

1. SCOPE

UL444, ANSI/TIA-568-C.2 and ISO/IEC 11801 and covers the requirements for unshielded twisted pair (U/UTP) cables of 100Ω, enhanced category 5E (Cat.5E).

Applicable cable size & type:
4 Pairs, PVC sheath (CMR)
UV resistant (CMX)
Indoor-Outdoor

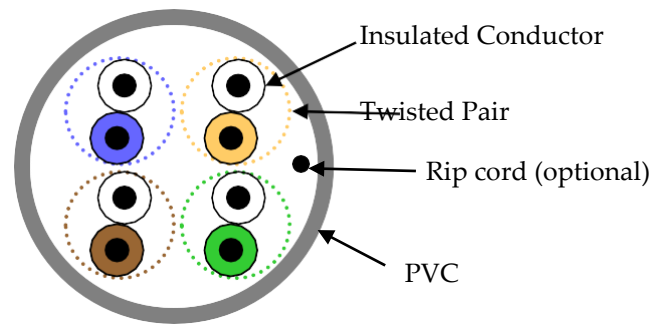


Fig 1. Cross-Sectional Diagram of Cable

2. CABLE CONSTRUCTION

2.1 Conductor

The conductors shall be 24 AWG solid, annealed and bare copper

2.2 Insulation

Each conductor shall be insulated with solid high density polyethylene.
The insulation shall be uniform and shall not have any defects.
The diameter over the insulation shall be maximum 1.22mm.

2.3 Color code

Pair No	A - wire		B - wire	
	Base	Stripe	Base	Stripe
1	White	Blue	Blue	-
2	White	Orange	Orange	-
3	White	Green	Green	-
4	White	Brown	Brown	-

*Note: The Stripe Marking shall be applied on the white color

2.4 Core Assembly

Two insulated conductors shall be twisted into a pair.
Four twisted pairs shall be assembled into a cable core.

2.5 Sheath

The flame retardant PVC compound colored grey or other colors shall be applied over the cable core. The sheath shall be uniform and shall not have any defects.

Type	Thickness (mm)	OD (mm)
CMR	0.45 ± 0.05	4.9 ± 0.2

Part # Legend: (Example: Blue, 1000', Pull Box = **WB5ERBL1BX**) * Non-Stock, Requires Factory Minimum Run

WB	5E	R	XX	X or XX	XX
WB	Cbl. Type	Rating	Color	Length	Put Up

Rating Legend	
Riser	R

Color Legend	
White	WH
Blue	BL
Yellow	YL

Length Legend	
1000	1

Put Up Legend	
Pull Box	BX

The drawing appearing on this page may be subject to change or modification without any prior notice -

3. ELECTRICAL CHARACTERISTICS_

3.1 Electrical Performance

Characteristics	units	Cat.5e
DC Resistance	Ω/100m	≤ 9.38
DC Resistance Unbalance	%	≤ 5.00
Mutual Capacitance	nF/100m	≤ 5.60
Capacitance Unbalance (Pair to Ground)	pF/100m	≤ 330
Insulation Resistance	MΩ ·100m	≥ 500
Dielectric Strength	DC kV/sec	2.5 / 2
Impedance (Characteristic mean)	Ω	100 ± 15% (1 ≤ f ≤ 100MHz)
Return Loss	dB/100m	$\geq 20 + 5 \cdot \log(\text{freq}) \quad 1 \leq f < 10\text{MHz}$ $\geq 25 \quad 10 \leq f < 20\text{MHz}$ $\geq 25 - 7 \cdot \log(\text{freq}/20) \quad 20 \leq f \leq 100\text{MHz}$
Attenuation (Insertion Loss)	dB/100m	$\leq 1.967 \cdot \sqrt{(\text{freq})} + 0.023 \cdot (\text{freq}) + 0.05 / \sqrt{(\text{freq})}$ 1 ~ 100 MHz
NEXT Loss	dB/100m	$\geq 35.3 - 15 \cdot \log(\text{freq}/100)$, 1 < f ≤ 100MHz
Power sum NEXT Loss	dB/100m	$\geq 32.3 - 15 \cdot \log(\text{freq}/100)$, 1 < f ≤ 100MHz
ELFEXT Loss	dB/100m	$\geq 23.8 - 20 \cdot \log(\text{freq}/100)$, 1 ~ 100MHz
Power sum ELFEXT Loss	dB/100m	$\geq 20.8 - 20 \cdot \log(\text{freq}/100)$, 1 ~ 100MHz
Propagation Delay	ns/100m	$\leq 534 + 36 / \sqrt{(\text{Freq})}$, 1 ~ 100MHz
Propagation Delay Skew	ns/100m	≤ 45

Freq (MHz)	Attenuation (dB/100m)) Max.	NEXT (dB/100m)) Min.	PSNEXT (dB/100m)) Min.	ELFEXT (dB/100m)) Min.	PSELFEXT (dB/100m)) Min.	RL (dB/100m)) Min.	P.Delay (ns/100m)) Max.
1	2.0	65.3	62.3	63.8	60.8	20.0	570
4	4.1	56.3	53.3	51.8	48.8	23.0	552
8	5.8	51.8	48.8	45.7	42.7	24.5	547
10	6.5	50.3	47.3	43.8	40.8	25.0	545
16	8.2	47.2	44.2	39.7	36.7	25.0	543
20	9.3	45.8	42.8	37.8	34.8	25.0	542
25	10.4	44.3	41.3	35.8	32.8	24.3	541
31.25	11.7	42.9	39.9	33.9	30.9	23.6	540
62.5	17.0	38.4	35.4	27.9	24.9	21.5	539
100	22.0	35.3	32.3	23.8	20.8	20.1	538