

Applications

Low Frequency for short range applications

Family

Limited Fire Hazard Internal cables for use in the Central Office

Design

1. Conductor

Copper wire, 0.5 mm nominal diameter

2. Insulation

Polyethylene

3. Core Elements

Pairs

4. Stranding

Pairs are stranded in layer or 20 pair unit construction

5. Core wrapping

Polyethylene terephthalate and 24 micron poly/alum tape with overlapping

6. Outer sheath

Low Smoke Non-Halogen compound

Option:

1.38mm Earth wire

Standards: Complies with BT specification CW 1600 & BT "M" specification M84 Classification E

Physical Characteristics

Number of Pairs	Minimum Insulation Thickness (mm)	Minimum Sheath Radial (mm)	Pair Elements /Unit Size	Maximum Overall Diameter (mm)
3	0.15	0.60	1 – 3	4.8
4	0.15	0.60	1 – 4	6.0
6	0.15	0.60	1 – 6	6.8
12	0.15	0.70	1 – 12	9.1
25	0.15	0.80	1 – 25	11.4
10 & Earth	0.15	0.60	½ x 20	8.6
20 & Earth	0.15	0.70	20	12.0
40 & Earth	0.15	0.90	20	15.0
80 & Earth	0.15	1.20	20	22.5
100 & Earth	0.15	1.50	20	27.0
160 & Earth	0.15	1.70	20	30.3
320 & Earth	0.15	2.20	20	39.5

V2

COPPER TELECOMMUNICATION CABLES

INTERNAL CABLE

Colour Scheme for Pairs

Cabling Element No.	A wire	B wire	Cabling Element No.	A wire	B wire
1.	WHITE-Blue	BLUE	16.	YELLOW-Blue	BLUE
2.	WHITE-Orange	ORANGE	17.	YELLOW-Orange	ORANGE
3.	WHITE-Green	GREEN	18.	YELLOW-Green	GREEN
4.	WHITE-Brown	BROWN	19.	YELLOW-Brown	BROWN
5.	WHITE-Grey	GREY	20.	YELLOW-Grey	GREY
6.	RED-Blue	BLUE	21.	VIOLET-Blue	BLUE
7.	RED-Orange	ORANGE	22.	VIOLET-Orange	ORANGE
8.	RED-Green	GREEN	23.	VIOLET-Green	GREEN
9.	RED-Brown	BROWN	24.	VIOLET-Brown	BROWN
10.	RED-Grey	GREY	25.	VIOLET-Grey	GREY
11.	BLACK-Blue	BLUE			
12.	BLACK-Orange	ORANGE			
13.	BLACK-Green	GREEN			
14.	BLACK-Brown	BROWN			
15.	BLACK-Grey	GREY			

Note 1: Uppercase letters indicate the base, solid colour of insulation, and the lower case indicates ink bands applied onto the base colour.

Make-up & Unit Identification Colours – 20 Pair Unit

Pair Size	10 Pair	20 Pair	40 Pair	80 Pair	100 Pair	160 Pair	320 Pair
	Number of Units						
Centre	½	1	4 x ½	1	1	4 x ½	1
1 st Layer				6 x ½	8 x ½	6	5
2 nd Layer					*****		10
Unit No.	Colour of Unit Lappings						
1	Orange	Orange	Orange	Orange	Orange	Orange	Orange
2			Green	Orange	Orange	Green	Orange
3				Natural	Natural	Orange	Natural
4				Green	Natural	Natural	Natural
5					Green	Natural	Natural
6						Natural	Green
7						Natural	Orange
8						Green	Natural
9 – 15							Natural
16							Green

Note 1: ½ refers to sub-units of 10 Pairs.

Note 2: These cables include the single 1.38mm diameter insulated conductor.

***** At the manufacturer's discretion the first layer may be 4 x 1.

Alternatively the centre layer may be 5 x 1 in which case the unit lappings shall be coloured
1 x Orange, 3 x Natural, 1 x Green.

Make-up & Unit Identification Colours – 20 Pair Unit

Pair Size	10 Pair	20 Pair	40 Pair	50 Pair	80 Pair	100 pair	160 Pair	320 Pair
Number of Units								
Centre	½	1	4 x ½	5 x ½	1	1	4 x ½	1
1st Layer					6 x ½	8 x ½	6	5
2nd Layer						*****		10
Colour of Unit Lappings								
Unit No.								
1	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
2			Green	Natural	Orange	Orange	Green	Orange
3				Green	Natural	Natural	Orange	Natural
4					Green	Natural	Natural	Natural
5						Green	Natural	Natural
6							Natural	Green
7							Natural	Orange
8							Green	Natural
9 – 15								Natural
16								Green

Note 1: ½ refers to sub-units of 10 Pairs.

Note 2: These cables include the single 1.38mm diameter insulated conductor.

* The Green colour lapping shall be applied to the last ½ unit.

***** At the manufacturer's discretion the first layer may be 4 x 1, Alternatively the centre layer may be 5 x 1 in which case the unit lappings shall be coloured Orange, 3 x natural, Green.

Electrical Characteristics at 20°C

Parameter	Unit	Conductor Gauge (mm)
		0.5
Conductor Resistance, Max Average @ 20°C	Ohms/km	97.8
Insulation Resistance, Min Value @ 20°C (500 volts/1 Min)	megohms	50
Mutual Capacitance, Max Average @ 20°C	nF/km	80
Capacitance Unbalance, Max Average @ 20°C	pF/500m	500

Fire Performance

Test	Type/Specification	Requirement	Comment
Fume Emission	Independent Microscopy	No halogen, nitrogen, phosphorous or sulphur containing compounds (trace elements ≤ 0.5% w/w)	Compliant
Single Cable Vertical Burn Test	BS EN 50265-2-1 IEC 60332-1: 2004	Onset of char (from top support): > 50mm Extent of char (from top support): < 540mm	Compliant
Bunched Cable Vertical Burn Test	BS EN 50266-2-4 BS EN 50266-2-5	Category C (1.5 NMV) Category D (< 12mm diameter)	Compliant
Acid Gas Emission	BS EN 50267-2-1: 1999	Less than 5mg/g	Compliant
Corrosivity of Evolved Gases	BS EN 50267-2-3: 1999	pH: ≥ 4.3/litre Conductivity: ≤ 10 μS/litre	Compliant
Smoke Emission	BS EN 61034-2: 2005	Minimum light transmittance 60%	Compliant