

# Network Rail Telecommunications Cable

PACW/ solid polyethylene insulation/ PJ filled/ moisture barrier/polyethylene sheathed  
 External Telephone Cable (Complies with Specifications NR/PS/TEL/00015 and TS0886)  
 - Network Rail certificate of acceptance - PA05/06233



## External trackside telecom cable Duct grade

### Application

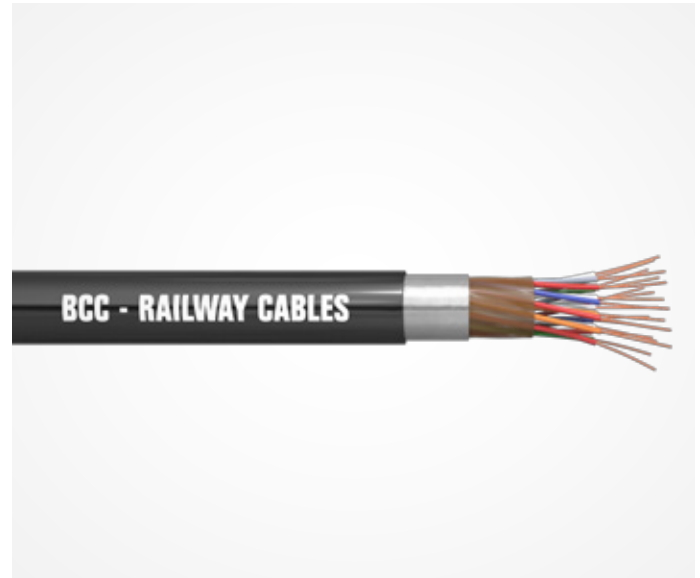
The cable is designed primarily for track-side railway installation in troughing. It is a petroleum jelly filled, twisted pair cable suitable for duct installation with a bonded moisture barrier block polyethylene sheath. It is available for direct buried or open channel installation with an additional protection of a bonded corrugated steel tape and sheath. The additional protection provides protection against rodent attack. The product satisfies the requirements of Network Rail Specification NR/PS/TEL/00015 (formerly GK/RT 0315) and Specifications TS0886 and BR1822 when armoured.

### Construction

Twisted pairs in 10 Pair Units. The pair range is 2 – 100.

### Product description

Plain annealed solid copper wire, solid polyethylene insulation, twisted pairs, petroleum jelly filling, water swellable tape, paper core wrap, black polyethylene sheath incorporating a longitudinally applied aluminium/polyethylene moisture barrier.



Number Pairs	BCC P/N	Nominal Cdr Size (mm)	Minimum Elongation (%)	Nominal Ins. Diameter (mm)	Duct / Inner Sheath Cable		Min Bend Radius (mm)	Cable Weight (kg/km)
					Min. Radial (mm)	Diameter Max. (mm)		
2	10187101	0.63	15	1.15	1.6	10.5	126	59
5	10187102	0.63	15	1.15	1.6	12.0	144	100
10	10187103	0.63	15	1.15	1.6	13.8	166	156
20	10180680	0.63	15	1.15	1.6	16.3	196	260
30	10187104	0.63	15	1.15	1.6	18.6	224	360
50	10187105	0.63	15	1.15	1.6	22.4	269	552
75	10187106	0.63	15	1.15	1.6	26.4	317	785
100	10181441	0.63	15	1.15	1.6	29.2	351	1015
2	10188101	0.90	15	1.50	1.6	11.5	138	81
5	10188102	0.90	15	1.50	1.6	13.8	166	152
10	10188103	0.90	15	1.50	1.6	16.3	196	253
20	10188104	0.90	15	1.50	1.6	20.1	242	443
30	10188105	0.90	15	1.50	1.6	23.4	281	628
50	10188106	0.90	15	1.50	1.6	28.2	339	988
75	10188107	0.90	15	1.50	1.6	34.0	408	1431
100	10188108	0.90	15	1.50	1.6	37.3	448	1872

Cable Size	Cu Size (mm)	Mutual Capacitance (nF/km)		Conductor Resistance @ 20°C (ohms)	
		Max Average	99%	Max Average	99%
20 Pairs or less	0.63	70.0	79	58.0	60.0
	0.90	79.0	85	28.0	30.0
More than 20 pairs	0.63	67.0	75.0	58.0	60.0
	0.90	75.0	81.0	28.0	30.0

Attenuation & Near - End Crosstalk	Cu Size (mm)	Measurement Frequency			
		1.0 kHz	2.4 kHz	1.024 MHz	
Attenuation dB/km (Max Ave)	0.63	1.40	2.15	18.70	
	0.90	0.95	1.46	14.60	
NEXTA (dB Minimum)		70.00	65.00	Within Unit	Between Unit
				40.00	47.00

### 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

Not more than 1% of the corrected capacitance unbalance measurements between adjacent pairs shall exceed the following values: Two-Pair (Quad) Cable 800pF. All other sizes 275pF.

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

Cabling Element No.	a-wire	b-wire	Unit Number	Binder Colour	Cable Size	No. and Pair Size of Unit in Centre and 1st Layer	
						Centre	1st layer
1	WHITE	BLUE	1	BLUE	2	1 x 2	-
2	WHITE	ORANGE	2	ORANGE	5	1 x 5	-
3	WHITE	GREEN	3	GREEN	10	1 x 10	-
4	WHITE	BROWN	4	BROWN	20	4 x 5	-
5	WHITE	Grey	5	Grey		2 x 10	-
6	RED	BLUE	6	WHITE	30	6 x 5	-
7	RED	ORANGE	7	RED		3 x 10	-
8	RED	GREEN	8	BLACK	50	5 x 10	-
9	RED	BROWN	9	YELLOW		1 x 10	4 x 10
10	RED	Grey	10	VIOLET	75	3 x 5	6 x 10
					100	2 x 10	8 x 10
						3 x 10	7 x 10
						4 x 5	8 x 10



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