

External Exchange Side Multipair Telephone Cable

PACW/cellular PE/PJ /LAP/optional moisture barrier/PE sheathed
External Telephone Cable
(Complies with BT Specifications CW1236 and CW1179)



BRITISH CABLES COMPANY

Cellular insulation, jelly filled cables

Application

The cable is fully filled with petroleum jelly and is designed primarily for use in the Local Main Network. There is an option for spare pair units to be incorporated access into cables of 200 Pairs and above.

Construction

Twisted pairs in 25 Pair Units. The pair range is 50 – 2000.

Product description

Plain annealed solid copper wire, cellular polyethylene insulation, twisted pairs, petroleum jelly filling, paper core wrap, longitudinal aluminium moisture barrier bonded to black polyethylene sheath.



Number Pairs	Conductor Diameter (mm)	Maximum Insulated Diameter (mm)	Minimum Sheath Radial (mm)	Resistance @ 20°C (ohms/km)		Mutual Capacitance (nF/km)		Maximum Overall Diameter (mm)
				Max Ave	Max (99%)	Max Ave	Max (99%)	
50	0.40	0.75	1.6	143	150	56	64	16.0
100	0.40	0.75	1.7	143	150	56	64	20.5
200	0.40	0.75	1.8	143	150	56	64	26.0
300	0.40	0.75	1.9	143	150	56	64	30.5
400	0.40	0.75	1.9	143	150	56	64	35.0
500	0.40	0.75	2.0	143	150	56	64	37.5
600	0.40	0.75	2.1	143	150	56	64	40.5
800	0.40	0.75	2.2	143	150	56	64	46.5
1000	0.40	0.75	2.3	143	150	56	64	51.5
1200	0.40	0.75	2.4	143	150	56	64	56.0
1600	0.40	0.75	2.6	143	150	56	64	65.5
2000	0.40	0.75	2.6	143	150	56	64	70.0
50	0.50	0.90	1.6	91	96	56	64	19.0
100	0.50	0.90	1.7	91	96	56	64	23.5
150	0.50	0.90	1.8	91	96	56	64	27.0
200	0.50	0.90	1.9	91	96	56	64	30.5
300	0.50	0.90	2.0	91	96	56	64	37.0
400	0.50	0.90	2.1	91	96	56	64	42.5
500	0.50	0.90	2.2	91	96	56	64	46.0
600	0.50	0.90	2.2	91	96	56	64	49.5
800	0.50	0.90	2.4	91	96	56	64	56.5
1000	0.50	0.90	2.5	91	96	56	64	62.5
1200	0.50	0.90	2.6	91	96	56	64	69.0
50	0.63	1.15	1.7	58	60	56	64	22.0
100	0.63	1.15	1.8	58	60	56	64	28.0
200	0.63	1.15	2.0	58	60	56	64	37.5
300	0.63	1.15	2.2	58	60	56	64	46.0

Note: Mutual capacitance values may be increased by 3% for cables with a nominal number of pairs less than 400pr.

No. Prs	Cu Size (mm)	Nom Ins Dia (mm)	Min Sheath Radial	Resistance @ 20°C (ohms/km)		Mutual Capacitance (nF/km)		Maximum Overall Diameter (mm)
				Max Ave	Max (99%)	Max Ave	Max (99%)	
400	0.63	1.15	2.3	58	60	56	64	52.5
500	0.63	1.15	2.4	58	60	56	64	56.5
600	0.63	1.15	2.5	58	60	56	64	61.0
800	0.63	1.15	2.7	58	60	56	64	70.5
50	0.90	1.50	1.8	28	30	59	65	27.5
100	0.90	1.50	2.0	28	30	59	65	38.0

Note: Mutual capacitance values may be increased by 3% for cables with a nominal number of pairs less than 400pr.

Insulation resistance

Insulation resistance measurements shall be made with not less than 500 volts D.C. After steady electrification for one minute the insulation resistance measured between each conductor and the remaining conductors connected together shall be not less than 1500 megohms per 1000 metres at 20°C.

Capacitance Unbalance Measurement and Correction Factor

Pair to Pair capacitance unbalance measurements shall be made at a suitable audio frequency. During the measurements the aluminium foil and all conductors other than those under test shall be connected to earth. The measurements shall be corrected as follows, L being the length in metres of the cable under test. Lengths of less than 100 metres are considered as 100 metres.

$$\frac{1}{2} [L/500 + (L/500)^{\frac{1}{2}}]$$

Not more than 1% of the corrected capacitance unbalance measurements between adjacent pairs shall exceed 275pF.

CW1236 Pair colour scheme, unit binder colours and cable make-up

Cabling Element Number	a-wire	b-wire
1	WHITE	Blue
2	WHITE	Orange
3	WHITE	Green
4	WHITE	Brown
5	WHITE	Grey
6	RED	Blue
7	RED	Orange
8	RED	Green
9	RED	Brown
10	RED	Grey
11	BLACK	Blue
12	BLACK	Orange
13	BLACK	Green
14	BLACK	Brown
15	BLACK	Grey
16	YELLOW	Blue
17	YELLOW	Orange
18	YELLOW	Green
19	YELLOW	Brown
20	YELLOW	Grey
21	VIOLET	Blue
22	VIOLET	Orange
23	VIOLET	Green
24	VIOLET	Brown
25	VIOLET	Grey

Cable Size	No. and Pair Size of Unit in Centre and 1st Layer				No. of Pairs in Spare Pair Unit	No. of Usable Pairs Allowed
	Centre	1st layer	2nd Layer	3rd Layer		
50	1 x 50	-	-	-	0	1
100	1 x 25	3 x (12 +13)	-	-	0	1
200	1 x 50	6 x 25	-	-	4	2
	4 x 50	-	-	-		
300	1 x 50	5 x 50	-	-	4	3
	1 x 100	8 x 25	-	-		
400	1 x 100	6 x 50	-	-	4	3
500	3 x 50	7 x 50	-	-	4	4
	1 x 100	8 x 50	-	-		
600	3 x 50	9 x 50	-	-	4	4
	1 x 100	5 x 100	-	-		
800	1 x 50	5 x 50	10 x 50	-	4	5
	4 x 50	6 x 100	-	-		
1000	4 x 50	8 x 100	-	-	4	5
	3 x 100	7 x 100	-	-		
1200	3 x 100	9 x 100	-	-	4	5
	4 x 100	8 x 100	-	-		
1600	1 x 100	5 x 100	10 x 100	-	4	6
2000	4 x 50	6 x 100	12 x 100	-	8	6
2400	3 x 100	8 x 100	13 x 100	-	8	7
3200	1 x 100	5 x 100	10 x 100	16 x 100	8	7
4000	3 x 100	7 x 100	12 x 100	18 x 100	8	8
4800	4 x 100	9 x 100	15 x 100	20 x 100	8	8

Note: Alternative make-ups are shown for some sizes and as a further alternative any cable can be made up using 25 Pair Units throughout.

Binder colour identification

(double & quadruple units / centre & layers)

Unit	Position of Sub-Unit or Unit			
	First	Second	Third	Fourth
Double	BLUE	BLUE	ORANGE	ORANGE
Quadruple	BLUE	ORANGE	GREEN	BROWN

Position of Units		
Second	Third	Fourth
BLUE	ORANGE	ORANGE
ORANGE	GREEN	BROWN

