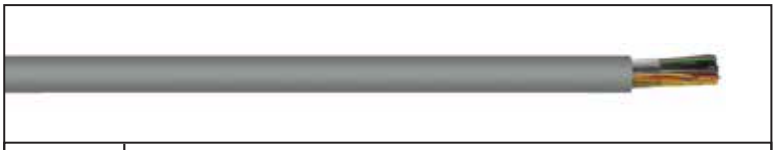
INDOOR TELEPHONE CABLES UNSHIELDED CATEGORY-3

Specifations: UL-444, EIA/TIA 568 B



TYPE CM (UL) MESC 2014

Application : Used for voice, data and local area network application up to 16 MHz.

Construction

- Conductor : Soild Annealed Bare Copper Conductor.
- Insulation : Extruded Soild polyethlene.
- Assembly : Pairs twisted with staggered lay technique. Color coding is according to ANSI/ICEA S-80-576. Twisted pairs are bundled into units of 25 pairs (subunits comprise 12/13 pairs) and cabled and covered with a polyester tape binder.
- Screen :
- Jacket : Grey Coloured flame retardant PVC.
- Printing legend : TYPE CM CAT3 UTP xx PR xx AWG MESC YEAR

Sl No.	Technical Parameter			Unit	Requirement	
1	Conductor Resistance			Ohm/100m at 20°C	93.8(24AWG) 57.1(22AWG)	(Max) (Max)
2	Resistance unbalance			%	5	(Max)
3	Mutual Capacitance(@1kHz)			pF/m	66.0	(Max)
4	Characteristic Impedance(Up to MHz)			Ohm	100+/-15	(Nom)
5	Attenuation			dB/100m		
a)	At frequency of	1	MHz		2.6	(Max)
b)	At frequency of	4	MHz		5.6	(Max)
c)	At frequency of	8	MHz		8.5	(Max)
d)	At frequency of	10	MHz		9.7	(Max)
e)	At frequency of	16	MHz		13.1	(Max)
6	Near end Cross Talk			dB/305m		
a)	At frequency of	1	MHz		41	(Min)
b)	At frequency of	4	MHz		32	(Min)
c)	At frequency of	8	MHz		27	(Min)
d)	At frequency of	10	MHz		26	(Min)
e)	At frequency of	16	MHz		23	(Min)

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INDOOR TELEPHONE CABLES UNSHIELDED CATEGORY-3

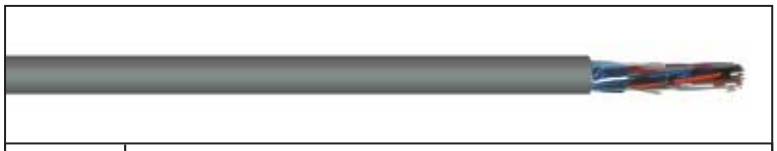
Size AWG	MESC Code	Pairs Nos.	Strands x Dia. No. x mm	Nominal Jacket Thickness mm	Approx. O. D. mm	Approx. Weight Kg/Km
24	M762-02P24AWG-U0GY8-00	2	1X0.5	0.33	4.3	20
24	M762-03P24AWG-U0GY8-00	3	1X0.5	0.58	4.9	30
24	M762-04P24AWG-U0GY8-00	4	1X0.5	0.58	5.2	36
24	M762-06P24AWG-U0GY8-00	6	1X0.5	0.58	6.2	50
24	M762-12P24AWG-U0GY8-00	12	1X0.5	0.58	8.1	90
24	M762-18P24AWG-U0GY8-00	18	1X0.5	0.58	9.5	125
24	M762-25P24AWG-U0GY8-00	25	1X0.5	0.69	11.0	165
24	M762-50P24AWG-U0GY8-00	50	1X0.5	0.81	15.1	315
24	M762-75P24AWG-U0GY8-00	75	1X0.5	0.81	18.0	445
24	M762-100P24AWG-U0GY8-00	100	1X0.5	1.14	21.1	615
24	M762-150P24AWG-U0GY8-00	150	1X0.5	1.14	25.2	875
24	M762-200P24AWG-U0GY8-00	200	1X0.5	1.14	28.7	1135
22	M762-02P22AWG-U0GY8-00	2	1X0.64	0.58	5.3	35
22	M762-03P22AWG-U0GY8-00	3	1X0.64	0.58	5.5	40
22	M762-04P22AWG-U0GY8-00	4	1X0.64	0.58	6.1	48
22	M762-06P22AWG-U0GY8-00	6	1X0.64	0.58	7.0	70
22	M762-12P22AWG-U0GY8-00	12	1X0.64	0.58	9.1	125
22	M762-18P22AWG-U0GY8-00	18	1X0.64	0.69	11.1	185
22	M762-25P22AWG-U0GY8-00	25	1X0.64	0.81	12.7	250
22	M762-50P22AWG-U0GY8-00	50	1X0.64	0.81	17.1	460
22	M762-75P22AWG-U0GY8-00	75	1X0.64	1.14	21.2	700
22	M762-100P22AWG-U0GY8-00	100	1X0.64	1.14	24.0	905
22	M762-150P22AWG-U0GY8-00	150	1X0.64	1.14	28.7	1310
22	M762-200P22AWG-U0GY8-00	200	1X0.64	1.14	32.7	1710

COLOUR CODE

Pairs	a WIRE		b WIRE	
	Color of Insulation	Color of the Band	Color of Insulation	Color of the Band
1	White	Blue	Blue	White
2	White	Orange	Orange	White
3	White	Green	Green	White
4	White	Brown	Brown	White
5	White	Grey	Grey	White
6	Red	Blue	Blue	Red
7	Red	Orange	Orange	Red
8	Red	Green	Green	Red
9	Red	Brown	Brown	Red
10	Red	Grey	Grey	Red
11	Black	Blue	Blue	Black
12	Black	Orange	Orange	Black
13	Black	Green	Green	Black
14	Black	Brown	Brown	Black
15	Black	Grey	Grey	Black
16	Yellow	Blue	Blue	Yellow
17	Yellow	Orange	Orange	Yellow
18	Yellow	Green	Green	Yellow
19	Yellow	Brown	Brown	Yellow
20	Yellow	Grey	Grey	Yellow
21	Violet	Blue	Blue	Violet
22	Violet	Orange	Orange	Violet
23	Violet	Green	Green	Violet
24	Violet	Brown	Brown	Violet
25	Violet	Grey	Grey	Violet

INDOOR TELEPHONE CABLES SHIELDED CATEGORY-3

Specifations: UL- 444, EIA/TIA 568 B



TYPE CM (UL) MESC 2014

Application : Used for voice, data and local area network application up to 16 MHz.

Construction

- Conductor : Soild Annealed Bare Copper Conductor.
- Insulation : Extruded Soild polyethlene.
- Assembly : Pairs twisted with staggered lay technique. Color coding is according to ANSI/ICEA S-80-576. Twisted pairs are bundled into units of 25 pairs (subunits comprise 12/13 pairs) and cabled and covered with a polyester tape binder. An aluminum Mylar tape is appleid with an overlap for 100% coverage with a tinned copper drain wire.
- Jacket : Grey Coloured flame retardant PVC.
- Printing legend : TYPE CM SHIELDED CAT3 UTP xx PR xx AWG MESC YEAR

Sl No.	Technical Parameter			Unit	Requirement	
1	Conductor Resistance			Ohm/100m at 20° C	93.8(24AWG) 57.1(22AWG)	(Max) (Max)
2	Resistance unbalance			%	5	(Max)
3	Mutual Capacitance (@1KHz)			pF/m	66.0	(Max)
4	Characteristic Impedance (Up to MHz)			Ohm	100 ± 15	(Nom)
5	Attenuation			dB/100m		
a)	At frequency of	1	MHz		2.6	(Max)
b)	At frequency of	4	MHz		5.6	(Max)
c)	At frequency of	8	MHz		8.5	(Max)
d)	At frequency of	10	MHz		9.7	(Max)
e)	At frequency of	16	MHz		13.1	(Max)
6	Near end Cross Talk			dB/305m		
a)	At frequency of	1	MHz		41	(Min)
b)	At frequency of	4	MHz		32	(Min)
c)	At frequency of	8	MHz		27	(Min)
d)	At frequency of	10	MHz		26	(Min)
e)	At frequency of	16	MHz		23	(Min)

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INDOOR TELEPHONE CABLES SHIELDED CATEGORY-3

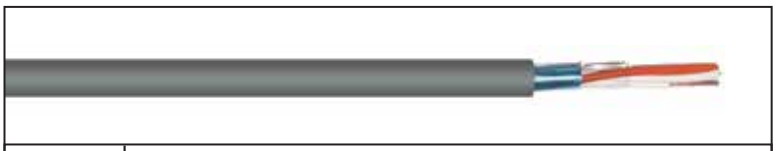
Size AWG	MESC Code	Pairs Nos.	Strands x Dia. No. x mm	Nominal Jacket Thickness mm	Approx. O. D. mm	Approx. Weight Kg/Km
24	M862-02P24AWG-U0GY8-00	2	1X0.5	0.33	4.9	30
24	M862-03P24AWG-U0GY8-00	3	1X0.5	0.58	5.1	35
24	M862-04P24AWG-U0GY8-00	4	1X0.5	0.58	5.5	42
24	M862-06P24AWG-U0GY8-00	6	1X0.5	0.58	6.4	55
24	M862-12P24AWG-U0GY8-00	12	1X0.5	0.58	8.4	95
24	M862-18P24AWG-U0GY8-00	18	1X0.5	0.58	9.9	130
24	M862-25P24AWG-U0GY8-00	25	1X0.5	0.69	11.7	185
24	M862-50P24AWG-U0GY8-00	50	1X0.5	0.81	15.6	325
24	M862-75P24AWG-U0GY8-00	75	1X0.5	0.81	18.7	465
24	M862-100P24AWG-U0GY8-00	100	1X0.5	1.14	21.9	640
24	M862-150P24AWG-U0GY8-00	150	1X0.5	1.14	26.2	910
24	M862-200P24AWG-U0GY8-00	200	1X0.5	1.14	29.8	1180
22	M862-02P22AWG-U0GY8-00	2	1X0.64	0.58	5.7	40
22	M862-03P22AWG-U0GY8-00	3	1X0.64	0.58	5.9	50
22	M862-04P22AWG-U0GY8-00	4	1X0.64	0.58	6.4	56
22	M862-06P22AWG-U0GY8-00	6	1X0.64	0.58	7.5	75
22	M862-12P22AWG-U0GY8-00	12	1X0.64	0.58	9.8	140
22	M862-18P22AWG-U0GY8-00	18	1X0.64	0.69	12.2	210
22	M862-25P22AWG-U0GY8-00	25	1X0.64	0.81	13.7	270
22	M862-50P22AWG-U0GY8-00	50	1X0.64	0.81	18.5	495
22	M862-75P22AWG-U0GY8-00	75	1X0.64	1.14	22.8	750
22	M862-100P22AWG-U0GY8-00	100	1X0.64	1.14	25.9	965
22	M862-150P22AWG-U0GY8-00	150	1X0.64	1.14	31.1	1395
22	M862-200P22AWG-U0GY8-00	200	1X0.64	1.14	35.4	1815

COLOUR CODE

Pairs	a WIRE		b WIRE	
	Color of Insulation	Color of the Band	Color of Insulation	Color of the Band
1	White	Blue	Blue	White
2	White	Orange	Orange	White
3	White	Green	Green	White
4	White	Brown	Brown	White
5	White	Grey	Grey	White
6	Red	Blue	Blue	Red
7	Red	Orange	Orange	Red
8	Red	Green	Green	Red
9	Red	Brown	Brown	Red
10	Red	Grey	Grey	Red
11	Black	Blue	Blue	Black
12	Black	Orange	Orange	Black
13	Black	Green	Green	Black
14	Black	Brown	Brown	Black
15	Black	Grey	Grey	Black
16	Yellow	Blue	Blue	Yellow
17	Yellow	Orange	Orange	Yellow
18	Yellow	Green	Green	Yellow
19	Yellow	Brown	Brown	Yellow
20	Yellow	Grey	Grey	Yellow
21	Violet	Blue	Blue	Violet
22	Violet	Orange	Orange	Violet
23	Violet	Green	Green	Violet
24	Violet	Brown	Brown	Violet
25	Violet	Grey	Grey	Violet

LOW CAPACITANCE TELEPHONE / DATA CABLES NEC TYPE CM (UL 444)

Specifations: UL- 444, EIA/TIA 568 B



TYPE CM(UL) MESC 2014

Application : Can be used as a service and installation cable in data transmission applicatios, computer, telephone etc.

Construction

- Conductor : Solid Annealed Bare Copper Conductor.
- Insulation : Polyethylene core insulation.
- Assembly : Pairs twisted with staggered lay technique. Color coding is as per table 1. Twisted pairs are bundled into units of 25 pairs (subunits comprise 12/13 pairs) and cabled and covered with a polyester tape binder.
- Shield : The assebly is shielded with Aluminum backed mylar tape with a tinned copper drain wire in contact with the aluminum part of the shield.
- Jacket : Grey Coloured flame retardant PVC.

Technical Data

1. Conductor Dia (mm) (AWG)	0.4 26	0.5 24	0.64 22	0.9 19
2. Conductor resistance at 20° C (Ω/Km)	144.4	90.2	57.1	28.5
3. Average Mutual Capacitance at 1 KHz(nf/Km)	52			
4. Nom. attenuation at 150 KHz(dB/Km)	11.4	8.30	6.2	4.40
5. Impedance (Ω)	100 ± 15			
6. Min. Insulation resistance (MΩ/Km)	5000			
7. Dielectric Strength (KV / 2 Sec.)	2500			
8. Operating Temperature.	-20°C to + 80°C			

* These cables meet the performance requirement of CAT3 cables as per EIA/TIA 568-A. However the color code of the insulation slightly differs from that of EIA/TIA 568-A.

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LOW CAPACITANCE TELEPHONE / DATA CABLES
NEC TYPE CM (UL 444)

Size AWG	Order No.	MESC Code	Pairs Nos.	Strands x Dia. No. x mm	Jacket Thickness mm	Approx. O. D. mm	Approx. Weight Kg/Km
26	32135	3262-06P00040-U0GY8-00	6	1x0.4	0.58	5.3	35
	32136	3262-12P00040-U0GY8-00	12	1x0.4	0.58	7.0	60
	32137	3262-18P00040-U0GY8-00	18	1x0.4	0.58	8.2	80
	32138	3262-25P00040-U0GY8-00	25	1x0.4	0.58	9.5	110
	32139	3262-50P00040-U0GY8-00	50	1x0.4	0.81	13.4	210
	32140	3262-75P00040-U0GY8-00	75	1x0.4	0.81	16.0	295
	32141	3262-100P0040-U0GY8-00	100	1x0.4	0.81	18.2	385
	32142	3262-150P0040-U0GY8-00	150	1x0.4	1.14	22.6	585
	32143	3262-200P0040-U0GY8-00	200	1x0.4	1.14	25.7	755
24	32144	3262-06P00050-U0GY8-00	6	1x0.5	0.58	6.0	50
	32145	3262-12P00050-U0GY8-00	12	1x0.5	0.58	7.9	85
	32146	3262-18P00050-U0GY8-00	18	1x0.5	0.58	9.4	115
	32147	3262-25P00050-U0GY8-00	25	1x0.5	0.69	11.1	160
	32148	3262-50P00050-U0GY8-00	50	1x0.5	0.81	15.4	295
	32149	3262-75P00050-U0GY8-00	75	1x0.5	0.81	18.4	420
	32150	3262-100P0050-U0GY8-00	100	1x0.5	1.14	21.7	580
	32151	3262-150P0050-U0GY8-00	150	1x0.5	1.14	26.0	835
	32152	3262-200P0050-U0GY8-00	200	1x0.5	1.14	29.7	1080
22	32153	3262-06P00064-U0GY8-00	6	1x0.64	0.58	7.4	75
	32154	3262-12P00064-U0GY8-00	12	1x0.64	0.69	10.1	130
	32155	3262-18P00064-U0GY8-00	18	1x0.64	0.81	12.3	190
	32156	3262-25P00064-U0GY8-00	25	1x0.64	0.81	14.2	250
	32157	3262-50P00064-U0GY8-00	50	1x0.64	1.14	20.0	495
	32158	3262-75P00064-U0GY8-00	75	1x0.64	1.14	24.0	700
	32159	3262-100P0064-U0GY8-00	100	1x0.64	1.14	27.3	910
	32160	3262-150P0064-U0GY8-00	150	1x0.64	1.40	33.5	1355
	32161	3262-200P0064-U0GY8-00	200	1x0.64	1.40	38.2	1765
19	32162	3262-06P00090-U0GY8-00	6	1x0.91	0.58	9.5	125
	32163	3262-12P00090-U0GY8-00	12	1x0.91	0.81	13.4	240
	62164	3262-18P00090-U0GY8-00	18	1x0.91	0.81	16.0	340
	32165	3262-25P00090-U0GY8-00	25	1x0.91	0.81	18.5	450
	32166	3262-50P00090-U0GY8-00	50	1x0.91	1.14	26.1	890
	32167	3262-75P00090-U0GY8-00	75	1x0.91	1.14	31.4	1285
	32168	3262-100P0090-U0GY8-00	100	1x0.91	1.52	36.7	1745

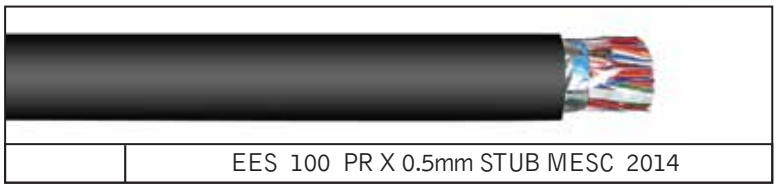
COLOUR CODE

TABLE 1

No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire
1	White	Blue	9	Red	Brown	17	Yellow	Orange
2	White	Orange	10	Red	Grey	18	Yellow	Green
3	White	Green	11	Black	Blue	19	Yellow	Brown
4	White	Brown	12	Black	Orange	20	Yellow	Grey
5	White	Grey	13	Black	Green	21	Violet	Blue
6	Red	Blue	14	Black	Brown	22	Violet	Orange
7	Red	Orange	15	Black	Grey	23	Violet	Green
8	Red	Green	16	Yellow	Blue	24	Violet	Brown
						25	Violet	Grey

TELEPHONE CABLES
EES TYPE (WITHOUT MOISTURE BARRIER)

Specifications: STC, MAT 1011 Type: EES



EES 100 PR X 0.5mm STUB MESC 2014

Application : Stub Cable is generally used for connection to cabinet and distribution pillar terminal blocks

Construction

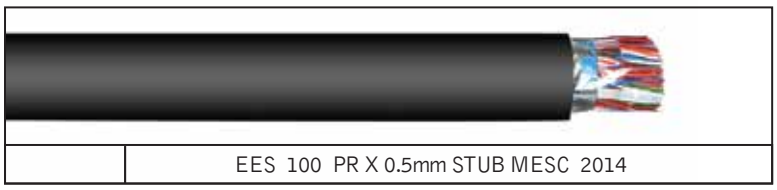
- **Conductor** : Solid annealed plain copper to ASTM B3.
- **Insulation** : Solid plyethylene to ASTM D1248, Type 3, Category 4 or 5, grade E8 or E9.
- **Conductor Identification** : Insulated conductors shall be fully colour coded in accordance with MAT 1011.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with staggered twist lengths of 30 to 200mm to minimize crosstalk. Ten pairs shall be assembled together to form a subunit and each subunit shall have a coloured binder. Subunits shall be assembled as detailed in MAT 1011 to form the cable core.
- **Core Wrapping** : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap.
- **Sheath** : The sheath shall be an extruded Black low density polyethylene or medium density polyethylene to ASTM D1248, Type 1 or 2, Class C, Category 4 or 5, grade J3.
- **Identification** : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- **Sheath Marking** : "The word "STUB" shall be durably marked on the sheath at longitudinal intervals of not more than 1 mtr. Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

DIMENSIONAL DETAILS

Size (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Cable Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.5	31001	3162-10P00050-U0BK8-00	10X2X0.5	9.7	87	1000	800
	31002	3162-20P00050-U0BK8-00	20X2X0.5	12.2	146	1000	900
	31003	3162-50P00050-U0BK8-00	50X2X0.5	17.2	311	1000	1100
	31004	3162-100P0050-U0BK8-00	100X2X0.5	23.3	594	1000	1250

TELEPHONE CABLES
EES TYPE (WITH MOISTURE BARRIER)

Specifications: STC, MAT 1011 Type: EES



EES 100 PR X 0.5mm STUB MESC 2014

Application : Stub Cable is generally used for connection to cabinet and distribution pillar terminal blocks

Construction

- Conductor : Solid annealed plain copper to ASTM B3.
- Insulation : Solid plyethylene to ASTM D1248, Type 3, Category 4 or 5, grade E8 or E9.
- Conductor Identification : Insulated conductors shall be fully colour coded in accordance with MAT 1011.
- Assembly : Two insulated conductors shall be uniformly twisted together to form a pair with staggered twist lengths of 30 to 200mm to minimize crosstalk. Ten pairs shall be assembled together to form a subunit and each subunit shall have a coloured binder. Su units shall be assembled to form units of 50 or 100 pairs depending on the cable size. Such units shall be assembled as detailed in MAT 1011 to form the cable core, alongwith the required spare pairs.
- Core Wrapping : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap.
- Moisture Barrier/Shield : An Aluminium tape (0.2mm) coated on both sides with a copolymer shall be applied longitudinally over the core wrap with an overlap of 6mm or 10% of the core circumference whichever is greater.
- Sheath : The sheath shall be an extruded Black low density polyethylene or medium density polyethylene to ASTM D1248, Type 1 or 2, Class C, Category 4 or 5, grade J3.
- Identification : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- Sheath Marking : "The word "STUB" shall be durably marked on the sheath at longitudinal intervals of not more than 1 mtr. Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

DIMENSIONAL DETAILS

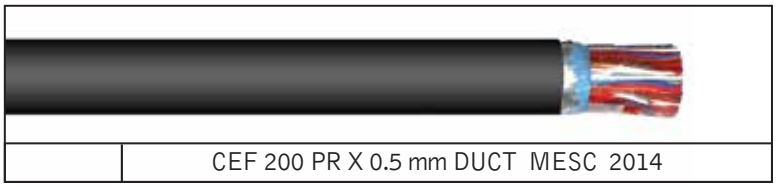
Size (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Cable Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.5	31005	3162-10P00050-UMBK8-00	10X2X0.5	11.1	113	1000	800
	31006	3162-20P00050-UMBK8-00	20X2X0.5	13.7	179	1000	1000
	31007	3162-50P00050-UMBK8-00	50X2X0.5	19.0	362	1000	1100
	31008	3162-100P0050-UMBK8-00	100X2X0.5	25.5	669	1000	1400
	31009	3162-200P0050-UMBK8-00	200X2X0.5	34.0	1234	1000	1600

TELEPHONE CABLES
EES TYPE
TRANSMISSION CHARACTERISTICS

Max. Conductor Resistance (20° C)	Ohms/Km Ohms/Km	Average Ind	92 96
Max. Resistance Unbalance	% %	Average Ind	0.75 2.5
Min. Insulation Resistance (20° C)	MOhm-Km		10000
Mutual Capacitance (1000+/-200Hz)	nF/Km nF/Km	Average Ind	44+/-2 50
Max. Capacitance Unbalance (1000+/-200Hz) Pair to Pair (within sub-unit)	pF/500m	Average	22
		Ind	150
Pair to Pair (between adjacent sub-units or units)	pF/500m	Average Ind	20 50
Pair to earth capacitance unbalance	pF/Km	Average Ind	500 2500
Dielectric Strength (Volts DC for 3 Sec. min.)		Cond-Cond Cond-Screen	2000 5000
Attenuation (max) Frequency 1 KHz 1 MHz	dB/Km		 1.45 22.6
Min. Near End Cross-talk (99% pair combination) Frequency 1 KHz 12 KHz 80 KHz 1000 KHz	dB/Km		 85 80 67 48
Min. NEXT & ELEFEXT Ind. Power Sums Frequency 1 KHz 12 KHz 80 KHz 1000 KHz	dB/Km		NEXT / ELEFEXT 70 / 74 67 / 71 55 / 58 37 / 36

TELEPHONE CABLES (DUCT)
FOAM/SKIN, FILLED
CEF

Specifications: STC MAT 1101 Type : CEF



CEF 200 PR X 0.5 mm DUCT MESC 2014

Application : Used for primary and secondary underground (Duct) distribution networks.

Construction

- **Conductor** : Solid annealed plain copper to ASTM B3.
- **Insulation** : Dual insulation of foam-skin polyethylene to ASTM D1248. Type 3, Category 4 or 5, grade E8 or E9.
- **Conductor Identification** : Insulated conductors shall be fully colour coded in accordance with MAT 1101.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with staggered twist lengths of 30 to 200mm to minimize crosstalk. Ten pairs shall be assembled together to form a subunit and each subunit shall have a colored binder. Subunits shall be assembled to form units of 50 or 100 pairs depending on the cable size. Such units shall be assembled as detailed in MAT 1101 to form the cable core, along with required spare pairs.
- **Core Filling** : The water resistant filling compound shall be applied to the air space within the cable core.
- **Core Wrapping** : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap.
- **Moisture Barrier/Shield** : An Aluminium tape (0.2mm) coated on both sides with a copolymer shall be applied longitudinally over the core wrap with an overlap of 6mm or 10% of the core circumference whichever is greater.
- **Sheath** : The sheath shall be an extruded Black low density polyethylene or medium density polyethylene to ASTM D1248, Type 1 or 2, Class C, Category 4 or 5.
- **Identification** : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- **Sheath Marking** : The word "DUCT" shall be durably marked on the sheath at longitudinal intervals of not more than 1 mtr. Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

TELEPHONE CABLES (DUCT)
FOAM/SKIN, FILLED
CEF

DIMENSIONAL DETAILS

Size (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Cable Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
	31010	3163-20J00040-UMBK8-00	20X2X0.4	11.7	177	1000	800
	31011	3163-50J00040-UMBK8-00	50X2X0.4	15.9	337	1000	1100
0.4	31012	3163-100J0040-UMBK8-00	100X2X0.4	20.5	611	1000	1250
	31013	3163-200J0040-UMBK8-00	200X2X0.4	27.5	1079	1000	1400
	31014	3163-10J00050-UMBK8-00	10X2X0.5	10.9	154	1000	800
	31015	3163-20J00050-UMBK8-00	20X2X0.5	13.5	239	1000	900
0.5	31016	3163-50J00050-UMBK8-00	50X2X0.5	18.6	482	1000	1100
	31017	3163-100J0050-UMBK8-00	100X2X0.5	24.9	891	1000	1400
	31018	3163-200J0050-UMBK8-00	200X2X0.5	33.1	1612	1000	1600
	31019	3163-20J00065-UMBK8-00	20X2X0.65	16.3	352	1000	1000
	31020	3163-50J00065-UMBK8-00	50X2X0.65	23.1	748	1000	1250
0.65	31021	3163-100J0065-UMBK8-00	100X2X0.65	31.3	841	600	1250
	31022	3163-200J0065-UMBK8-00	200X2X0.65	42.3	1588	600	1600
	31023	3163-20J00090-UMBK8-00	20X2X0.9	21.0	361	600	1100
	31024	3163-50J00090-UMBK8-00	50X2X0.9	31.0	813	600	1250
0.9	31025	3163-100J0090-UMBK8-00	100X2X0.9	41.9	1559	600	1600
	31026	3163-150J0090-UMBK8-00	150X2X0.9	50.3	2263	600	1800

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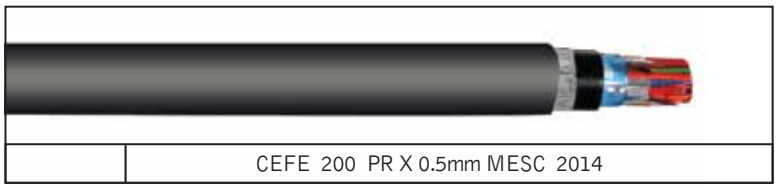
MESC

TELEPHONE CABLES (DIRECT BURIED)
FOAM/SKIN, FILLED
CEFE

Specifications: STC MAT 1101 Type : CEFE



	CEFE 200 PR X 0.5mm MESC 2014

Application : Used for primary and secondary underground (Direct Buried) distribution networks.

Construction

- **Conductor** : Solid annealed plain copper to ASTM B3.
- **Insulation** : Dual insulation of foam-skin polyethylene to ASTM D1248 Type 3, Category 4 or 5, grade E8 or E9.
- **Conductor Identification** : Insulated conductors shall be fully colour coded in accordance with MAT 1101.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with staggered twist lengths of 30 to 200mm to minimize crosstalk. Ten pairs shall be assembled together to form a subunit and each subunit shall have a colored binder. Subunits shall be assembled to form units of 50 or 100 pairs depending on the cable size. Such units shall be assembled as detailed in MAT 1101 to form the cable core, along with required spare pairs.
- **Core Filling** : The water resistant filling compound shall be applied to the air space within the cable core.
- **Core Wrapping** : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap.
- **Moisture Barrier/Shield** : An Aluminium tape (0.2mm) coated on both sides with a copolymer shall be applied longitudinally over the core wrap with an overlap of 6mm or 10% of the core circumference whichever is greater.
- **First (inner) Sheath** : The sheath shall be an extruded Black low density polyethylene or medium density polyethylene to ASTM D1248, Type 1 or 2, Class C, Category 4 or 5, grade J3.
- **Inter Sheath Water Blocking Material** : A swellable material shall be applied between the inner and outer sheath which shall prevent water ingress between the sheaths.
- **Second (Outer) Sheath** : The sheath shall be an extruded black low density polyethylene to ASTM D1248, Type 1 or 2, class Category 4 or 5, Grade J3.
- **Identification** : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- **Sheath Marking** : The telephone handset symbol shall be durably marked on the sheath at longitudinal intervals of not more than 1 mtr. Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

TELEPHONE CABLES (DIRECT BURIED)
FOAM/SKIN, FILLED
CEFE

DIMENSIONAL DETAILS

Size (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Cable Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.4	31028	3163-20J00040-UMBK8-0E	20X2X0.4	15.6	280	1000	1000
	31029	3163-50J00040-UMBK8-0E	50X2X0.4	19.8	472	1000	1100
	31030	3163-100J0040-UMBK8-0E	100X2X0.4	24.4	775	1000	1400
	31031	3163-200J0040-UMBK8-0E	200X2X0.4	31.5	1340	1000	1600
0.5	31032	3163-10J00050-UMBK8-0E	10X2X0.5	14.8	251	1000	1000
	31033	3163-20J00050-UMBK8-0E	20X2X0.5	17.4	366	1000	1100
	31034	3163-50J00050-UMBK8-0E	50X2X0.5	22.5	639	1000	1250
	31035	3163-100J0050-UMBK8-0E	100X2X0.5	28.8	1064	1000	1400
	31036	3163-200J0050-UMBK8-0E	200X2X0.5	37.0	1913	1000	1800
0.65	31037	3163-20J00065-UMBK8-0E	20X2X0.65	20.2	490	1000	1100
	31038	3163-50J00065-UMBK8-0E	50X2X0.65	27.0	929	1000	1400
	31039	3163-100J0065-UMBK8-0E	100X2X0.65	35.2	1059	600	1600
	31040	3163-200J0065-UMBK8-0E	200X2X0.65	46.2	1759	600	1600
0.9	31041	3163-20J00090-UMBK8-0E	20X2X0.9	24.9	470	600	1100
	31042	3163-50J00090-UMBK8-0E	50X2X0.9	34.9	961	600	1400
	31043	3163-100J0090-UMBK8-0E	100X2X0.9	45.8	1729	600	1600
	31044	3163-150J0090-UMBK8-0E	150X2X0.9	54.2	2465	600	1800

مسك
MESC

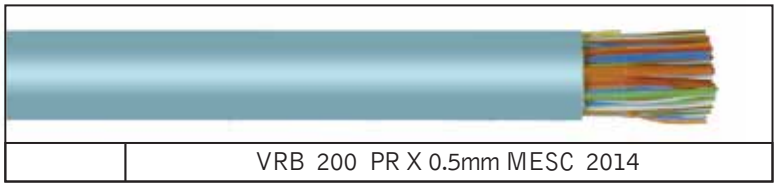
TELEPHONE CABLES (DUCT) & (DIRECT BURIED)
FOAM/SKIN, FILLED
CEF & CEFE

TRANSMISSION CHARACTERISTICS

Conductor Size	mm		0.4	0.5	0.65	0.9
Max. Conductor Resistance (20° C)	Ohms/Km Ohms/Km	Average Ind	144 150	92 96	54 57	28 30
Max. Resistance Unbalance	% %	Average Ind	1.0 2.5	0.75 2.5	0.75 2.0	0.75 2.0
Min. Insulation Resistance (20° C)	MOhm-Km		2500			
Mutual Capacitance (1000+/-200Hz)	nF/Km nF/Km	Average Ind	44+/-2 50			
Max. Capacitance Unbalance (1000+/-200Hz) Pair to pair (within sub-unit)	pF/500m	Average Ind	25 150			
Pair to Pair (between adjacent sub-units or units)	pF/500m	Average Ind	17 55			
Pair to Earth	pF/Km	Average Ind	500 2500			
Dielectric Strength (Volts DC for 3 Sec. mini.)		Cond-Cond Cond-Shld	2400 5000	2400 5000	3000 10000	3600 10000
Attenuation (max.) Frequency 1 KHz 1 MHz	dB/Km		1.81 25.7	1.45 21	1.1 16.3	0.8 13.6
Min. Near end Cross-talk (99% pair combination) Frequency 1 KHz 12 KHz 80 KHz 1000 KHz	dB/Km		85 80 67 48			
Min. NEXT & ELEFEXT Ind. Power Sums Frequency 1 KHz 12 KHz 80 KHz 1000 KHz	dB/Km		NEXT 70 67 55 37		ELEFEXT 74 71 58 36	

INDOOR CABLES
VRB

Specifications: STC MAT 1401 Type: VRB



VRB 200 PR X 0.5mm MESC 2014

Application : Used for indoors installation in the telecommunication network.

Construction

- **Conductor** : Solid annealed plain copper to ASTM B3.
- **Insulation** : Solid layer of PVC to BS : 6746, TYPE TI1
- **Conductor Identification** : Insulated conductors shall be fully colour coded in accordance with MAT 1401.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with a lay of 30 to 200mm. Ten pairs shall be assembled together to form a subunit and each subunit shall have a coloured binder. Upto 100 pair cables, subunits shall be assembled to form the cable core. For cables more than 100 pairs, subunits shall be assembled as 50 pair unit and such units shall form the cable core.
- **Core Wrapping** : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap of 5 mm min..
- **Sheath** : The sheath shall be an extruded GREY colour HOLOGEN FREE FLAME RETARDANT material. A rip cord of non-metallic, non-hygroscopic material shall be laid under the sheath, parallel to the cable core.
- **Identification** : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- **Sheath Marking** : Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

INDOOR CABLES
VRB

DIMENSIONAL DETAILS

Size (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Gross Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.5	31046	3161-10P00050-U0GY8-0H	10X2X0.5	8.2	86	1000	710
	31047	3161-20P00050-U0GY8-0H	20X2X0.5	10.9	157	1000	800
	31048	3161-30P00050-U0GY8-0H	30X2X0.5	12.9	221	1000	900
	31049	3161-50P00050-U0GY8-0H	50X2X0.5	16.4	361	1000	1100
	31050	3161-100P0050-U0GY8-0H	100X2X0.5	20.0	678	1000	1250
	31051	3161-150P0050-U0GY8-0H	150X2X0.5	26.9	992	500	1100
	31052	3161-200P0050-U0GY8-0H	200X2X0.5	33.0	1305	500	1250

TRANSMISSION CHARACTERISTICS

Conductor Resistance (20° C)	Ohms/Km Ohms/Km	Max. Average Max. Ind	92 96
Resistance Unbalance	% %	Max. Average Max. Ind	0.75 2.5
Insulation Resistance	MOhm-Km	Min.	500
Mutual Capacitance (1000+/-200Hz)	nF/Km nF/Km	Average Max. Ind	75+/-2 90
Capacitance Unbalance (1000+/-200Hz) Pair to Pair (within sub-unit)	pF/500m	Max. Average Max. Ind	22 150
Pair to Pair (between adjacent sub-units or units)	pF/500m	Max. Average Max. Ind	20 50
Dielectric Strength (for minimum 60 Sec.)	Volts dC	Cond-Cond	1500