



# AdvanceNet™

## 4 Pair #23 AWG UTP Category 6e Cable

### DESCRIPTION

ENHANCED UNSHIELDED TWISTED PAIR (UTP) ADVANCENET CABLE FOR USE IN HORIZONTAL CABLING SYSTEMS PER TIA/EIA 568-B AND ISO/IEC 11801 CLASS E. THE CABLE EXCEEDS TIA/EIA 568-B.2-1 AND ISO/IEC 11801 CATEGORY 6 ELECTRICAL CHARACTERISTICS. THE CABLE CONSISTS OF #23 AWG SOLID BARE COPPER INSULATED CONDUCTORS, ASSEMBLED INTO FOUR TIGHTLY TWISTED PAIRS, WITH A FLEXWEB CORE SEPARATOR, WITH A RIPCORD, UNDER AN OVERALL JACKET. PRINT INCLUDES DESCENDING FOOTAGE MARKERS FROM 1000 TO 0 ON EACH 1000 FT REEL OR BOX. THIS PRODUCT AND/OR ITS MANUFACTURE IS COVERED BY US PATENT NOS. 6596944, 6074503, 5424491 & 5563377 (PL).

THE PLENUM RATED CABLE IS FOR USE IN AIR HANDLING DUCTS AND SPACES IN ACCORDANCE WITH ARTICLE 800 OF THE NATIONAL ELECTRICAL CODE (NEC). THE CABLE IS UL (USA) & cUL (CANADA) LISTED FOR THIS APPLICATION BY PASSING NFPA 262 (UL 910 OR FT-STEINER TUNNEL) TEST.

THE RISER NON-PLENUM RATED CABLE IS FOR USE AS A VERTICAL RUN IN A SHAFT AND FOR GENERAL PURPOSE COMMUNICATIONS USE IN ACCORDANCE WITH ARTICLE 800 OF THE NEC. THE CABLE IS UL (USA) & cUL (CANADA) LISTED FOR THIS APPLICATION BY PASSING UL 1666 RISER CABLE FLAMMABILITY TEST. THE CABLE ALSO PASSES THE CSA FT4 VERTICAL FLAME TEST - CABLES IN CABLE TROUGH FROM CLAUSE 4.11.4 OF CSA C22.2 NO. 0.3.

THIS CABLE COMPLIES WITH THE EU-RoHS DIRECTIVE 2002/95/EC (RESTRICTIONS ON HAZARDOUS SUBSTANCES) REGULATIONS.

### SUPPORTED APPLICATIONS

IEEE 802.3 10BASE-T (ETHERNET), 100BASE-T (FAST ETHERNET), AND 1000BASE-T (GIGABIT ETHERNET), IEEE 802.3af POWER OVER ETHERNET FOR VoIP, ANSI X3.263 FDDI TP-PMD, IEEE 802.5 4 AND 16 Mbps TOKEN RING, ATM UP TO 155 Mbps, 550 MHz BROADBAND VIDEO AND STANDARDS UNDER DEVELOPMENT SUCH AS ATM AT 622 Mbps, and 1.2 & 2.4 Gbps.

### INDUSTRY APPROVALS

**STANDARDS:** EXCEEDS TIA/EIA 568-B.2-1 CAT 6 & ISO/IEC 11801:2002 CAT 6 HORIZONTAL CABLE

**LISTINGS:** PL: UL/cUL TYPE CMP  
NP: UL/cUL TYPE CMR

**PERFORMANCE:** ETL VERIFIED TO TIA/EIA 568-B.2-1 CAT 6

### CONSTRUCTION

**PRIMARIES:** CONDUCTOR: 23 AWG (.6 mm) SOLID BARE COPPER

PL: DUAL INSULATION, FEP ON ALL 4 PAIRS  
NP: THERMOPLASTIC POLYOLEFIN

**PAIR ASSEMBLY:** 2 PRIMARIES TWISTED IN VARIED LAYS

**COLOR CODE:** SEE TABLE 1

**CABLE ASSEMBLY:** 4 PAIRS CABLED TOGETHER WITH A FLEXWEB CORE SEPARATOR

**JACKET:** PL: NO LEAD PLENUM RATED THERMOPLASTIC  
NP: NO LEAD FLAME RETARDANT THERMOPLASTIC

JACKET COLOR: SEE TABLE 2

NOMINAL CABLE OD: PL: .228" (5.79 mm)  
NP: .225" (5.7 mm)

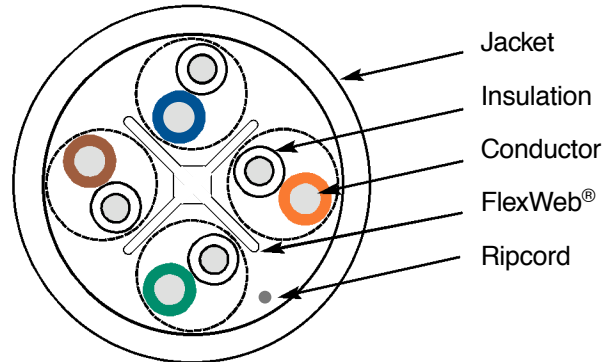


TABLE 1

PAIR NUMBER	PAIR COLOR CODE	
1	WHITE-BLUE	BLUE
2	WHITE-ORANGE	ORANGE
3	WHITE-GREEN	GREEN
4	WHITE-BROWN	BROWN

TABLE 2

PLENUM		NON-PLENUM	
PART NUMBER	JACKET COLOR	PART NUMBER	JACKET COLOR
M56905	WHITE	M56889	WHITE
M57193	BLUE	M57202	BLUE
M57194	PINK	M57203	PINK
M57195	YELLOW	M57204	YELLOW
M57196	GRAY	M57205	GRAY
M57197	GREEN	M57206	GREEN
M57198	RED	M57207	RED
M57199	ORANGE	M57208	ORANGE
M57200	BLACK	M57209	BLACK
M57201	VIOLET	M57210	VIOLET

### PHYSICAL CHARACTERISTICS

**CABLE WEIGHT:** PL: 33 lbs/1000ft (49 kg/km)  
NP: 30 lbs/1000ft (45 kg/km)

**BENDING RADIUS:** PL: 1" (25 mm) MIN (4 x CABLE OD)

**PULLING TENSION:** 25 lbf (110 N) MAX

**OPERATING TEMP.:** -20°C to +60°C (-4°F to +140°F)

**STORAGE TEMP.:** -20°C to +75°C (-4°F to +167°F)

**INSTALLATION TEMP\*:** 0°C to +60°C (+32°F to +140°F)

\*THE INSTALLATION TEMPERATURE REFERS TO THE TEMPERATURE OF THE CABLE WHILE BEING INSTALLED OR PULLED. DO NOT INSTALL CABLE BELOW 0°C (+32°F).

PL = PLENUM  
NP = NON-PLENUM

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### ELECTRICAL CHARACTERISTICS (REF TABLE 3)

<b>CONDUCTOR DCR:</b>	7.8 Ω/100m (23.8 Ω/Mft) MAX
<b>DCR UNBALANCE:</b>	3% MAX
<b>MUTUAL CAPACITANCE:</b>	46 pF/m (14 pF/ft) NOM
<b>CAPACITANCE UNBALANCE PAIR/GROUND:</b>	66 pF/100m (200 pF/Mft) MAX
<b>CHARACTERISTIC IMPEDANCE:</b>	100 Ω ± 15% (1-350 MHz)
<b>INPUT IMPEDANCE:</b>	100 Ω ± 15% (1-100 MHz) 100 Ω ± 18% (>100-200 MHz) 100 Ω ± 22% (>200-350 MHz)
<b>RETURN LOSS (RL):</b>	20 + 7 log <sub>10</sub> (f) dB MIN (1-10 MHz) 27 dB MIN (>10-20 MHz) 27 - 5.58 log <sub>10</sub> (f/20) dB MIN (>20 MHz)

<b>INSERTION LOSS: (ATTENUATION)</b>	1.795 f + .017 f + $\frac{.20}{f}$ dB/100m MAX
<b>NEAR END CROSSTALK (NEXT):</b>	48.3 - 15 log <sub>10</sub> (f/100) dB/100m MIN
<b>POWER SUM NEAR END CROSSTALK (PS-NEXT):</b>	46.3 - 15 log <sub>10</sub> (f/100) dB/100m MIN
<b>EQUAL LEVEL FAR END CROSSTALK (ELFEXT):</b>	30 - 20 log <sub>10</sub> (f/100) dB/100m MIN
<b>POWER SUM EQUAL LEVEL FAR END CROSSTALK (PS-ELFEXT):</b>	28 - 20 log <sub>10</sub> (f/100) dB/100m MIN
<b>PROPAGATION DELAY:</b>	534 + 36 / f ns/100m MAX
<b>DELTA DELAY (SKEW):</b>	25 ns/100m MAX
<b>NOMINAL VELOCITY OF PROPAGATION (NVP):</b>	72% PLENUM 68% NON-PLENUM

WHERE f = FREQUENCY IN MHz from .772 to 350 MHz, except for ELFEXT and PS-ELFEXT from 1 to 350 MHz.

TABLE 3

### REFERENCE ELECTRICAL CHARACTERISTICS

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 reserves the right to change specification in the interest of product enhancement.