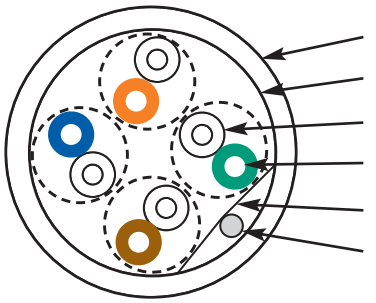
Jacket Color	Mohawk #	Jacket Color	Mohawk #
WHITE	M58185	GREEN	M58189
BLUE	M58186	RED	M58190
PINK	M58187	ORANGE	M58191
YELLOW	M58188	BLACK	M58192
GRAY	M58144	VIOLET	M58193

Safety listed to NEC (NFPA 70)

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

RoHS

F/UTP Category 5 & 3



Category 5 F/UTP

- **Category 5 cable** in a foil twisted pair design, or overall shielded
- **10 dB Minimum ACR @ 100 MHz** – Proven support for 155 Mbps ATM, 100 Mbps Fast Ethernet, 100 Mbps TP-PMD, 100VG-AnyLAN, 550 MHz Broadband Video and standards under development such as ATM at 622 Mbps
- **.30 ns/meter Maximum Skew** – Tightly controlled propagation delay

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
Category 5					
M54783 Non-Plenum	4 PAIR 24 AWG F/UTP	Thermoplastic	Gray PVC .240 6.1	32 48	C(UL)US) CMR
M55082 Plenum	4 PAIR 24 AWG F/UTP	FEP	Gray ThermoPlen®* .230 5.84	34 51	C(UL)US CMP
Category 3					
M53639 Non-Plenum	4 PAIR 24 AWG F/UTP	Thermoplastic	Gray PVC .210 5.33	29 43	C(UL)US CMR
M54708 Plenum	4 PAIR 24 AWG F/UTP	ThermoPlen®**	Gray ThermoPlen®* .189 4.80	29 43	C(UL)US CMP

*Plenum rated Thermoplastic. For pair colors see chart A on page 64.

Jacket Colors for Category 5 4-Pair Non-Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
GRAY	M54783	BLACK	M57277
BLUE	M56912	ORANGE	M57564
GREEN	M57116	WHITE	M57662
RED	M56669	VIOLET	M57850

Jacket Colors for Category 5 4-Pair Plenum

Jacket Color	Mohawk #	Jacket Color	Mohawk #
GRAY	M55082	BLACK	M57269
BLUE	M57009	WHITE	M56760
GREEN	M56823	PINK	M58143
RED	M56809		

Custom colors available; please consult the factory.

Safety listed to NEC (NFPA 70) **Verified by ETL to TIA/EIA-568-B.2** RoHS

High Pair Count

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).

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.

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 Non-Plenum						
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
Category 5 Non-Plenum						
M56753†	25 PAIR 24 AWG UTP	None	Gray PVC .470 11.94	119 177	4.7 119	C(UL)US CMR
M57040†	50 PAIR 24 AWG UTP	None	Gray PVC .750 19.05	252 375	7.5 191	C(UL)US CMR
M56832†	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 5 Plenum						
M56773†	25 PAIR 24 AWG UTP	None	Gray FEP .430 10.92	137 204	4.3 109	C(UL)US CMP
M56700	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

*Plenum rated Thermoplastic. †Verified by Independent Test Laboratories. For pair and binder colors see chart B on page 64.

Category 5/5e 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 Non-Plenum									
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
M57996	400 PAIR 24 AWG UTP	None	Gray PVC 1.590	40.38	1750	2604	16.0	406	C(UL)US CMR
M55704	25 PAIR 24 AWG F/UTP	O/A ALUM/PLY W/DW	Gray PVC .394	10.01	111	165	4.0	102	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®* .786	19.96	467	695	7.9	201	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
M58349	400 PAIR 24 AWG UTP	None	Gray ThermoPlen®* 1.527	38.79	1760	2619	15.3	389	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 60.

Category 3 High Pair Count Packaging Options

Pair Count	Reel/Put-up	Gross Weight (lbs.)
25	20" Reel 1000 Ft.	123
25	24" Reel 2000 Ft.	246
25	36" Reel 5000 Ft.	620
25	36" Reel 6500 Ft.	805
50	22" Reel 1000 Ft.	224
50	30" Reel 2000 Ft.	455
50	48" Reel 5000 Ft.	1160

Pair Count	Reel/Put-up	Gross Weight (lbs.)
100	30" Reel 1000 Ft.	467
100	36" Reel 2000 Ft.	950
100	42" Reel 2500 Ft.	1167
100	48" Reel 4000 Ft.	1910
100	54" Reel 5000 Ft.	2400
200	42" Reel 1000 Ft.	814
200	54" Reel 2000 Ft.	1680

Pair Count	Reel/Put-up	Gross Weight (lbs.)
200	72" Reel 5000 Ft.	4300
300	48" Reel 1000 Ft.	1897
300	54" Reel 2000 Ft.	2800
300	60" Reel 3000 Ft.	4200
300	72" Reel 4000 Ft.	5600
400	54" Reel 1000 Ft.	1900
400	72" Reel 2000 Ft.	3900

RoHS

UTP & F/UTP
Patch Cables

Advance Link® Category 6e UTP Patch Cable — Tested to 650 MHz

Mohawk Part No.	Cable Type	Dielectric Type	Shield Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M57507	4 PAIR 24 AWG (7/32) TC UTP	Thermoplastic	None	White PVC .216 5.49	25 37	C(UL)US CMG

For pair colors see chart A on page 64.

Jacket Colors/Mohawk#	BLUE -- M57508	RED -- M57519	GREEN -- M57512	YELLOW -- M57511

Additional colors & custom colors available - please consult the factory.

MegaLink™ Category 5E UTP & F/UTP Patch Cable

Mohawk Part No.	Cable Type	Dielectric Type	Shield Type	Jacket Type Diameter inch mm	Weight lbs/M' kg/km	Listings
M56726	4 PAIR 24 AWG (7/32) TC UTP	Thermoplastic	None	White PVC .200 5.10	25 37	C(UL)US CMG
M57542	4 PAIR 26 AWG (7/34) TC F/UTP	Thermoplastic	O/A ALUM/PLY W/DW	White PVC .203 5.16	23 34	C(UL)US CMG

For pair colors see chart A on page 64.

Jacket Colors/Mohawk# for 4-Pair UTP	BLUE -- M57076	RED -- M57073	GREEN -- M57075	YELLOW -- M56985
Jacket Colors/Mohawk# for 4-Pair F/UTP	BLUE -- M57544	RED -- M57770	GREEN -- M58219	YELLOW -- M58218

RoHS

Additional colors & custom colors available - please consult the factory.

DSL-Link™

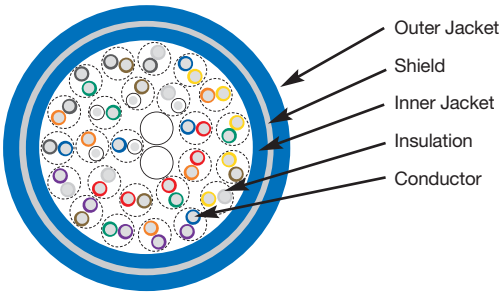
New Product

MOHAWK COPPER PRODUCTS

25 Pair 5e F/UTP Tinned CMR

DSL-Link was created in response to DSL providers and installers for trouble-free installation in central offices. As the future of central offices migrates toward higher end bandwidth intensive multi-media applications such as voice, video and data, DSL-Link meets that need

This cable provides Gigabit Ethernet capabilities to meet evolving technologies. DSL-Link's 25 pairs under one jacket offers easy installation opposed to multiple 4 pair bundles. The shield offers superior reduction against RFI (radio frequency interference) which is beneficial against noisy installation environments. Mohawk is first to market a 25 pair 5e F/UTP cable with tinned conductors



Mohawk Part No.	Cable Type	Shield Type	Jacket Diameter inch mm	Weight lbs/M' kg/km	Min Bend Radius inch mm	Listings
Category 5e						
M58751	25 PAIR 24 AWG F/UTP	O/A ALUM/PLY W/DW	PVC .522 13.26	149 222	5.25 133	C(UL)US CMR

RoHS

Special Applications

LAN-Trak OSP

Outside Plant Cable

LAN-Trak OSP delivers TIA/EIA-568-B 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 shielded (F/uTP) 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-B for Category 5, 5e, or 6 operation.

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	.271	6.88	36	54	2.75	70
M57623***	4 PAIR 24 AWG Suitable for Burial (Shielded)	.460	11.68	102	152	6.90	175
LAN-Trak OSP Category 5E							
M57561*	4 PAIR 24 AWG Duct/Aerial Lashed	.251	6.38	31	46	2.50	61
M57562*	4 PAIR 24 AWG Suitable for Burial (Shielded)	.380	9.65	88	131	5.70	145
LAN-Trak OSP Category 5e							
M58790	4 PAIR 24 AWG Duct/Aerial Lashed	.246	6.25	30	45	2.50	61
M58527**	25 PAIR 24 AWG Suitable for Burial (Shielded)	.730	18.54	300	446	11.00	280
LAN-Trak OSP Category 5							
M56871*	4 PAIR 24 AWG Outdoor Duct	.196	4.98	22	33	2.00	51
M57041*	4 PAIR 24 AWG Duct/Aerial Lashed	.246	6.25	30	45	2.50	61
M57042*	4 PAIR 24 AWG Suitable for Burial (Shielded)	.380	9.65	87	129	5.70	145
M57656**	25 PAIR 24 AWG Suitable for Burial (Shielded)	.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 64.

RoHS

Special Applications

VersaLAN™ CM

New Product

Indoor/Outdoor Category 5e & 6 Cable

VersaLAN 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.

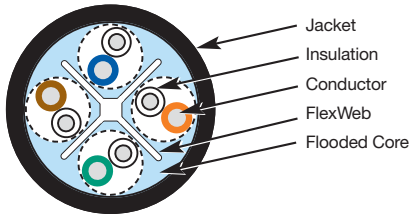
VersaLAN delivers 1 GbE to bandwidth requirements for evolving applications, such as enterprise data centers. Mohawk's technology enables the cable to be run indoors with a CM UL listing and outdoors between buildings. The unique construction extends Ethernet networks into previously restricted ground. This product delivers in wet indoor locations where standard plenum or non-plenum will fail. Plenum or riser cables that become wet fail; VersaLAN continues to perform.

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 waterblocked 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.

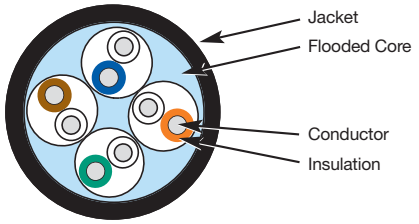
The cable is rated for general purpose communications use in accordance with Article 800 of the National Electrical Code (NEC). The cable is UL (USA) & c(UL) (CANADA) listed for this application by passing UL 1581 vertical tray flame test.

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

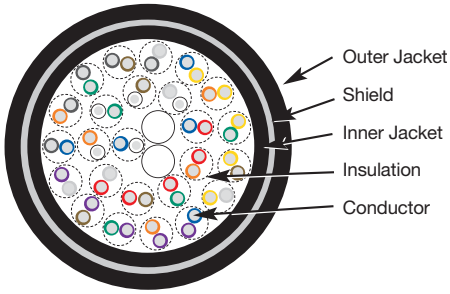
Category 6



Category 5e



Category 5e 25 Pair



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	38	57	2.50	61	C(UL)US CM-LS
M58762	**Cat 5e** 4 PAIR 24 AWG UTP	.251	6.38	43	64	2.75	70	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

RoHS

Special Applications

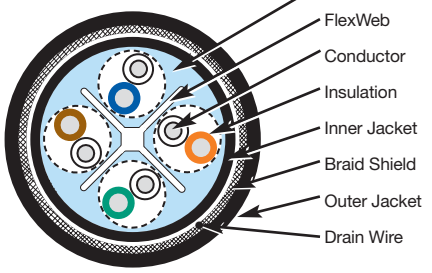
Cellular Tower Cables

Mohawk's Cellular Tower Cable is an overall foil/braid shielded twisted pair cable intended for outdoor use. The compact rugged design is more flexible versus 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.

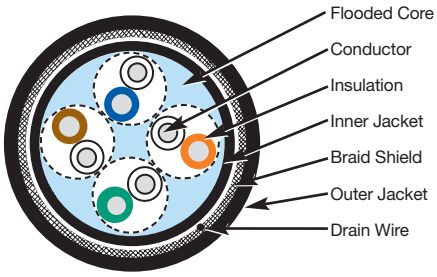
These cables can be used not only to connect cellular phone sites, but other services including pagers, mobile radio, wireless data, personal communications service (PCS), and even newer services such as high speed broadband wireless internet access and weather collection equipment.

- **EMI & RFI Protection** – 60% Coverage Braid and 100% Coverage Metallic Foil Tape offer excellent EMI and RFI immunity in a tower environment, where there may be interference from other services located on the same tower now or in the future.
- **Easy Termination** – Grounding is made simple because the braid can be crimped to a ground wire or clamped to the enclosure.
- **Gel filled and fully water-blocked** – Prevents migration of water through the cable into sensitive electronics enclosures. Gel filling prevents corrosion of the conductors in the presence of water.
- **UV stabilized polyethylene outer jacket**
- **Meets applicable TIA/EIA Category grades**

Category 6



Category 5E/5



- Category 5, 5E, and 6 conductors should be terminated with 110 style Category rated jacks, and the link completed with a short Category rated patch cable
- Standard RJ-45 plugs may not fit the Category 5E & 6 insulated conductors. Please consult the factory for the proper plug to fit these cables.

RoHS

Category 6

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
M58577	4 PAIR 24 AWG	.305	7.75	55	82	3.0	76

Category 5E

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
M58463	4 PAIR 24 AWG	.276	7.01	45	67	2.8	71

Category 5

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
M58116	4 PAIR 24 AWG	.250	6.35	38	57	2.5	64

Special Applications

Omni GUARD®

Industrial Grade Cables

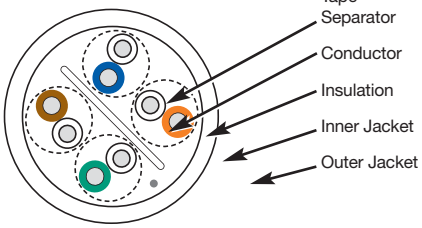
Rugged Cable Solutions for Extreme Environments.

Today's high-performance networking applications are moving from clean office environments out to greasy factory floors. Mohawk has responded with a line of Industrial Ethernet cable solutions.

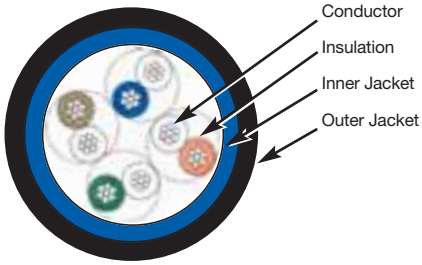
Mohawk's Omni Guard® Industrial Grade LAN copper cable families include unshielded twisted pair constructions with Category 5, Category 5e or Category 6. These cables are designed to meet or exceed the performance standards of TIA/EIA-568-B and ISO/IEC11801 requirements, while providing added jacket compounds for durability .

- **Riser** – For use as vertical runs in a shaft and for general-purpose communications.
- **Oil and UV-resistant** – Black TPE jacket for excellent abrasion/ cut-through resistance.
- **-20°C to +60°C operating temperature**

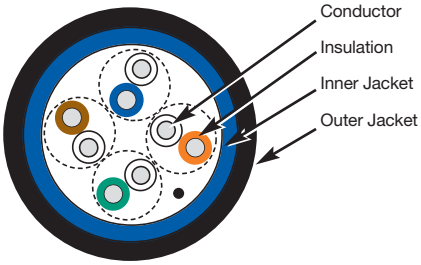
Category 6



Category 5e Stranded



Category 5E/5e/5



Category 6 UTP

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km
M58622	4 PAIR 23 AWG UTP	Polyolefin	.266	6.76	39	58

Category 5E UTP

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km
M58629	4 PAIR 24 AWG UTP	Polyolefin	.230	5.84	30	45

Category 5e UTP

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km
M58620	4 PAIR 24 AWG UTP	Polyolefin	.230	5.84	30	45

Category 5e Stranded UTP

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km
M58509	4 PAIR 24 AWG UTP STRANDED	Polyolefin	.260	6.60	37	55

Category 5 UTP

Mohawk Part No.	Cable Type	Dielectric Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km
M58630	4 PAIR 24 AWG UTP	Polyolefin	.230	5.84	30	45

Special Applications

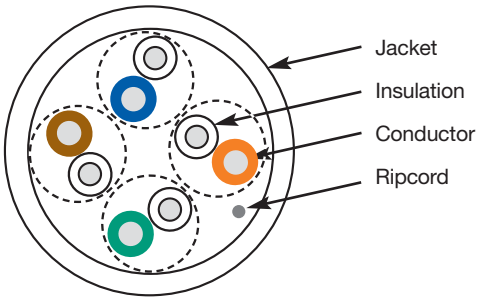
Spectrum™

New Product

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 **2,000 ft.**



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 24 AWG UTP	Thermoplastic	Maroon PVC .190 4.8	20 30	C(ETL)US CMR
M58814 Plenum	4 PAIR 24 AWG UTP	Dual Insulation** FEP on all 4 pairs	Maroon ThermoPlen®* .185 4.7	23 34	C(ETL)US CMP

*Plenum rated Thermoplastic. **US Patent No. 5,563,377. For pair colors see chart A on page 64.
Custom colors available; please consult the factory.

RoHS

Special Applications
MarineGUARD™

New Product

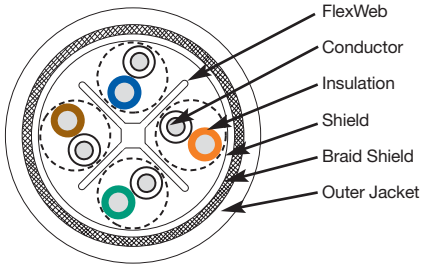
Category 5e,5E&6 LSZH Cables
ABS approved for marine installations

Mohawk's MarineGUARD cables deliver network signals to a range of vessels including cruise lines, oil carriers, bulk carriers, private yachts, container and cargo carriers. The cables are constructed with solid bare copper insulated conductors and assembled into four twisted pairs with an overall foil and braid shield (SFTP) under an overall gray low smoke zero halogen jacket. The Category 6 cable has a FlexWeb® core separator to isolate the pairs throughout the length of the cable.

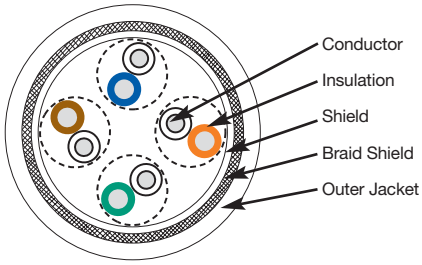
MarineGUARD allows quality voice and data functions for private and commercial vessels, including structures such as drilling and research platforms. The communication applications include computer networks, audio/video applications, PoE (Power over Ethernet) and VoIP (Voice over Internet Protocol).

For information on Mohawk's line of fiber optic MarineGUARD cables please contact Mohawk at 1-800-422-9961.

Category 6



Category 5E/5



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.

RoHS

Category 6

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
M58775	4 PAIR 23 AWG	.290	7.37	50	74	2.3	58

Category 5E

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
M58784	4 PAIR 24 AWG	.270	6.86	43	64	2.2	56

Category 5e

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
M58776	4 PAIR 24 AWG	.260	6.60	41	61	2.0	51

Special Applications
RG-6 Coax

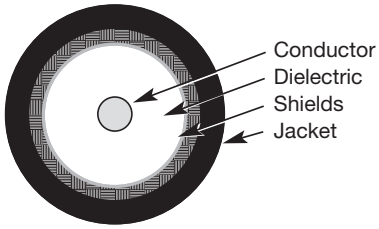
Coaxial Cables

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 braid and RG-6 quad shield consists of a foil/braid/foil/braid design. These cables include copper covered steel conductors.

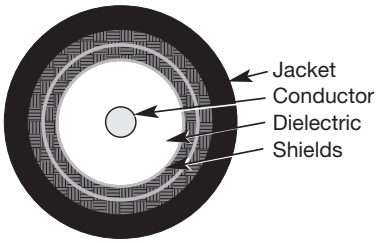
Applications

- 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)

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
M71002	DUAL	.235	5.97	26	38	2.5	63
M71003	QUAD	.268	6.8	32	47	2.75	69

Non-Plenum (Black Jacket)

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
M71005	DUAL	.269	6.83	30	44	2.7	68
M71006	QUAD	.307	7.8	33	48	3.0	76

RoHS

Special Applications
RG-11 Coax

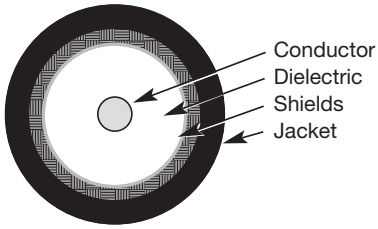
New Product

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 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 copper covered steel conductors.

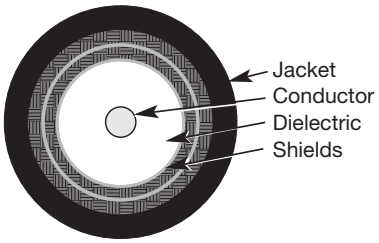
Applications

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

RG-11 Dual



RG-11 Quad



Plenum (White Jacket)

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
M71001	DUAL	.346	8.79	54	80	3.5	89
M71004	QUAD	.372	9.4	60	89	3.75	95

Non-Plenum (Black Jacket)

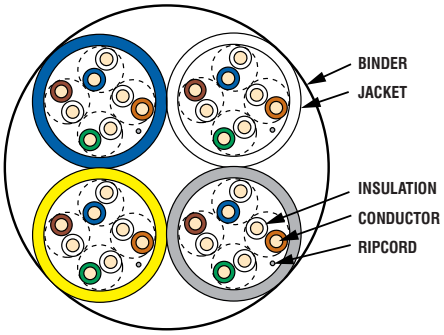
Mohawk Part No.	Shield Type	Jacket Diameter inch	Jacket Diameter mm	Weight lbs/M'	Weight kg/km	Min. Bend Radius inch	Min. Bend Radius mm
M71007	DUAL	.405	10.28	58	86	4.0	101
M71008	QUAD	.424	10.76	63	94	4.25	108

RoHS

Special Applications

Media Pull

Bundled Copper Cables



Tired of setting up multiple cable reels for a common cable pull?

Mohawk has the answer: Media Pull Bundled Cables or Media Pull parallel spooled cables.

Ultimate Versatility

Media Pull Cables are multiples of individually jacketed components, such as 4 pair copper cable elements. 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. This allows for ease of installation from set up to clean up as all the required cables are on one reel. This is available in up to 6 components and can include fiber and coax as well.

UL Approved

Mohawk's line of Media Pull cables are fully approved to UL safety requirements for CMR (Riser) or CMP (Plenum) copper applications and for OFNR (Riser) or OFNP (Plenum) fiber optic applications.

Guaranteed Performance

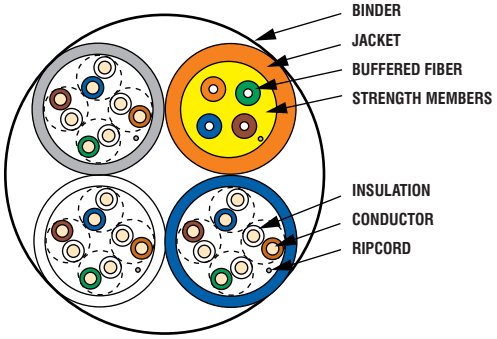
Individual cable elements are tested prior to cabling and tested again once the cabling operation is complete. This additional testing ensures that Media Pull constructions deliver the performance you've come to expect from an industry leader like Mohawk.

Plenum and Non-Plenum Category 6 Copper Components (3-6 components)

Plenum and Non-Plenum Category 5e Copper Components (3-6 components)

For any other constructions, please consult the factory.

Both Fiber Optic and Copper Cables in One Media Pull Package



Media Pull Bundled Cables are also available with Enhanced Copper Cables, AdvanceLite® Fiber Cables and Coaxial Cables.

Category Copper & AdvanceLite® Fiber Optic Components (3-6 components)

RoHS

Plug & Play

New Product

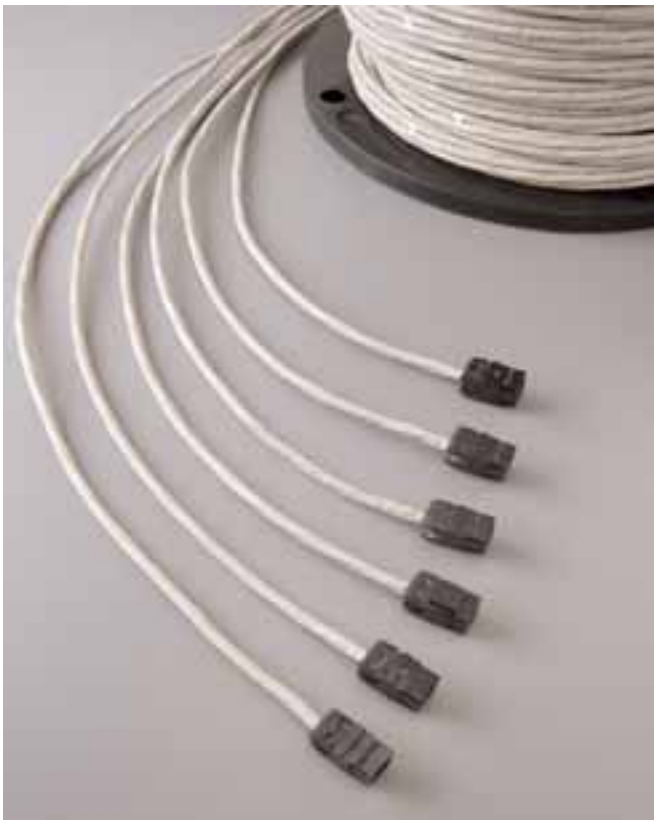
Pre-Terminated Cables for Media Pull Installations

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.

Product Features

- 6-leg, double ended construction
  - Presents a smaller profile when pulling
- Versatile trident cut
  - Allows left, right or center exit
- Terminated with Media Pull outlets
- Unique closed mesh sheath
  - Ensures snag-free handling
  - Material properties match the cable jacket
- Robust breakout kit
  - Maintains cable orientation and prevents crossing
- Pre-attached pulling eye to aid installation
- Proper Orientation
  - Each leg is cut and labeled for proper module orientation
- Utilizes high-quality Mohawk UTP cable
- Factory Terminated and Tested
  - Utilizes flat UTP modules, factory terminated and tested for high performance
- Identification
  - Each cable assembly is coded with a unique identification number for administrative purposes
- Breakout Kit
  - Unique breakout kit creates optimal cable orientation and limits cable crossing

For Fiber Optic Plug & Play Assemblies see page 59



Applications

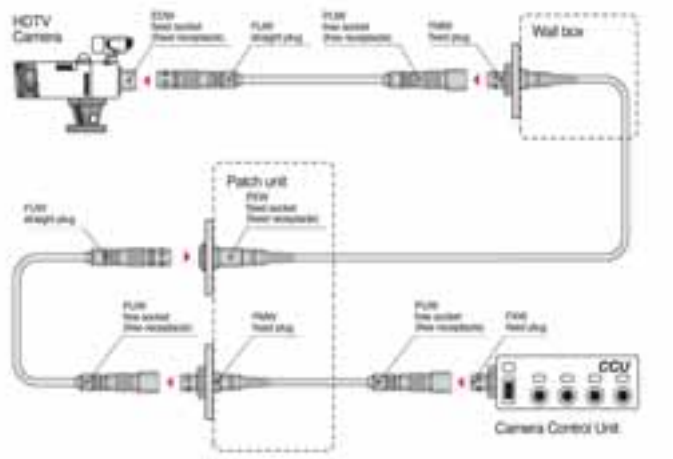
Ideal for Data Center installations where raised floor and ladder rack environments accomodate easy installations.

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 thanks 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 preterminated 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 gets 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	84	125	2.5	6.0	160	710	0.80 Max	Thermo-Plastic Elastomer
Harsh Environment Outdoor Cable 	M96818	.362	9.2	82	122	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	
12 mm 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.
For tactical cable chart see page 57

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
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 Ferrule 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
Hitachi	CR	41 pin
JVC	VCP	26 pin
Panasonic	WVCA26U	26 pin
Panasonic	32A	32 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.

AdvanceLite® 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.

AdvanceLite 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.

Multimode Fiber Grade Selector

Short Wavelength or Long Wavelength, 50/125 micron or 62.5/125 micron, we have a solution for you. Mohawk has designed our Fiber Grade Selector to help you determine which multimode fiber type best suits your application. Legacy installations to emerging networking protocols are identified and the guaranteed performance of each fiber is given along with the appropriate optical specifications.

Fiber Optic Inventory

When you need fiber optic cabling fast, Mohawk is ready and waiting for you. We stock over 100 of our most popular fiber optic cables, which can be shipped from our warehouse with no minimum order quantity necessary.

Multimode —

Grade 6 is a 50/125 fiber that exceeds TIA/EIA-568-B.3-1 (ISO 11801 OM3) for 550-meter lengths at 10 Gigabit data rates.

Grade 5 is a 50/125 fiber that complies with TIA/EIA-568-B.3-1 (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/EIA-568-B.3 (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/EIA-568-B.3 (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/EIA-568-B.3 (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. This is a low water peak fiber with advantages for CWDM applications.

RoHS

Jacket Colors

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

For tight buffered cables, excluding simplex and duplex, the following is the standard jacket color code:

Grades 2, 3, 4 — Orange

Grades 5, 6 — Aqua

Grade SM — Yellow

Non-standard jacket colors are available.

Optical Characteristics

Meets or exceeds ISO/IEC 11801	OM1	OM1	OM2	OM3	OM3	
Grade	**2**	**3**	**4**	**5**	**6**	**SM**
Glass Type	62.5/125 MM AdvanceLite	62.5/125 MM AdvanceLite	50/125 MM AdvanceLite	50/125 MM AdvanceLite	50/125 MM AdvanceLite	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	82/300	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)

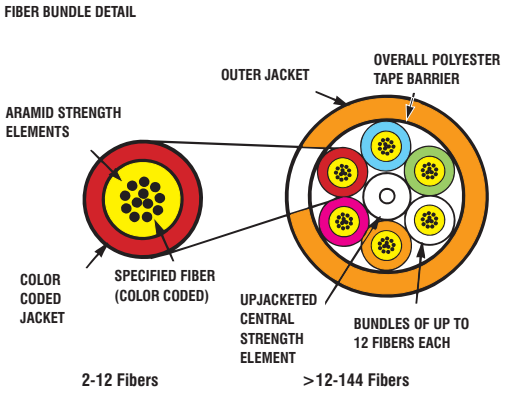
[5] >2000 meters for engineered links

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

Riser Distribution

AdvanceLite®

Riser UL/cUL Type OFNR/OFN FT4



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)	2000 N/cm
• Impact Resistance	(EIA-455-25)	2000 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

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.
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 43. *Single jacket version.

For Buffer and Inner Jacket colors see chart C on page 64.

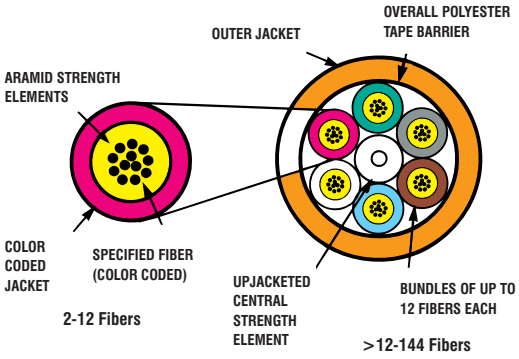
RoHS

Plenum Distribution

AdvanceLite®

Plenum UL/cUL Type OFNP/OFN FT6

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
- Flame Retardant
- UL listed for code compliance

Mechanical, Environmental & Flame Characteristics

• Crush Resistance	(EIA-455-41)	2000 N/cm
• Impact Resistance	(EIA-455-25)	2000 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	12.52	.493	132	89	19.0	7.5	12.6	5.0	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	26.59	1.047	539	362	39.9	15.7	26.7	10.5	16,213	3645

For "X" in part number see optical characteristics on page 43. *Single jacket version.

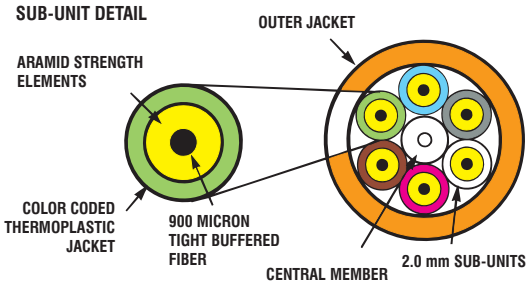
For Buffer and Inner Jacket colors see chart C on page 64.

RoHS

Riser Breakout

AdvanceLite®

2.0 mm sub-unit – Riser UL/cUL Type OFNR/OFN FT4



Recommended Applications

- Intrabuilding backbone cabling
- Work area cabling
- Computer room cabling
- Factory floor automation

Product Features

- 900 μm tight buffered fibers
- Color coded for easy termination
- Flame Retardant
- UL listed for code compliance
- Direct connectorization
- MSHA approved cables are available
- ABS LSZH available
- Also available in a 2.5mm sub-unit

Mechanical, Environmental & Flame Characteristics

• Crush Resistance	(EIA-455-41)	2000 N/cm
• Impact Resistance	(EIA-455-25)	2000 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

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.
M9X005	2	6.60	.260	36	24	9.9	3.9	6.6	2.6	1068	240
M9X006	4	8.15	.321	52	35	12.2	4.8	8.1	3.2	1535	345
M9X007	6	9.09	.358	80	54	13.6	5.4	9.1	3.6	2415	543
M9X008	8	10.29	.405	103	69	15.4	6.1	10.3	4.1	2700	600
M9X009	10	11.56	.455	128	86	17.3	6.8	11.5	4.5	2700	600
M9X010	12	13.06	.514	164	110	19.6	7.7	13.1	5.1	2700	600
M9X011	18	13.21	.520	155	104	19.8	7.8	13.2	5.2	2700	600
M9X012	24	14.99	.590	201	135	22.6	8.9	15.0	5.9	2700	600
M9X083	36	17.27	.680	250	168	25.9	10.2	17.3	6.8	2700	600

For "X" in part number see optical characteristics on page 43.

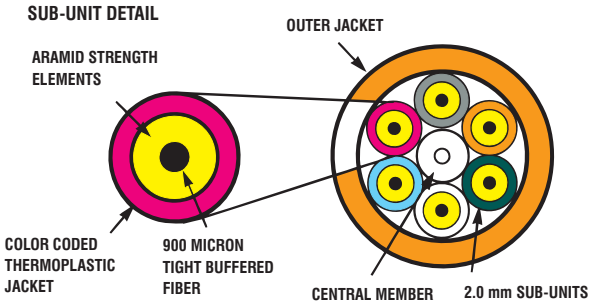
For fiber counts 2 – 12 see chart C on page 64. For greater than 12 fibers, jackets are orange or aqua (MM) or yellow (SM) and numbered.

RoHS

Plenum Breakout

AdvanceLite®

2.0 mm sub-unit – Plenum UL/cUL Type OFNP/OFN FT6



Recommended Applications

- Plenum and Riser backbone cabling
- Work area cabling
- Computer room cabling
- Factory floor automation

Product Features

- 900 μm tight buffered fibers
- Color coded for easy termination
- Flame Retardant
- UL listed for code compliance
- Direct connectorization
- Also available in a 2.5mm sub-unit

Mechanical, Environmental & Flame Characteristics

• Crush Resistance	(EIA-455-41)	2000 N/cm
• Impact Resistance	(EIA-455-25)	2000 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.
M9X013	2	5.84	.230	30	20	8.9	3.5	5.8	2.3	801	180
M9X014	4	6.68	.263	45	30	9.9	3.9	6.6	2.6	1535	345
M9X015	6	7.85	.309	61	41	11.7	4.6	7.9	3.1	2068	465
M9X016	8	8.53	.336	82	55	13.0	5.1	8.7	3.4	2700	600
M9X017	10	9.78	.385	109	73	14.7	5.8	9.8	3.9	2700	600
M9X018	12	9.93	.391	89	60	15.0	5.9	9.9	3.9	2700	600
M9X019	18	11.58	.456	132	89	17.3	6.8	11.4	4.5	2700	600
M9X020	24	13.82	.544	174	117	20.6	8.1	13.7	5.4	2700	600
M9X082	36	15.54	.612	229	154	23.6	9.3	15.7	6.2	2700	600

For "X" in part number see optical characteristics on page 43.

For fiber counts 2 – 12 see chart C on page 64. For greater than 12 fibers, jackets are orange or aqua (MM) or yellow (SM) and numbered.

RoHS

ArmorLite

AdvanceLite®

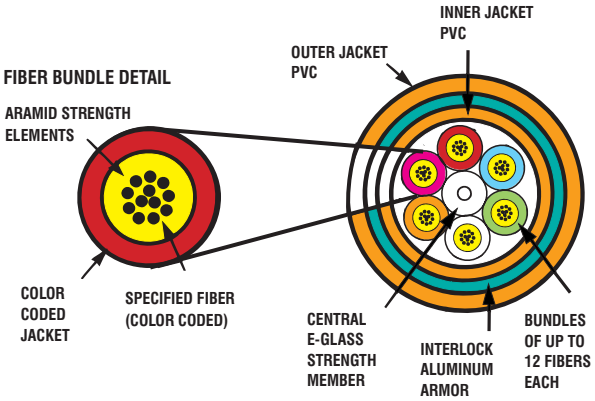
Heavy Duty Interlock Armored
Riser – UL/cUL Type OFCR/OFC FT4
Plenum – UL/cUL Type OFCP/OFC FT6

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
- Versions available for outside plant
- Colored armor available



Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	2000 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 +70°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

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.
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
M9X243	24	19.84	.781	201	135	39.6	15.6	29.7	11.7	5618	1263
M9X244	36	22.38	.881	460	309	44.7	17.6	33.5	13.2	8509	1913
M9X245	48	22.38	.881	439	295	44.7	17.6	33.5	13.2	5538	1245
M9X246	72	26.19	1.031	644	433	52.3	20.6	39.4	15.5	9310	2093
M9X247	96	30.63	1.206	905	608	61.2	24.1	46.0	18.1	9608	2160
M9X248	144	33.81	1.331	1022	687	67.6	26.6	50.8	20.0	16213	3645

For "X" in part number see optical characteristics on page 43.

For Buffer colors see chart C on page 64.

RoHS

Simplex & Duplex

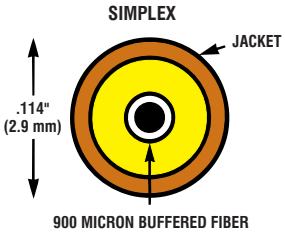
AdvanceLite®

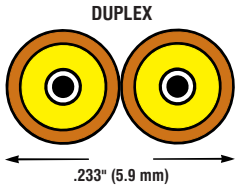
MOHAWK FIBER PRODUCTS

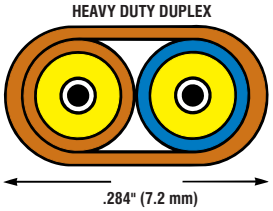
2.9 mm diameter – UL Type OFNR/cUL OFN FT4 UL Type OFNP/cUL OFN FT6 LSZH

Recommended Applications
- Patch cables
- Short run office cabling
- Computer room cabling

Product Features
- 900 μm tight buffer with "easy strip" coating
- Flexible riser rated jacket
- Private label and colors available
- 2.5mm, 2.0mm and 1.6mm diameter options







Mechanical, Environmental & Flame Characteristics

• Crush Resistance	(EIA-455-41)	200 N/cm
• Impact Resistance	(EIA-455-25)	20 Impacts w/1.0 N-m
• Flexure	(EIA-455-104)	100 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 +70°C
• UL/cUL Rated	Type OFNR / OFN FT4	
• UL/cUL Rated	Type OFNP / OFN FT6	
• LSZH	Type OFNR / OFN FT4	

Part Number	Type	Fiber Count	Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
			kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
Riser										
M9X001	Simplex	1	9	6	4.3	1.7	2.9	1.1	400	90
M9X002	Duplex	2	18	12	4.3	1.7	2.9	1.1	801	180
M9X080	Heavy Duty Duplex	2	31	21	6.3	2.5	4.2	1.7	801	180
Plenum										
M9X003	Simplex	1	9	6	4.3	1.7	2.9	1.1	400	90
M9X004	Duplex	2	19	13	4.3	1.7	2.9	1.1	801	180
M9X081	Heavy Duty Duplex	2	28	19	5.6	2.2	3.8	1.5	801	180

For "X" in part number see optical characteristics on page 43.

Low Smoke Zero Halogen

M96436	Simplex	1	9	6	4.3	1.7	2.9	1.1	400	90
M98177	Duplex	2	19	13	4.3	1.7	2.9	1.1	801	180
M95890	Heavy Duty Duplex	2	34	23	6.3	2.5	4.2	1.7	801	180

LSZH Cables contain 62.5/125 grade 2 fiber.

Also available with other fiber types.

RoHS

Riser & Plenum VersaLite TBF™

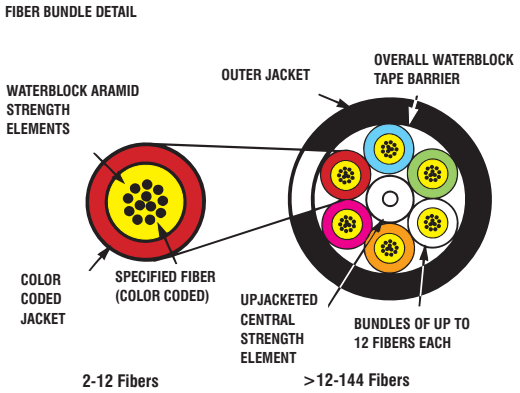
New Product

Tight Buffer Distribution

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

Recommended Applications
- Campus backbones
- Interbuilding installations
- Data centers

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



Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	220 N/cm
• Impact Resistance	(EIA-455-25)	2000 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)	Passed
	UL 910 (Plenum)	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	1335	300
M9X042T	12	6.48	.255	40	27	9.6	3.8	6.6	2.6	1335	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

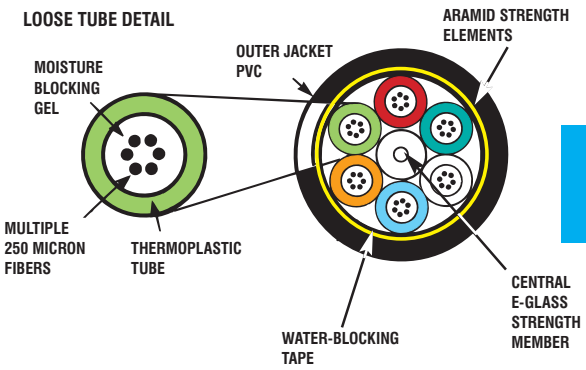
Part Number	Fiber Count	Outside Diameter		Weight		Min. Bend Radius Short Term		Min. Bend Radius Long Term		Max. Load (Installation)	
		mm	in.	kg/km	lbs/M'	cm	in.	cm	in.	Newtons	lbs.
M9X045T	6	4.83	.190	24	16	7.6	3.0	5.1	2.0	1335	300
M9X048T	12	5.72	.225	33	22	8.6	3.4	5.8	2.3	1335	300
M9X611T*	24	8.38	.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 43. *Single jacket version.

Loose Tube RiserLite®

AdvanceLite®

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 59)
- 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 43.

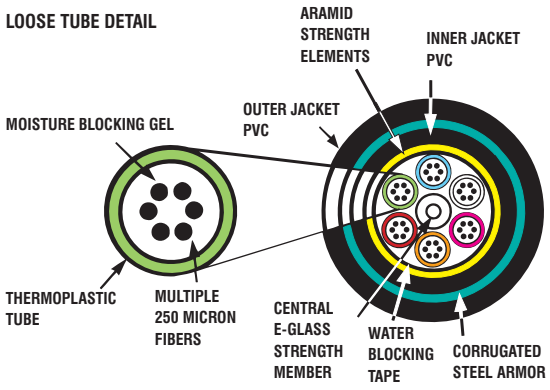
See color chart C on page 64.

RoHS

Loose Tube RiserLite®

AdvanceLite®

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 59)
- Fully water-blocked

Mechanical & Environmental Characteristics

• Crush Resistance	(EIA-455-41)	2000 N-m
• 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 43.

See color chart C on page 64.

RoHS

Plenum VersaLite®

AdvanceLite®

MOHAWK FIBER PRODUCTS

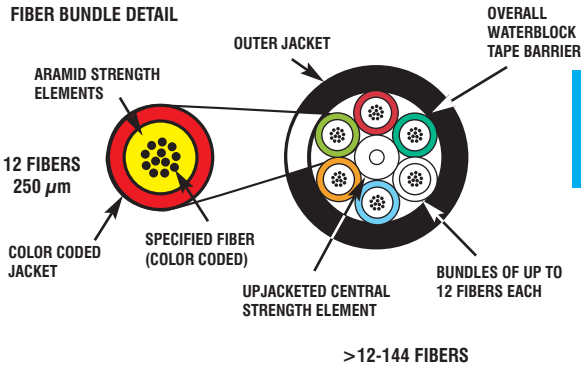
Indoor/Outdoor UL/cUL Type OFNP/OFN FT6

Recommended Applications

- Campus backbones
- Interbuilding installations
- Data centers
- High density cable trays

Product Features

- 2 to 144 fiber
- Small diameter and bend radius facilitate installation in tight spaces
- Fibers and subunits 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)	2000 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 43.

See color chart C on page 64.

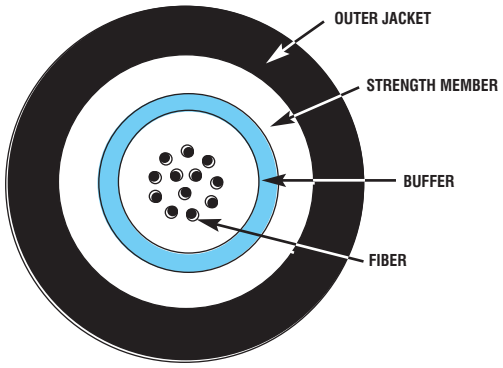
RoHS

Outside Plant
Central Tube

AdvanceLite®
Outside Plant

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	8.26	.325	52	35	16.5	6.5	12.45	4.9	2700	600
M9X151	4	8.26	.325	52	35	16.5	6.5	12.45	4.9	2700	600
M9X152	6	8.26	.325	52	35	16.5	6.5	12.45	4.9	2700	600
M9X153	8	8.26	.325	52	35	16.5	6.5	12.45	4.9	2700	600
M9X154	10	8.26	.325	52	35	16.5	6.5	12.45	4.9	2700	600
M9X155	12	8.26	.325	52	35	16.5	6.5	12.45	4.9	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 43.

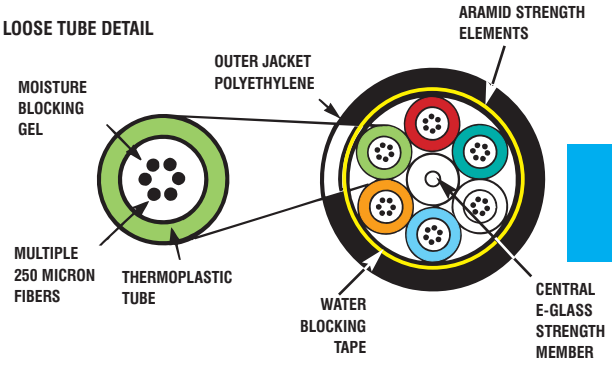
See color chart C on page 64.

RoHS

Outdoor Loose Tube

AdvanceLite®

Outdoor



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 59)
- Waterblock gel available

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	9.65	.380	65	44	19.3	7.6	14.5	5.7	2700	600
M9X511T	12	6	9.65	.380	65	44	19.3	7.6	14.5	5.7	2700	600
M9X500T	24	6	9.65	.380	67	45	19.3	7.6	14.5	5.7	2700	600
M9X502T	36	6	9.65	.380	70	47	19.3	7.6	14.5	5.7	2700	600
M9X505T	48	12	12.19	.480	104	70	24.4	9.6	18.3	7.2	2700	600
M9X507T	72	12	12.19	.480	104	70	24.4	9.6	18.3	7.2	2700	600
M9X513T	96	12	13.89	.547	138	93	27.7	10.9	20.8	8.1	2700	600
M9X509T	144	12	17.78	.700	222	149	35.6	14.0	26.7	10.5	2700	600
M9X520T	216	12	18.16	.715	220	148	36.3	14.3	27.2	10.7	2700	600

For "X" in part number see optical characteristics on page 43.

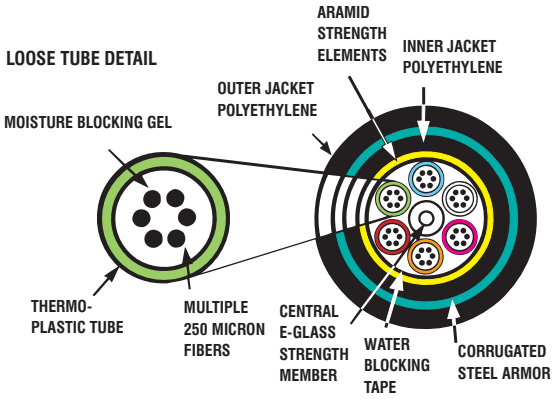
See color chart C on page 64.

RoHS

Armored Loose Tube

AdvanceLite®

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 59)
- Corrugated Steel Tape
- Rodent Resistant
- Waterblock gel available

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 43.

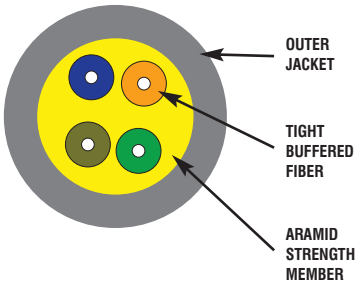
See color chart C on page 64.

RoHS

Tactical Cables

AdvanceLite®

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	6.5	.255	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	6.5	.255	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 43.

For buffer colors see chart C on page 64.

RoHS

Optimax® System

Recommended Applications

- Field termination of cable
- Storage network connections
- Switch to fiber distribution
- Panel connections

Product Features

- **Pre-Polished Fiber Stub**
  Does not require polishing paper; less craft-sensitive
- **Safer, Simpler Installation**
  No epoxy, curing equipment or power needed
- **Precision Fiber Contact**
  Pre-radiused PC ceramic ferrule assures durable contact and optimum mechanical performance
- **Dramatic Reductions in:**
  Installation Time; Cost of Equipment and Materials; Expertise/Training Required

The Optimax Connectors are reliable field installable optical fiber connectors that are easy to install. They do not require epoxy, curing or polishing. Their unique design incorporates a factory polished fiber stub in a splice mechanism which provides a fast, secure, and reliable termination on optical fiber cables. All critical steps are performed in the factory, ensuring a superior-qualty connection every time. Only simple tools are required for installation, making Optimax a cost effective field termination.

Optimax Connectors are high-quality LC, SC and ST Compatible connectors that use a ceramic ferrule with a physical contact (PC) polish for Multimode and super physical contact (SPC) polish for Single-mode that ensures the best possible mating of optical fibers. Connectors are available for 62.5 or 50/125 μm Multimode fiber and Single-mode fiber installations.

Options

- Field-installable Multimode ST-Type, SC or LC Fiber Optic Connectors

Part Number	Description
A0408835	900μm 62.5/125 ST connector
AX101075	900μm 50/125 ST connector*
AX101791	900μm Single-Mode ST connector
AX101793	Additional parts for jacketed ST
AX100029	900μm 62.5/125 SC connector
AX101077	900μm 50/125 SC connector*
AX101792	900μm Single-Mode SC connector
AX101794	Additional parts for jacketed SC
AX101981	900μm 62.5/125 LC connector
AX101982	900μm 50/125 LC connector*
AX101983	900μm Single-Mode LC connector
AX101984	Additional parts for jacketed LC

*LOMMF - Laser Optimized Multi-Mode Fiber Grades.

Specifications

Interconnection Compatibility: All ST-type, SC and LC connectors and compatibles
Field Assembly Time: 1 minute for 900 μm fiber; 3 minutes for jacketed fiber
Insertion Loss (Attenuation): 0.3 dB (typical)
Durability: <0.2 dB change, 500 cycles multimode; <0.3 dB change, 500 cycles single-mode
Nominal Fiber OD: 125 μm
Operating Temperature: 0°C to +60°C (+32°F to +140°F)
Storage Temperature: -40°C to +65°C (-40°F to +149°F)
Tensile Strength: 12 lbs (54 N) -Jacketed Fiber
Ferrule: Ceramic
Reflectance: -30 dB (typical) multimode; -40 dB (guaranteed) single-mode

Optimax® Enhanced Tool Kit

Everything your field people need and need to know. For expert installations, we have packaged everything in a small convenient carrying case: installation instructions and all the tools required to terminate 900 μm buffered optical fiber and jacketed fiber.

The kit has been enhanced to include a multi-head universal tool to terminate all three types of connectors. A handy table top that holds the installation tool has replaced the c-clamp allowing for easy installation.

Note: For installers already possessing basic fiber installation tools, dedicated tools can be purchased separately.

Part Number	Description
AX103142	Complete Enhanced Tool Kit
AX103147	Enhanced Tool Kit Upgrade (new universal tool, tool table top, instructions & foam for case)
AX103152	Universal Installation Tool LC/SC/ST (includes insert, tool, tool clamp)
AX103153	Table Top for Installation Tool
A0408829	Fiber Cleaver

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**
  Subunits 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 43.)

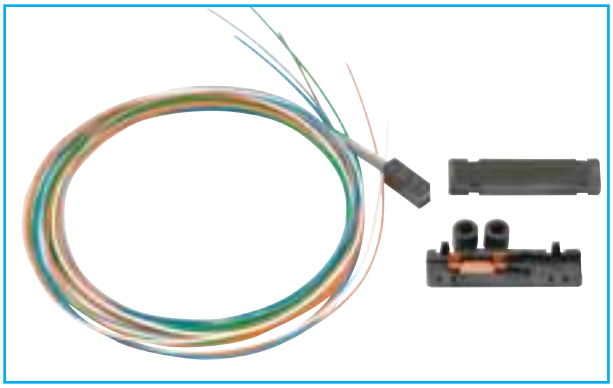
*Polarity per TIA/EIA array connector cable type "A". Other methods available upon request

For Copper Plug & Play Assembly see page 37.

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.



Part Number	Tube Diameter	Fibers/Tube
AX101100	0.075" (1.9 mm)	≤ 6
AX101101	0.110" (2.8 mm)	7-12

Cross Reference

Fiber Optic Cable Part # Cross Reference

Riser Rated Patch Cables (OFNR)

Corning Cable	Berk-Tek	Mohawk	Fiber Size
001K31-31141-24	ICR001CB3510/25	**M97112**	62.5/125
002K51-31141-24	ICR0X0CB3510/25	**M96915**	62.5/125
002K81-31130-24	ICR002CB3510/25	**M9B037**	62.5/125
001C31-31131-24	ICR001ZB3515/15	**M9A001**	50/125
002C51-31131-24	ICR0X0ZB3515/15	**M9A002**	50/125
002C81-31131-24	ICR002ZB3515/15	**M9A037**	50/125
001S31-31180-24	ICR001EB3010/25	**M9C001**	50/125
002S51-31180-24	ICR0X0EB3010/25	**M9C002**	50/125
002S81-31180-24	ICR002EB3010/25	**M9C037**	50/125
001E31-31131-24	ICR001AB0707	**M9W001**	Single-Mode
002E51-31131-24	ICR0X0AB0707	**M9W002**	Single-Mode
002E81-31131-24	ICR002AB0707	**M9W037**	Single-Mode

Plenum Rated Patch Cables (OFNP)

Corning Cable	Berk-Tek	Mohawk	Fiber Size
001K38-31141-29	ICP001CB3510/25	**M98086**	62.5/125
002K58-31141-24	ICP0X0CB3510/25	**M96919**	62.5/125
002K88-31130-29	ICP002CB3510/25	**M9B043**	62.5/125
001C38-31131-29	ICP001ZB3515/15	**M9A003**	50/125
002C58-31131-24	ICP0X0ZB3515/15	**M9A004**	50/125
002C88-31131-29	ICP002ZB3515/15	**M9A043**	50/125
001S38-31180-29	ICP001EB3010/25	**M9C003**	50/125
002S58-31180-24	ICP0X0EB3010/25	**M9C004**	50/125
002S88-31180-29	ICP002EB3010/25	**M9C043**	50/125
001E38-31131-29	ICP001AB0707	**M9W003**	Single-Mode
002E58-31131-24	ICP0X0AB0707	**M9W004**	Single-Mode
002E88-31131-29	ICP002AB0707	**M9W043**	Single-Mode

Riser Rated Distribution Cables (OFNR)

Corning Cable	Berk-Tek	Mohawk	Fiber Size
004K81-31130-24	ICR004CB3510/25	**M9B038**	62.5/125
006K81-31130-24	PDR006CB3510/25	**M9B039**	62.5/125
008K81-31130-24	—	**M9B040**	62.5/125
012K81-33130-24	PDR012CB3510/25	**M9B042**	62.5/125
—	PDR12B024CB3510/25	**M9B602**	62.5/125
036K81-61130-24	—	**M9B604**	62.5/125
048K81-61130-24	PDR12B048CB3510/25	**M9B606**	62.5/125
072K81-T3130-24	PDR12B072CB3510/25	**M9B609**	62.5/125
096K81-T3130-24	—	**M9B622**	62.5/125
144K81-T3130-24	PDR12B144CB3510/25	**M9B619**	62.5/125
004C81-31131-24	ICR004ZB3515/15	**M9A038**	50/125
006C81-31131-24	PDR006ZB3515/25	**M9A039**	50/125
008C81-31131-24	—	**M9A040**	50/125
012C81-33131-24	PDR012ZB3515/15	**M9A042**	50/125
—	PDR12B024ZB3515/15	**M9A602**	50/125
036C81-61131-24	—	**M9A604**	50/125
048C81-61131-24	PDR12B048ZB3515/15	**M9A606**	50/125
072C81-T3131-24	PDR12B072ZB3515/15	**M9A609**	50/125
096C81-T3131-24	—	**M9A622**	50/125
144C81-T3131-24	PDR12B144ZB3515/15	**M9A619**	50/125
004S81-31180-24	ICR004EB3010/25	**M9C038**	50/125
006S81-31180-24	PDR006EB3010/25	**M9C039**	50/125
008S81-31180-24	—	**M9C040**	50/125

Riser Rated Distribution Cables (OFNR) *continued*

Corning Cable	Berk-Tek	Mohawk	Fiber Size
012S81-33180-24	PDR012EB3010/25	**M9C042**	50/125
—	PDR12B024EB3010/25	**M9C602**	50/125
036S81-61180-24	—	**M9C604**	50/125
048S81-61180-24	PDR12B048EB3010/25	**M9C606**	50/125
072S81-T3180-24	PDR12B072EB3010/25	**M9C609**	50/125
096S81-T3180-24	—	**M9C622**	50/125
144S81-T3180-24	PDR12B144EB3010/25	**M9C619**	50/125
004E81-31131-24	ICR004AB0707	**M9W038**	Single-Mode
006E81-31131-24	PDR006AB0707	**M9W039**	Single-Mode
008E81-31131-24	—	**M9W040**	Single-Mode
012E81-33131-24	PDR012AB0707	**M9W042**	Single-Mode
—	PDR12B024AB0707	**M9W602**	Single-Mode
036E81-61131-24	—	**M9W604**	Single-Mode
048E81-61131-24	PDR12B048AB0707	**M9W606**	Single-Mode
072E81-T3131-24	PDR12B072AB0707	**M9W609**	Single-Mode
096E81-T3131-24	—	**M9W622**	Single-Mode
144E81-T3131-24	PDR12B144AB0707	**M9W619**	Single-Mode

Plenum Rated Distribution Cables (OFNP)

Corning Cable	Berk-Tek	Mohawk	Fiber Size
004K88-31130-29	ICP004CB3510/25	**M9B044**	62.5/125
006K88-31130-29	PDP006CB3510/25	**M9B045**	62.5/125
008K88-31130-29	—	**M9B046**	62.5/125
012K88-33130-29	PDP012CB3510/25	**M9B048**	62.5/125
024K88-33130-29	PDP12B024CB3510/25	**M9B611**	62.5/125
036K88-61130-29	—	**M9B614**	62.5/125
048K88-T3130-29	PDP12B048CB3510/25	**M9B616**	62.5/125
072K88-T3130-29	PDP12B072CB3510/25	**M9B620**	62.5/125
096K88-T3130-29	—	**M9B623**	62.5/125
144K88-T3130-29	PDP12B144CB3510/25	**M9B621**	62.5/125
004C88-31131-29	ICP004ZB3515/15	**M9A044**	50/125
006C88-31131-29	PDP006ZB3515/15	**M9A045**	50/125
008C88-31131-29	—	**M9A046**	50/125
012C88-33131-29	PDP012ZB3515/15	**M9A048**	50/125
024C88-33131-29	PDP12B024ZB3515/15	**M9A611**	50/125
036C88-61131-29	—	**M9A614**	50/125
048C88-T3131-29	PDP12B048ZB3515/15	**M9A616**	50/125
072C88-T3131-29	PDP12B072ZB3515/15	**M9A620**	50/125
096C88-T3131-29	—	**M9A623**	50/125
144C88-T3131-29	PDP12B144ZB3515/15	**M9A621**	50/125
004S88-31180-29	ICP004EB3010/25	**M9C044**	50/125
006S88-31180-29	PDP006EB3010/25	**M9C045**	50/125
008S88-31180-29	—	**M9C046**	50/125
012S88-33180-29	PDP012EB3010/25	**M9C048**	50/125
024S88-33180-29	PDP12B024EB3010/25	**M9C611**	50/125
036S88-61180-29	—	**M9C614**	50/125
048S88-T3180-29	PDP12B048EB3010/25	**M9C616**	50/125
072S88-T3180-29	PDP12B072EB3010/25	**M9C620**	50/125
096S88-T3180-29	—	**M9C623**	50/125
144S88-T3180-29	PDP12B144EB3010/25	**M9C621**	50/125

Cross Reference

Fiber Optic Cable Part # Cross Reference

Corning Cable	Berk-Tek	Mohawk	Fiber Size
Plenum Rated Distribution Cables (OFNP)*continued*			
004E88-31131-29	ICP004AB0707	**M9W044**	Single-Mode
006E88-31131-29	PDP006AB0707	**M9W045**	Single-Mode
008E88-31131-29	—	**M9W046**	Single-Mode
012E88-33131-29	PDP012AB0707	**M9W048**	Single-Mode
024E88-33131-29	PDP12B024AB0707	**M9W611**	Single-Mode
036E88-61131-29	—	**M9W614**	Single-Mode
048E88-T3131-29	PDP12B048AB0707	**M9W616**	Single-Mode
072E88-T3131-29	PDP12B072AB0707	**M9W620**	Single-Mode
096E88-T3131-29	—	**M9W623**	Single-Mode
144E88-T3131-29	PDP12B144AB0707	**M9W621**	Single-Mode
ArmorLite Plenum Rated Distribution Cables (OFNP)			
006K88-31130-A3	PDPK006CB3510/25	**M9B240**	62.5/125
012K88-33130-A3	PDPK012CB3510/25	**M9B241**	62.5/125
024K88-33130-A3	PDPK024CB3510/25	**M9B242**	62.5/125
006C88-31131-A3	PDPK006ZB3515/15	**M9A240**	50/125
012C88-33131-A3	PDPK012ZB3515/15	**M9A241**	50/125
024C88-33131-A3	PDPK024ZB3515/15	**M9A242**	50/125
006S88-31180-A3	PDPK006EB3010/25	**M9C240**	50/125
012S88-33180-A3	PDPK012EB3010/25	**M9C241**	50/125
024S88-33180-A3	PDPK024EB3010/25	**M9C242**	50/125
006E88-31131-A3	PDPK006AB0707	**M9W240**	Single-Mode
012E88-33131-A3	PDPK012AB0707	**M9W241**	Single-Mode
024E88-33131-A3	PDPK024AB0707	**M9W242**	Single-Mode
TBF - Indoor/Outdoor Tight Buffer Riser (OFNR)			
006K8F-31130-29	PDR006CB3510/25-I/O(BLA)	**M9B039T**	62.5/125
012K8F-31130-29	PDR012CB3510/25-I/O(BLA)	**M9B042T**	62.5/125
024K8F-31130-29	PDR024CB3510/25-I/O(BLA)	**M9B602T**	62.5/125
006C8F-31131-29	PDR006ZB3515/15-I/O(BLA)	**M9A039T**	50/125
012C8F-31131-29	PDR012ZB3515/15-I/O(BLA)	**M9A042T**	50/125
024C8F-31131-29	PDR024ZB3515/15-I/O(BLA)	**M9A602T**	50/125
006S8F-31180-29	PDR006EB3010/25-I/O(BLA)	**M9C039T**	50/125
012S8F-31180-29	PDR012EB3010/25-I/O(BLA)	**M9C042T**	50/125
024S8F-31180-29	PDR024EB3010/25-I/O(BLA)	**M9C602T**	50/125
006E8F-31131-29	PDR006AB0707-I/O(BLA)	**M9W039T**	Single-Mode
012E8F-31131-29	PDR012AB0707-I/O(BLA)	**M9W042T**	Single-Mode
024E8F-31131-29	PDR024AB0707-I/O(BLA)	**M9W602T**	Single-Mode

Corning Cable	Berk-Tek	Mohawk	Fiber Size
TBF - Indoor/Outdoor Tight Buffer Plenum (OFNP)			
006K8P-31130-29	PDP006CB3510/25-HE(BLA)	**M9B045T**	62.5/125
012K8P-31130-29	PDP012CB3510/25-HE(BLA)	**M9B048T**	62.5/125
024K8P-31130-29	PDP024CB3510/25-HE(BLA)	**M9B612T**	62.5/125
006C8P-31131-29	PDP006ZB3515/15-HE(BLA)	**M9A045T**	50/125
012C8P-31131-29	PDP012ZB3515/15-HE(BLA)	**M9A048T**	50/125
024C8P-31131-29	PDP024ZB3515/15-HE(BLA)	**M9A612T**	50/125
006S8P-31180-29	PDP006EB3010/25-HE(BLA)	**M9C045T**	50/125
012S8P-31180-29	PDP012EB3010/25-HE(BLA)	**M9C048T**	50/125
024S8P-31180-29	PDP024EB3010/25-HE(BLA)	**M9C612T**	50/125
006E8P-31131-29	PDP006AB0707-HE(BLA)	**M9W045T**	Single-Mode
012E8P-31131-29	PDP012AB0707-HE(BLA)	**M9W048T**	Single-Mode
024E8P-31131-29	PDP024AB0707-HE(BLA)	**M9W612T**	Single-Mode
RiserLite® Loose Tube Cables (OFNR)			
006KWF-T4130D20	LTR006CB3510/25	**M9B810**	62.5/125
012KWF-T4130D20	LTR012CB3510/25	**M9B811**	62.5/125
024KWF-T4130D20	LTR12B024CB3510/25	**M9B812**	62.5/125
036KWF-T4130D20	—	**M9B813**	62.5/125
048KWF-T4130D20	LTR12B048CB3510/25	**M9B814**	62.5/125
072KWF-T4130D20	LTR12B072CB3510/25	**M9B815**	62.5/125
096KWF-T4130D20	—	**M9B816**	62.5/125
144KWF-T4130D20	LTR12B144CB3510/25	**M9B817**	62.5/125
006CWF-T4131D20	LTR006ZB3515/15	**M9A810**	50/125
012CWF-T4131D20	LTR012ZB3515/15	**M9A811**	50/125
024CWF-T4131D20	LTR12B024ZB3515/15	**M9A812**	50/125
036CWF-T4131D20	—	**M9A813**	50/125
048CWF-T4131D20	LTR12B048ZB3515/15	**M9A814**	50/125
072CWF-T4131D20	LTR12B072ZB3515/15	**M9A815**	50/125
096CWF-T4131D20	—	**M9A816**	50/125
144CWF-T4131D20	LTR12B144ZB3515/15	**M9A817**	50/125
006SWF-T4180D20	LTR006EB3010/25	**M9C810**	50/125
012SWF-T4180D20	LTR012EB3010/25	**M9C811**	50/125
024SWF-T4180D20	LTR12B024EB3010/25	**M9C812**	50/125
036SWF-T4180D20	—	**M9C813**	50/125
048SWF-T4180D20	LTR12B048EB3515/15	**M9C814**	50/125
072SWF-T4180D20	LTR12B072EB3515/15	**M9C815**	50/125
096SWF-T4180D20	—	**M9C816**	50/125
144SWF-T4180D20	LTR12B144EB3515/15	**M9C817**	50/125

This cross reference should be used in conjunction with Mohawk's Fiber Optic section. It should be used for suggested alternative items which are functionally equal. Mohawk is not responsible for variances due to competitors' construction changes. Consult your local Mohawk representative or the factory for items not listed or for special cable constructions.

Cross Reference

Fiber Optic Cable Part # Cross Reference

Corning Cable	Berk-Tek	Mohawk	Fiber Size
RiserLite® Loose Tube Cables (OFNR)*continued*			
006EWF-T4101D20	LTR006AB0403	**M9W810**	Single-Mode
012EWF-T4101D20	LTR012AB0403	**M9W811**	Single-Mode
024EWF-T4101D20	LTR12B024AB0403	**M9W812**	Single-Mode
036EWF-T4101D20	—	**M9W813**	Single-Mode
048EWF-T4101D20	LTR12B048AB0403	**M9W814**	Single-Mode
072EWF-T4101D20	LTR12B072AB0403	**M9W815**	Single-Mode
096EWF-T4101D20	—	**M9W816**	Single-Mode
144EWF-T4101D20	LTR12B144AB0403	**M9W817**	Single-Mode
RiserLite® Armored Loose Tube Cables (OFNR)			
006KWF-T4130DA1	LTRK006CB3510/25	**M9B890**	62.5/125
012KWF-T4130DA1	LTRK012CB3510/25	**M9B891**	62.5/125
024KWF-T4130DA1	LTRK12B024CB3510/25	**M9B892**	62.5/125
036KWF-T4130DA1	—	**M9B893**	62.5/125
048KWF-T4130DA1	LTRK12B048CB3510/25	**M9B894**	62.5/125
072KWF-T4130DA1	LTRK12B072CB3510/25	**M9B895**	62.5/125
096KWF-T4130DA1	—	**M9B896**	62.5/125
144KWF-T4130DA1	LTRK12B144CB3510/25	**M9B897**	62.5/125
006CWF-T4131DA1	LTRK006ZB3515/55	**M9A890**	50/125
012CWF-T4131DA1	LTRK012ZB3515/55	**M9A891**	50/125
024CWF-T4131DA1	LTRK12B024ZB3515/55	**M9A892**	50/125
036CWF-T4131DA1	—	**M9A893**	50/125
048CWF-T4131DA1	LTRK12B048ZB3515/55	**M9A894**	50/125
072CWF-T4131DA1	LTRK12B072ZB3515/55	**M9A895**	50/125
096CWF-T4131DA1	—	**M9A896**	50/125
144CWF-T4131DA1	LTRK12B144ZB3515/55	**M9A897**	50/125
006SWF-T4180DA1	LTRK006EB3010/25	**M9A890**	50/125
012SWF-T4180DA1	LTRK012EB3010/25	**M9A891**	50/125
024SWF-T4180DA1	LTRK12B024EB3010/25	**M9A892**	50/125
036SWF-T4180DA1	—	**M9A893**	50/125
048SWF-T4180DA1	LTRK12B048EB3010/25	**M9A894**	50/125
072SWF-T4180DA1	LTRK12B072EB3010/25	**M9A895**	50/125
096SWF-T4180DA1	—	**M9A896**	50/125
144SWF-T4180DA1	LTRK12B144EB3010/25	**M9A897**	50/125
006EWF-T4101DA1	LTRK006AB0504	**M9W890**	Single-Mode
012EWF-T4101DA1	LTRK012AB0504	**M9W891**	Single-Mode
024EWF-T4101DA1	LTRK12B024AB0504	**M9W892**	Single-Mode
036EWF-T4101DA1	—	**M9W893**	Single-Mode
048EWF-T4101DA1	LTRK12B048AB0504	**M9W894**	Single-Mode
072EWF-T4101DA1	LTRK12B072AB0504	**M9W895**	Single-Mode
096EWF-T4101DA1	—	**M9W896**	Single-Mode
144EWF-T4101DA1	LTRK12B144AB0504	**M9W897**	Single-Mode

Corning Cable	Berk-Tek	Mohawk	Fiber Size
VersaLite® Loose Tube Cables (OFNP)			
006KSP-T4130D20	LTP006CB3510/25	**M9B202**	62.5/125
012KSP-T4130D20	LTP012CB3510/25	**M9B204**	62.5/125
024KWP-T4130D20	LTP12B024CB3510/25	**M9B205**	62.5/125
036KWP-T4130D20	LTP12B036CB3510/25	**M9B206**	62.5/125
048KWP-T4130D20	LTP12B048CB3510/25	**M9B207**	62.5/125
072KWP-T4130D20	LTP12B072CB3510/25	**M9B209**	62.5/125
096KWP-T4130D20	LTP12B096CB3510/25	**M9B211**	62.5/125
144KWP-T4130D20	LTP12B144CB3510/25	**M9B215**	62.5/125
006CSP-T4131D20	LTP006ZB3515/15	**M9A202**	50/125
012CSP-T4131D20	LTP012ZB3515/15	**M9A204**	50/125
024CWP-T4131D20	LTP12B024ZB3515/15	**M9A205**	50/125
036CWP-T4131D20	LTP12B036ZB3515/15	**M9A206**	50/125
048CWP-T4131D20	LTP12B048ZB3515/15	**M9A207**	50/125
072CWP-T4131D20	LTP12B072ZB3515/15	**M9A209**	50/125
096CWP-T4131D20	LTP12B096ZB3515/15	**M9A211**	50/125
144CWP-T4131D20	LTP12B0144ZB3515/15	**M9A215**	50/125
006SSP-T4180D20	LTP006EB3010/25	**M9C202**	50/125
012SSP-T4180D20	LTP012EB3010/25	**M9C204**	50/125
024SWP-T4180D20	LTP12B024EB3010/25	**M9C205**	50/125
036SWP-T4180D20	LTP12B036EB3010/25	**M9C206**	50/125
048SWP-T4180D20	LTP12B048EB3010/25	**M9C207**	50/125
072SWP-T4180D20	LTP12B072EB3010/25	**M9C209**	50/125
096SWP-T4180D20	LTP12B096EB3010/25	**M9C211**	50/125
144SWP-T4180D20	LTP12B144EB3010/25	**M9C215**	50/125
006ESP-T4101D20	LTP006AB0403	**M9W202**	Single-Mode
012ESP-T4101D20	LTP012AB0403	**M9W204**	Single-Mode
024EWP-T4101D20	LTP12B024AB0403	**M9W205**	Single-Mode
036EWP-T4101D20	LTP12B036AB0403	**M9W206**	Single-Mode
048EWP-T4101D20	LTP12B048AB0403	**M9W207**	Single-Mode
072EWP-T4101D20	LTP12B072AB0403	**M9W209**	Single-Mode
096EWP-T4101D20	LTP12B096AB0403	**M9W211**	Single-Mode
144EWP-T4101D20	LTP12B144AB0403	**M9W215**	Single-Mode
Loose Tube Outdoor Cables			
006KW4-T4130D20		**M9B510T**	62.5/125
012KW4-T4130D20	OPDD12B012CB3510/25	**M9B511T**	62.5/125
024KW4-T4130D20	OPAD12B024CB3510/25	**M9B500T**	62.5/125
036KW4-T4130D20	OPDD12B036CB3510/25	**M9B502T**	62.5/125
048KW4-T4130D20	OPDD12B048CB3510/25	**M9B505T**	62.5/125
072KW4-T4130D20	OPDD12B072CB3510/25	**M9B507T**	62.5/125
096KW4-T4130D20	OPDD12B096CB3510/25	**M9B513T**	62.5/125
144KW4-T4130D20	OPDD12B144CB3510/25	**M9B509T**	62.5/125
216KW4-T4130D20	OPDD12B216CB3510/25	**M9B520T**	62.5/125
006CW4-T4131D20	—	**M9A510T**	50/125

Cross Reference

Fiber Optic Cable Part # Cross Reference

Corning Cable	Berk-Tek	Mohawk	Fiber Size
Loose Tube Outdoor Cables *continued*			
012CW4-T4131D20	OPDD12B012ZB3515/15	**M9A511T**	50/125
024CW4-T4131D20	OPDD12B024ZB3515/15	**M9A500T**	50/125
036CW4-T4131D20	OPDD12B036ZB3515/15	**M9A502T**	50/125
048CW4-T4131D20	OPDD12B048ZB3515/15	**M9A505T**	50/125
072CW4-T4131D20	OPDD12B072ZB3515/15	**M9A507T**	50/125
096CW4-T4131D20	OPDD12B096ZB3515/15	**M9A513T**	50/125
144CW4-T4131D20	OPDD12B144ZB3515/15	**M9A509T**	50/125
216CW4-T4131D20	OPDD12B216ZB3515/15	**M9A520T**	50/125
006SW4-T4180D20	—	**M9C510T**	50/125
012SW4-T4180D20	OPDD12B012EB3010/25	**M9C511T**	50/125
024SW4-T4180D20	OPDD12B024EB3010/25	**M9C500T**	50/125
036SW4-T4180D20	OPDD12B036EB3010/25	**M9C502T**	50/125
048SW4-T4180D20	OPDD12B048EB3010/25	**M9C505T**	50/125
072SW4-T4180D20	OPDD12B072EB3010/25	**M9C507T**	50/125
096SW4-T4180D20	OPDD12B096EB3010/25	**M9C513T**	50/125
144SW4-T4180D20	OPDD12B144EB3010/25	**M9C509T**	50/125
216SW4-T4180D20	OPDD12B216EB3010/25	**M9C520T**	50/125
006EW4-T4101D20	—	**M9W510T**	Single Mode
012EW4-T4101D20	OPDD12B012AB0403	**M9W511T**	Single Mode
024EW4-T4101D20	OPDD12B024AB0403	**M9W500T**	Single Mode
036EW4-T4101D20	OPDD12B036AB0403	**M9W502T**	Single Mode
048EW4-T4101D20	OPDD12B048AB0403	**M9W505T**	Single Mode
072EW4-T4101D20	OPDD12B072AB0403	**M9W507T**	Single Mode
096EW4-T4101D20	OPDD12B096AB0403	**M9W513T**	Single Mode
144EW4-T4101D20	OPDD12B144AB0403	**M9W509T**	Single Mode
216EW4-T4101D20	OPDD12B216AB0403	**M9W520T**	Single Mode
Central Loose Tube Outdoor Cables			
006KB4-14130A20	OPD006CB3510/25	**M9B152**	62.5/125
012KB4-14130A20	OPD012CB3510/25	**M9B155**	62.5/125
006CB4-14131A20	OPD006ZB3515/15	**M9A152**	50/125
012CB4-14131A20	OPD012ZB3515/15	**M9A155**	50/125
006SB4-14180A20	OPD006EB3010/25	**M9C152**	50/125
012SB4-14180A20	OPD012EB3010/25	**M9C155**	50/125
006EB4-14101A20	OPD006AB0403	**M9W152**	Single-Mode
012EB4-14101A20	OPD012AB0403	**M9W155**	Single-Mode
Loose Tube Armored Outdoor Cables			
006KW5-T3130D20	—	**M9B381T**	62.5/125
012KW5-T3130D20	OPAD12B012CB3510/25	**M9B382T**	62.5/125
024KW5-T3130D20	OPAD12B024CB3510/25	**M9B384T**	62.5/125
036KW5-T3130D20	OPAD12B036CB3510/25	**M9B386T**	62.5/125

Corning Cable	Berk-Tek	Mohawk	Fiber Size
Loose Tube Armored Outdoor Cables *continued*			
048KW5-T3130D20	OPAD12B048CB3510/25	**M9B389T**	62.5/125
072KW5-T3130D20	OPAD12B072CB3510/25	**M9B391T**	62.5/125
096KW5-T3130D20	OPAD12B096CB3510/25	**M9B398T**	62.5/125
144KW5-T3130D20	OPAD12B144CB3510/25	**M9B393T**	62.5/125
216KW5-T3130D20	OPAD12B216CB3510/25	**M9B400T**	62.5/125
006CW5-T3131D20	—	**M9A381T**	50/125
012CW5-T3131D20	OPAD12B012ZB3515/15	**M9A382T**	50/125
024CW5-T3131D20	OPAD12B024ZB3515/15	**M9A384T**	50/125
036CW5-T3131D20	OPAD12B036ZB3515/15	**M9A386T**	50/125
048CW5-T3131D20	OPAD12B048ZB3515/15	**M9A389T**	50/125
072CW5-T3131D20	OPAD12B072ZB3515/15	**M9A391T**	50/125
096CW5-T3131D20	OPAD12B096ZB3515/15	**M9A398T**	50/125
144CW5-T3131D20	OPAD12B144ZB3515/15	**M9A393T**	50/125
216CW5-T3131D20	OPAD12B216ZB3515/15	**M9A400T**	50/125
006SW5-T3180D20	—	**M9C381T**	50/125
012SW5-T3180D20	OPAD12B012EB3010/25	**M9C382T**	50/125
024SW5-T3180D20	OPAD12B024EB3010/25	**M9C384T**	50/125
036SW5-T3180D20	OPAD12B036EB3010/25	**M9C386T**	50/125
048SW5-T3180D20	OPAD12B048EB3010/25	**M9C389T**	50/125
072SW5-T3180D20	OPAD12B072EB3010/25	**M9C391T**	50/125
096SW5-T3180D20	OPAD12B096EB3010/25	**M9C398T**	50/125
144SW5-T3180D20	OPAD12B144EB3010/25	**M9C393T**	50/125
216SW5-T3180D20	OPAD12B216EB3010/25	**M9C400T**	50/125
006EW5-T3101D20	—	**M9W381T**	Single-Mode
012EW5-T3101D20	OPAD12B012AB0403	**M9W382T**	Single-Mode
024EW5-T3101D20	OPAD12B024AB0403	**M9W384T**	Single-Mode
036EW5-T3101D20	OPAD12B036AB0403	**M9W386T**	Single-Mode
048EW5-T3101D20	OPAD12B048AB0403	**M9W389T**	Single-Mode
072EW5-T3101D20	OPAD12B072AB0403	**M9W391T**	Single-Mode
096EW5-T3101D20	OPAD12B096AB0403	**M9W398T**	Single-Mode
144EW5-T3101D20	OPAD12B144AB0403	**M9W393T**	Single-Mode
216EW5-T3101D20	OPAD12B216AB0403	**M9W400T**	Single-Mode
Central Loose Tube Armored Outdoor Cables			
006KB5-T3130A20	OPA006CB3510/25	**M9B172**	62.5/125
012KB5-T3130A20	OPA012CB3510/25	**M9B175**	62.5/125
006CB5-T3131A20	OPA006ZB3515/15	**M9A172**	50/125
012CB5-T3131A20	OPA012ZB3515/15	**M9A175**	50/125
006SB5-T3180A20	OPA006EB3010/25	**M9C172**	50/125
012SB5-T3180A20	OPA006EB3010/25	**M9C175**	50/125
006EB5-T3101A20	OPA006AB0403	**M9W172**	Single Mode
012EB5-T3101A20	OPA012AB0403	**M9W175**	Single Mode

This cross reference should be used in conjunction with Mohawk's Fiber Optic section. It should be used for suggested alternative items which are functionally equal. Mohawk is not responsible for variances due to competitors' construction changes. Consult your local Mohawk representative or the factory for items not listed or for special cable constructions.

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 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%

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 and 6 - Permanent Link Requirements at Specific Frequencies

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

Freq	ELFEXT		RL	
(MHz)	5e	6	5e	6
1.0	58.6	64.2	19.0	19.1
4.0	46.6	52.1	19.0	21.0
10.0	38.6	44.2	19.0	21.0
20.0	32.6	38.2	19.0	21.0
25.0	30.7	36.2	18.0	19.5
31.25	28.7	34.3	17.1	18.5
62.5	22.7	28.3	14.1	16.0
100.0	18.6	24.2	12.0	14.0
200.0	--	18.2	--	11.0
250.0	--	16.2	--	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 Newton 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.

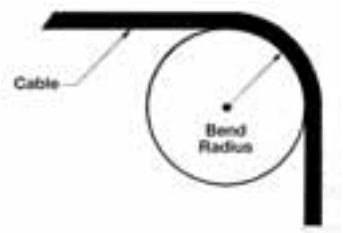


Figure 1: Bend Radius

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. 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.

Slide Guides

LAN 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 Gigabit Ethernet to emerging networking protocols, the applications are identified. Worst-case performance is stated at two frequencies for all categories of performance, from minimally compliant Category 5e to our Category 6A Giga*LAN 10*®.

Multimode Fiber Grade Selector

Short Wavelength or Long Wavelength, 50/125 micron or 62.5/125 micron, we have a solution for you. Mohawk has designed our Fiber Grade Selector to help you determine which multimode fiber type best suits your application. Legacy installations to emerging networking protocols are identified and the guaranteed performance of each fiber is given along with the appropriate optical specifications.

Plenum & Non-Plenum Conduit Fill Guide

This rotary style guide lets you determine the number of cables, from Category 3 to Augmented Category 6, that will fill a trade size conduit. Either plenum or non-plenum.

MAC Certification

MAC Warranty Program

MAC Warranty Program

Several years ago Mohawk developed a standards based BiCSi accredited training program. This program is geared primarily towards contractors, but is also offered to consultants and end-users. After successfully completing the training program the individual is eligible to receive 7 BiCSi credits.

There are two options available to become a Mohawk Accredited Contractor (MAC). First, you may elect to be trained by one of Mohawk's on staff RCDD instructors. This would enable you to be eligible to receive the 7 BiCSi credits. Second, you may choose to be grandfathered into the MAC program by having successfully completed an approved training program offered by one of our connectivity partners.

The major benefit of being a MAC is to enable the contractor to offer an extended warranty to the end-user on Mohawk products.

The Mohawk Channel/MATE® Cabling System Warranty period offered by a MAC is 25 years. It encompasses Mohawk's copper products from Category 5e through Augmented Category 6, including high pair count cables, copper backbone, and all fiber optic cables.

Additional benefits of being a MAC contractor include the backing of Mohawk's comprehensive technical support group for product information, installation troubleshooting and industry updates on the latest standards and applications guidelines. MAC contractors may also be eligible for a product rebate based on their qualified purchases, all backed by the strength of Belden's financial and managerial resources.

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 designation has been implemented to assist installers with cable identification. A serial number is printed every two feet on all 4 pair cables (excluding OSP cables) at final packaging. This allows for easy identification of reels, saving installers the time of labeling each run. For multiple runs off the same spool, only the addition of a single-character identifier is required, saving time wasted on a lengthy identification scheme.

Shipping & Packaging Guide

Cat 5e 5e LAN® • 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®

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 12⅞”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 12⅞”H)	27	42” X 42”

Augmented Cat 6 • Giga*LAN 10*®

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 Non-Plenum

25 pair	Gross Weight
20” Reel 1000 ft	123 lbs
24” Reel 2000 ft	246 lbs
36” Reel 5000 ft	620 lbs
36” Reel 6500 ft	805 lbs
—	—

50 pair	Gross Weight
22” Reel 1000 ft	224 lbs
30” Reel 2000 ft	455 lbs
48” Reel 5000 ft	1,160 lbs
—	—
—	—

100 pair	Gross Weight
30” Reel 1000 ft	467 lbs
36” Reel 2000 ft	950 lbs
42” Reel 2500 ft	1,167 lbs
48” Reel 4000 ft	1,910 lbs
54” Reel 5000 ft	2,400 lbs

Cat 3 Plenum

200 pair	Gross Weight
42” Reel 1000 ft	814 lbs
54” Reel 2000 ft	1,680 lbs
72” Reel 5000 ft	4,300 lbs
—	—

300 pair	Gross Weight
48” Reel 1000 ft	1,897 lbs
54” Reel 2000 ft	2,800 lbs
60” Reel 3000 ft	4,200 lbs
72” Reel 4000 ft	5,600 lbs

400 pair	Gross Weight
54” Reel 1000 ft	1,900 lbs
72” Reel 2000 ft	3,900 lbs
—	—
—	—

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

Mohawk's comprehensive line of cables includes:

UTP Cables

- Giga*LAN 10*® Augmented Category 6
- GigaLAN® Category 6E
- AdvanceNet® Category 6e
- 6 LAN™ Category 6
- MegaLAN® Category 5E
- 5e LAN® Category 5e
- Category 5
- Category 3

F/UTP Cables

- Category 6
- MegaLAN® Category 5E
- 5e LAN® Category 5e
- Category 5
- Category 3

UTP & F/UTP Cables

- High Pair Count
- Advance Link® Category 6e Patch
- MegaLink™ Category 5E Patch
- 5e LAN® Category 5e Patch
- DSL-Link™

Special Application Cables

- Outside Plant
- VersaLAN™ CM Indoor/Outdoor
- Cellular Tower
- Omni Guard® Industrial Ethernet
- Media Pull Bundled Copper
- Media Pull Bundled Fiber & Copper
- MarineGUARD™

Fiber Optic Cables

- Distribution
- Ribbon
- Breakout
- Outdoor Loose Tube
- Indoor/Outdoor Loose Tube
- Indoor/Outdoor Plenum
- Central Tube
- ArmorLite
- Simplex & Duplex
- Tactical
- Connectors
- Plug & Play Assemblies

Broadcast Cables and Assemblies

Vertical Markets Served:

- Education (Primary and Secondary)
- Financial
- Health Care
- Commercial Real Estate
- Industrial
- Broadcast
- Government
- Data Centers
- Security

Mohawk, a division of Belden, is headquartered in Leominster, Massachusetts, and has been providing fiber and copper cable innovations for more than 50 years. This facility dedicates 210,000 square feet to the industry's most advanced design, development and production of copper, fiber optic, and hybrid wire and cable. As an ISO 9001 certified company, Mohawk develops products to meet and support TIA/EIA, ISO/IEC, ICEA and NEMA standards. As part of the global Belden operations, Mohawk is supported with worldwide management, financial resources, and distribution capabilities.

MOHAWK
Cabling Excellence for Open Architecture

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