

Cable Handbook

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Welcome to our Cable Handbook

Unipart Rail and Eland Cables offer one of the most comprehensive and competitive Network Rail approved cable portfolios in the industry. This includes everything from Signalling and Telecommunications Cable to Power and Points Heating Cable.

This Cable Handbook contains detailed listings of our entire rail product range. Following massive inventory investment, rail customers can benefit from guaranteed stockholding and immediate availability on ex-stock cables.

Having played an integral role in the development and maintenance of the UK's rail network for more than a decade, Eland Cables and Unipart Rail are now working together as framework suppliers for Network Rail's Project Synergy contract. This combines Eland Cables' technical knowledge, sourcing expertise and established supplier relationships with Unipart Rail's logistics, materials management and wider rail portfolio to provide you with unrivalled service.

Together, we are committed to delivering sustainable best value to our customers, supporting Network Rail and contributing towards the safety and efficiency of the UK's railways.

Expect more from your rail cable supplier...

- Network Rail approved cables
- Guaranteed stockholding
- Immediate availability
- Competitive prices
- 24 hour emergency assistance
- Remote warehouse for on-site materials management
- Drum collection and recycling service
- Downloadable specifications and 3D cables – available at www.uniparttrail.com/elandcables

Call our dedicated sales team now on +44 (0)1270 847 300 or e-mail cable@uniparttrail.com

Signalling Cable Type A1, A2, A3



Application	Light duty LSZH sheathed single and multi-core cables generally for internal use. Smooth sheath suitable for installation in ducting.
Standards	NR/PS/SIG/00005 (formerly RT/E/PS/00005)
Conductor	Class 2 stranded tinned conductor to BS EN 60228:2005 (previously BS6360)
Insulation	LSZH (Low Smoke Zero Halogen) or EPR (Ethylene Propylene Rubber) Composite (optional on Type A4)
Separator	PETP (Polyethylene Terephthalate)
Sheath	LSZH (Low Smoke Zero Halogen)
Sheath Colour	Black
Voltage Rating	650/1100V
Temperature Rating	-25°C to +85°C

Signalling Cable Type A1, A2, A3

Dimensions

Rail Catalogue Number	Cable Type	No. of Cores x Nominal Cross Sectional Area # x mm ²	No. and Nominal Diameter of Strands #/mm	Thickness of Sheath Min. mm	Overall Diameter Min. mm	Overall Diameter Max. mm	Nominal Weight kg/Km
006/120001	A1 (blue)	1 x 0.75	7/0.37	0.7	2.7	3.2	16
006/120002	A1 (brown)	1 x 0.75	7/0.37	0.7	2.7	3.2	16
006/120003	A1 (red)	1 x 0.75	7/0.37	0.7	2.7	3.2	16
006/120004	A1 (orange)	1 x 0.75	7/0.37	0.7	2.7	3.2	16
006/120005	A1 (grey)	1 x 0.75	7/0.37	0.7	2.7	3.2	16
006/120006	A1 (violet)	1 x 0.75	7/0.37	0.7	2.7	3.2	16
006/120007	A1 (black)	1 x 0.75	7/0.37	0.7	2.7	3.2	16
006/120008	A1 (black)	1 x 1.15	16/0.30	0.7	2.9	3.6	20
006/120020	A2	1 x 0.75	7/0.37	0.7	4.0	5.0	30
006/120024	A2	1 x 1.15	16/0.30	0.7	4.3	5.3	35
006/120040	A3	2 x 0.75	7/0.37	0.9	6.7	8.8	67
006/120041	A3	4 x 0.75	7/0.37	1.0	8.0	10.4	108
006/120042	A3	6 x 0.75	7/0.37	1.1	9.7	12.5	160
006/120043	A3	10 x 0.75	7/0.37	1.2	12.6	16.1	259
006/120044	A3	14 x 0.75	7/0.37	1.3	13.8	17.7	495
006/120045	A3	36 x 0.75	7/0.37	1.6	21.6	26.9	752
006/120046	A3	48 x 0.75	7/0.37	1.6	24.3	30.7	963

Conductors

Class 2 stranded conductors for single core and multi-core cables

1	2	3	4	5	6	7	9
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Metal-Coated Wires ohms/Km
0.75	7	-	-	-	-	-	24.8000

Table in accordance with BS EN 60228:2005 (previously BS6360).

Signalling Cable Type B1, B2



Application	Heavy duty EPR–insulated and High Density PCP–sheathed single, twin and multi-core cables
Standards	NR/PS/SIG/00005 (formerly RT/E/PS/00005)
Conductor	Class 2 tinned conductor to BS EN 60228:2005 (previously BS6360)
Insulation	EPR (Ethylene Propylene Rubber) Type GP4 to BS7655
Sheath	HDPCP (High Density Polychloroprene) Type RS2 to BS7655
Sheath Colour	Black
Voltage Rating	650/1100V
Temperature Rating	-25°C to +85°C

Signalling Cable Type B1, B2

Dimensions

Rail Catalogue Number	Cable Type	No. of Cores x Nominal Cross Sectional Area # x mm ²	No. and Nominal Diameter of Strands #/mm	Nominal Thickness of Sheath mm	Overall Diameter Min. mm	Overall Diameter Max. mm	Nominal Weight kg/Km
006/120061	B1	1 x 2.50	7/0.67	2.0	7.2	8.9	34
006/120062	B1	1 x 10.00	7/1.35	2.0	9.4	11.8	205
006/120063	B1	1 x 35.00	19/1.53	2.0	12.9	16.1	495
006/120081	B2	2 x 1.50	7/0.53	2.0	9.4	12.1	151
006/120082	B2	2 x 2.50	7/0.67	2.0	10.5	13.1	187
006/120083	B2	2 x 10.00	7/1.35	2.0	15.0	18.7	448
006/120113	B2	2 x 16.00	7/1.70	2.0	16.7	20.9	627
006/120084	B2	2 x 35.00	19/1.53	2.2	22.3	27.8	1185
006/120085	B2	2 x 70.00	19/2.14	2.4	28.8	36.0	1904
006/120086	B2	2 x 95.00	19/2.52	2.6	33.2	41.5	2885
006/120087	B2	4 x 0.75	7/0.37	2.0	10.2	12.8	173
006/120088	B2	4 x 1.50	7/0.53	2.0	10.9	13.7	220
006/120089	B2	4 x 2.50	7/0.67	2.0	11.9	14.8	264
006/120090	B2	7 x 0.75	7/0.37	2.0	11.8	14.7	239
006/120091	B2	7 x 1.50	7/0.53	2.0	12.6	15.8	304
006/120092	B2	7 x 2.50	7/0.67	2.0	13.8	17.2	387
006/120093	B2	10 x 0.75	7/0.37	2.0	14.4	18.0	342
006/120094	B2	10 x 1.50	7/0.53	2.0	15.6	19.4	402
006/120095	B2	10 x 2.50	7/0.67	2.0	17.1	21.3	564
006/120096	B2	12 x 0.75	7/0.37	2.0	14.8	18.5	351
006/120111	B2	6 x 2 x 0.75	7/0.37	2.0	19.7	24.6	469
006/120097	B2	12 x 1.50	7/0.67	2.0	16.0	20.0	466
006/120098	B2	12 x 2.50	7/0.37	2.0	17.6	22.0	612
006/120099	B2	19 x 0.75	7/0.37	2.0	17.0	21.3	490
006/120100	B2	19 x 1.50	7/0.53	2.0	18.5	23.1	649
006/120101	B2	19 x 2.50	7/0.67	2.0	20.4	25.5	886

Signalling Cable Type B1, B2

Rail Catalogue Number	Cable Type	No. of Cores x Nominal Cross Sectional Area # x mm ²	No. and Nominal Diameter of Strands #/mm	Nominal Thickness of Sheath mm	Overall Diameter Min. mm	Overall Diameter Max. mm	Nominal Weight kg/Km
006/120102	B2	27 x 0.75	7/0.37	2.0	20.1	25.1	637
006/120103	B2	27 x 1.50	7/0.53	2.2	22.2	27.8	850
006/120104	B2	27 x 2.50	7/0.67	2.2	24.6	30.7	1222
006/120105	B2	37 x 0.75	7/0.37	2.2	22.7	28.4	846
006/120106	B2	37 x 1.50	7/0.53	2.2	25.1	31.4	1185
006/120107	B2	37 x 2.50	7/0.67	2.4	27.8	34.7	2030
006/120108	B2	48 x 0.75	7/0.37	2.2	25.7	32.2	1083
006/120109	B2	48 x 1.50	7/0.53	2.4	28.1	35.1	1581
006/120110	B2	48 x 2.50	7/0.67	2.6	31.2	39.0	2010

Conductors

Class 2 stranded conductors for single core and multi-core cables

1	2	3	4	5	6	7	9
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Metal-Coated Wires ohms/Km
0.75	7	-	-	-	-	-	24.8000
1.00	7	-	-	-	-	-	18.2000
1.50	7	-	6	-	-	-	12.2000
2.50	7	-	6	-	-	-	7.5600
4.00	7	-	6	-	-	-	4.7000
6.00	7	-	6	-	-	-	3.1100
10.00	7	7	6	6	-	-	1.8400
16.00	7	7	6	6	-	-	1.1600
35.00	7	7	6	6	6	6	0.5290
70.00	19	19	12	12	12	12	0.2700
95.00	19	19	15	15	15	15	0.1950

Table in accordance with BS EN 60228:2005 (previously BS6360).

Signalling Cable Type C1, C2, C3 TPWS



Application	Heavy duty signalling cable suitable for tails.
Standards	NR/PS/SIG/00005 (formerly RT/E/PS/00005)
Conductor	Class 5 tinned conductor to BS EN 60228:2005 (previously BS6360)
Insulation	EPR (Ethylene Propylene Rubber) Type GP4 to BS7655
Drain Wire	Type C3 only
Separator	PETP (Polyethylene Terephthalate)
Sheath	HDPCP (High Density Polychloroprene) Type RS2 to BS7655
Sheath Colour	Black
Voltage Rating	650/1100V
Temperature Rating	-25°C to +85°C

Signalling Cable Type C1, C2, C3 TPWS

Dimensions

Rail Catalogue Number	Cable Type	No. of Cores x Nominal Cross Sectional Area # x mm ²	No. and Nominal Diameter of Strands #/mm	Nominal Thickness of Sheath mm	Overall Diameter Min. mm	Overall Diameter Max. mm	Nominal Weight kg/Km
006/120130	C1	1 x 2.5	50/0.25	3.8	11.2	14.0	174
006/120140	C2	2 x 2.5	50/0.25	3.8	14.9	18.8	338
006/120141	C2	4 x 2.5	50/0.25	3.8	16.4	20.9	450
006/120142	C2	7 x 2.5	50/0.25	3.8	18.7	23.7	612
006/120143	C2	10 x 2.5	50/0.25	3.8	22.5	28.6	836
006/120144	C2	12 x 2.5	50/0.25	3.8	23.2	29.3	909
006/160086	C3 TPWS	1 x 2 x 2.5	50/0.25	3.8	15.0	20.0	341

Conductors

Class 5 flexible copper conductors for single core and multi-core cables

1	2	4
Nominal Cross Sectional Area mm ²	Maximum Diameter of Wires in the Conductor mm ²	Maximum Resistance of Conductor at 20°C
		Metal-Coated Wires ohms/Km
2.50	0.26	8.2100

Table in accordance with BS EN 60228:2005 (previously BS6360).

Signalling Cable Type D1, D2



Application	LSZH single, twin and multi-core cables.
Standards	NR/PS/SIG/00005 (formerly RT/E/PS/00005)
Conductor	Class 2 tinned conductor to BS EN 60228:2005 (previously BS6360)
Insulation	LSZH (Low Smoke Zero Halogen) or EPR (Ethylene Propylene Rubber)
Separator	PETP (Polyethylene Terephthalate)
Sheath	LSZH (Low Smoke Zero Halogen)
Sheath Colour	Black
Voltage Rating	650/1100V
Temperature Rating	-25°C to +85°C

Signalling Cable Type D1, D2

Dimensions

Rail Catalogue Number	Cable Type	No. of Cores x Nominal Cross Sectional Area # x mm ²	No. and Nominal Diameter of Strands #/mm	Nominal Thickness of Sheath mm	Overall Diameter Min. mm	Overall Diameter Max. mm	Nominal Weight kg/Km
006/120213	D1	1 x 2.50	7/0.67	2.0	7.2	8.9	34
006/120214	D1	1 x 10.00	7/1.35	2.0	9.4	11.8	205
006/120215	D1	1 x 35.00	19/1.53	2.0	12.9	16.1	495
006/120217	D2	2 x 2.50	7/0.67	2.0	10.5	13.1	170
006/120218	D2	2 x 10.00	7/1.35	2.0	15.0	18.7	443
006/120226	D2	2 x 16.00	7/1.70	2.0	16.7	20.9	625
006/120219	D2	2 x 35.00	19/1.53	2.2	22.3	27.8	1232
006/120221	D2	2 x 95.00	19/2.52	2.6	33.2	41.5	2945
006/120222	D2	4 x 0.75	7/0.37	2.0	10.2	12.8	150
006/120227	D2	7 x 0.75	7/0.37	2.0	11.8	14.7	225
006/120229	D2	7 x 2.50	7/0.67	2.0	13.8	17.2	500
006/120230	D2	10 x 0.75	7/0.37	2.0	14.4	18.0	280
006/120233	D2	12 x 0.75	7/0.37	2.0	14.8	18.5	321
006/120235	D2	12 x 2.50	7/0.67	2.0	17.6	22.0	613
006/120236	D2	19 x 0.75	7/0.37	2.0	17.0	21.3	425
006/120210	D2	19 x 2.50	7/0.67	2.0	20.4	25.5	815
006/120238	D2	27 x 0.75	7/0.37	2.0	20.1	25.1	606
006/120239	D2	27 x 1.50	7/0.53	2.2	22.2	27.8	897
006/120241	D2	37 x 0.75	7/0.37	2.2	22.7	28.4	786
006/120242	D2	37 x 1.50	7/0.53	2.2	25.1	31.4	1126
006/120244	D2	48 x 0.75	7/0.37	2.2	25.7	32.2	972
006/120245	D2	48 x 1.50	7/0.53	2.4	28.1	35.1	1280
006/120246	D2	48 x 2.50	7/0.67	2.6	31.2	39.0	1960

Signalling Cable Type D1, D2

Conductors

Class 2 stranded conductors for single core and multi-core cables

1	2	3	4	5	6	7	9
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Metal-Coated Wires ohms/Km
0.75	7	-	-	-	-	-	24.8000
1.00	7	-	-	-	-	-	18.2000
1.50	7	-	6	-	-	-	12.2000
2.50	7	-	6	-	-	-	7.5600
4.00	7	-	6	-	-	-	4.7000
6.00	7	-	6	-	-	-	3.1100
10.00	7	7	6	6	-	-	1.8400
16.00	7	7	6	6	-	-	1.1600
35.00	7	7	6	6	6	6	0.5290
70.00	19	19	12	12	12	12	0.2700
95.00	19	19	15	15	15	15	0.1950

Table in accordance with BS EN 60228:2005 (previously BS6360).

Signalling Cable Type E1, E2, E3 TPWS



Application	LSZH signalling cable suitable for tails.
Standards	NR/PS/SIG/00005 (formerly RT/E/PS/00005)
Conductor	Class 5 tinned conductor to BS EN 60228:2005 (previously BS6360)
Insulation	LSZH (Low Smoke Zero Halogen) or EPR (Ethylene Propylene Rubber)
Drain Wire	Type E3 only
Separator	PETP (Polyethylene Terephthalate)
Sheath	LSZH (Low Smoke Zero Halogen)
Sheath Colour	Black
Voltage Rating	650/1100V
Temperature Rating	-25°C to +85°C

Signalling Cable Type E1, E2, E3 TPWS

Dimensions

Rail Catalogue Number	Cable Type	No. of Cores x Nominal Cross Sectional Area # x mm ²	No. and Nominal Diameter of Strands #/mm	Nominal Thickness of Sheath mm	Overall Diameter Min. mm	Overall Diameter Max. mm	Nominal Weight kg/Km
006/120172	E1	1 x 2.5	50/0.25	3.8	11.2	14.0	174
006/120170	E2	2 x 2.5	50/0.25	3.8	14.9	18.8	359
006/120171	E2	4 x 2.5	50/0.25	3.8	16.4	20.9	445
006/120173	E2	7 x 2.5	50/0.25	3.8	18.7	23.7	590
006/120174	E2	10 x 2.5	50/0.25	3.8	22.5	28.6	784
006/120175	E2	12 x 2.5	50/0.25	3.8	23.2	29.3	868

Conductors

Class 5 flexible Copper Conductors for single core and multi-core cables

1	2	4
Nominal Cross Sectional Area mm ²	Maximum Diameter of Wires in Conductor mm ²	Maximum Resistance of Conductor at 20°C
		Metal-Coated Wires ohms/Km
2.50	0.26	8.2100

Table in accordance with BS EN 60228:2005 (previously BS6360).

Steel Wire Armoured PVC Cable



Application	SWA Cable — power and auxiliary control cables for use in power networks, underground, outdoor and indoor applications and in cable ducting.
Standards	BS5467, IEC 60502
Conductor	Class 2 plain stranded copper conductor to BS EN 60228:2005 (previously BS6360)
Insulation	XLPE (Cross-Linked Polyethylene)
Bedding	PVC (Polyvinyl Chloride)
Armouring	Single core: AWA (Aluminium Wire Armour) Multi-core: SWA (Steel Wire Armour)
Sheath	PVC (Polyvinyl Chloride)
Sheath Colour	Black
Voltage Rating	600/1000V
Temperature Rating	0°C to +90°C
Minimum Bending Radius	1.5mm ² - 16mm ² : 6 x overall diameter 25mm ² and above: 8 x overall diameter

Steel Wire Armoured PVC Cable

Core Identification

- 1 Core: Brown
- 2 Cores: Brown, Blue
- 3 Cores: Brown, Black, Grey
- 4 Cores: Blue, Brown, Black, Grey
- 5 Cores: Green/Yellow, Blue, Brown, Black, Grey

Alternative core identification:
 White cores with Black numbers



Dimensions

BS5467 XLPE/PVC/AWA/PVC (Copper)

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Diameter mm		Nominal Weight kg/Km
		Under Armour	Overall	

Aluminium Wire Armoured PVC – 1 Core

1 x 50	1.0	12.7	17.5	800
1 x 70	1.1	14.7	20.2	960
1 x 95	1.1	16.6	22.3	1240
1 x 120	1.2	18.5	24.2	1510
1 x 150	1.4	20.8	27.4	1900
1 x 185	1.6	23.2	30.0	2320
1 x 240	1.7	26.0	32.8	2930
1 x 300	1.8	28.6	35.6	3580
1 x 400	2.0	32.4	40.4	4600
1 x 500	2.2	36.0	44.2	5770
1 x 630	2.4	40.0	48.8	7250
1 x 800	2.6	45.6	55.4	9381
1 x 1000	2.8	50.6	60.6	11540

BS5467 XLPE/PVC/SLA/PVC (Copper)

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Diameter mm		Nominal Weight kg/Km
		Under Armour	Overall	

Steel Wire Armoured PVC – 2 Cores

2 x 1.5	0.6	7.3	12.1	302
2 x 2.5	0.7	8.5	13.6	346
2 x 4.0	0.7	9.4	14.7	410
2 x 6.0	0.7	10.5	15.9	499

Steel Wire Armoured PVC Cable

BS5467 XLPE/PVC/SWA/PVC (Copper)

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Diameter mm		Nominal Weight kg/Km
		Under Armour	Overall	

Steel Wire Armoured PVC – 2 Cores

2 x 10.0	0.7	12.3	18.0	648
2 x 16.0	0.7	14.3	20.4	978
2 x 25.0	0.9	14.7	20.4	1290
2 x 35.0	0.9	16.8	23.3	1500
2 x 50.0	1.0	19.0	25.8	1890
2 x 70.0	1.1	22.0	29.0	2450
2 x 95.0	1.1	25.1	33.1	3300
2 x 150.0	1.4	30.9	39.3	4750

Steel Wire Armoured PVC – 3 Cores

3 x 1.5	0.6	7.8	12.6	330
3 x 2.5	0.7	9.2	14.1	390
3 x 4.0	0.7	10.0	15.3	464
3 x 6.0	0.7	11.2	16.6	568
3 x 10.0	0.7	13.1	19.5	866
3 x 16.0	0.7	15.3	21.6	1152
3 x 25.0	0.9	18.9	25.5	1800
3 x 35.0	0.9	21.3	28.0	2230
3 x 50.0	1.0	21.7	28.5	2490
3 x 70.0	1.1	25.2	32.2	3290
3 x 95.0	1.1	28.8	37.0	4440

Steel Wire Armoured PVC – 4 Cores

4 x 1.5	0.6	8.5	13.5	365
4 x 2.5	0.7	9.9	15.0	438
4 x 4.0	0.7	11.0	16.4	532
4 x 6.0	0.7	12.3	18.7	764
4 x 10.0	0.7	14.5	21.1	1013
4 x 16.0	0.7	17.0	22.9	1360
4 x 25.0	0.9	21.0	27.6	2160
4 x 35.0	0.9	23.6	30.4	2690
4 x 50.0	1.0	25.0	32.0	3130
4 x 70.0	1.1	29.5	37.7	4500
4 x 95.0	1.1	33.3	41.7	5600

Steel Wire Armoured PVC Cable

BS5467 XLPE/PVC/SWA/PVC (Copper)

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Diameter mm		Nominal Weight kg/Km
		Under Armour	Overall	

Steel Wire Armoured PVC – 4 Cores

4 x 120.0	1.2	37.5	47.1	7400
4 x 150.0	1.4	41.6	51.4	8780
4 x 185.0	1.6	46.4	56.6	10630
4 x 240.0	1.7	52.6	63.0	13390
4 x 300.0	1.8	58.0	68.8	16290
4 x 400.0	2.0	65.4	78.1	19800

Steel Wire Armoured PVC – 5 Cores

5 x 1.5	0.6	9.7	14.3	410
5 x 2.5	0.7	11.7	16.3	470
5 x 4.0	0.7	13.0	17.8	710
5 x 6.0	0.7	14.5	20.0	876
5 x 10.0	0.7	17.2	22.9	1165
5 x 16.0	0.7	20.0	26.6	1742
5 x 25.0	0.9	24.7	31.5	2323
5 x 35.0	0.9	27.8	34.8	2932
5 x 50.0	1.0	32.4	40.4	4192

Steel Wire Armoured PVC – 7 Cores

7 x 1.5	0.6	10.2	15.2	470
7 x 2.5	0.7	12.3	17.1	600

Steel Wire Armoured PVC – 12 Cores

12 x 1.5	0.6	13.7	19.4	780
12 x 2.5	0.7	16.3	22.4	1000

Steel Wire Armoured PVC – 19 Cores

19 x 1.5	0.6	16.2	22.2	1000
19 x 2.5	0.7	19.9	26.6	1540

Steel Wire Armoured PVC – 27 Cores

27 x 1.5	0.6	20.0	26.7	1500
27 x 2.5	0.7	24.0	30.7	1950

Steel Wire Armoured PVC – 37 Cores

37 x 1.5	0.6	22.3	29.0	1800
37 x 2.5	0.7	26.9	33.8	2350

Steel Wire Armoured PVC Cable

Conductors

Class 2 stranded conductors for single core and multi-core cables

1	2	3	4	5	6	7	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires ohms/Km
1.50	7	-	6	-	-	-	12.1000
2.50	7	-	6	-	-	-	7.4100
4.00	7	-	6	-	-	-	4.6100
6.00	7	-	6	-	-	-	3.0800
10.00	7	7	6	6	-	-	1.8300
16.00	7	7	6	6	-	-	1.1500
25.00	7	7	6	6	6	6	0.7270
35.00	7	7	6	6	6	6	0.5240
50.00	19	19	6	6	6	6	0.3870
70.00	19	19	12	12	12	12	0.2680
95.00	19	19	15	15	15	15	0.1930
120.00	37	37	18	15	18	15	0.1530
150.00	37	37	18	15	18	15	0.1240
185.00	37	37	30	30	30	30	0.0991
240.00	37	37	34	30	34	30	0.0754
300.00	61	61	34	30	34	30	0.0601
400.00	61	61	53	53	53	53	0.0470

Table in accordance with BS EN 60228:2005 (previously BS6360).

Steel Wire Armoured PVC Cable Cable

Electrical Characteristics XLPE/PVC/AWA/PVC

Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm ²	Reference Method C (clipped direct)		Reference Method F (in free air or on a perforated cable tray, horizontal or vertical)								
	Touching		Touching			Spaced by One Cable Diameter					
	2 Cables Single Phase AC or DC Flat Amps	3 or 4 Cables Three Phase AC Flat Amps	2 Cables Single Phase AC or DC Flat Amps	3 Cables Three Phase AC Flat Amps	3 Cables Three Phase AC Trefoil Amps	2 Cables DC Amps		2 Cables Single Phase AC Amps		3 or 4 Cables Three Phase AC Amps	
						Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
50	237	220	253	232	222	284	270	282	266	288	266
70	303	277	322	293	285	356	349	357	337	358	331
95	367	333	389	352	346	446	426	436	412	425	393
120	425	383	449	405	402	519	497	504	477	485	449
150	488	437	516	462	463	600	575	566	539	549	510
185	557	496	587	524	529	688	660	643	614	618	574
240	656	579	689	612	625	815	782	749	714	715	666
300	755	662	792	700	720	943	906	842	805	810	755
400	853	717	899	767	815	1137	1094	929	889	848	797
500	962	791	1016	851	918	1314	1266	1032	989	923	871
630	1082	861	1146	935	1027	1528	1474	1139	1092	992	940
800	1170	904	1246	987	1119	1809	1744	1204	1155	1042	978
1000	1261	961	1345	1055	1214	2100	2026	1289	1238	1110	1041

Ambient temperature: 30°C

Conductor operating temperature: 90°C

1. Where a conductor operates at a temperature exceeding 70°C, it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512.1.2).

2. Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4D3A) must be used. (see Regulation 523.1).

The above table is in accordance with Table 4E3A of the 17th Edition of IEE Wiring Regulations.

Steel Wire Armoured PVC Cable

Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area mm²	2 Cables DC	Reference Method C & F (clipped direct, on tray or in free air)														
		2 Cables Single Phase AC mV/A/m						3 or 4 Cables Three Phase AC mV/A/m								
		Touching			Spaced*			Trefoil and Touching			Flat and Touching			Flat and Spaced*		
1	2	3			4			5			6			7		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
50	0.980	0.990	0.210	1.000	0.980	0.29	1.00	0.860	0.180	0.870	0.840	0.250	0.88	0.840	0.330	0.90
70	0.670	0.680	0.200	0.710	0.690	0.29	0.75	0.590	0.170	0.620	0.600	0.250	0.65	0.620	0.320	0.70
95	0.490	0.510	0.195	0.550	0.530	0.28	0.60	0.440	0.170	0.470	0.460	0.240	0.52	0.490	0.310	0.58
120	0.390	0.410	0.190	0.450	0.430	0.27	0.51	0.350	0.165	0.390	0.380	0.240	0.44	0.410	0.300	0.51
150	0.310	0.330	0.185	0.380	0.360	0.27	0.45	0.290	0.160	0.330	0.310	0.230	0.39	0.340	0.290	0.45
185	0.250	0.270	0.185	0.330	0.300	0.26	0.40	0.230	0.160	0.280	0.260	0.230	0.34	0.290	0.290	0.41
240	0.195	0.210	0.180	0.280	0.240	0.26	0.35	0.180	0.155	0.240	0.210	0.220	0.30	0.240	0.280	0.37
300	0.155	0.170	0.175	0.250	0.195	0.25	0.32	0.145	0.150	0.210	0.170	0.220	0.28	0.200	0.270	0.34
400	0.115	0.145	0.170	0.220	0.180	0.24	0.30	0.125	0.150	0.195	0.160	0.210	0.27	0.200	0.270	0.33
500	0.093	0.125	0.170	0.210	0.165	0.24	0.29	0.105	0.145	0.180	0.145	0.200	0.25	0.190	0.240	0.31
630	0.073	0.105	0.165	0.195	0.150	0.23	0.27	0.092	0.145	0.170	0.135	0.195	0.24	0.175	0.230	0.29
800	0.056	0.090	0.160	0.190	0.145	0.23	0.27	0.086	0.140	0.165	0.130	0.180	0.23	0.175	0.195	0.26
1000	0.045	0.092	0.155	0.180	0.140	0.21	0.25	0.080	0.135	0.155	0.125	0.170	0.21	0.165	0.180	0.24

Conductor operating temperature: 90°C

* Spacings larger than one cable diameter will result in a larger voltage drop.

r = Resistive Component

x = Reactive Component

z = Impedance Value

The above table is in accordance with Table 4E3B of the 17th Edition of IEE Wiring Regulations.

For cables having conductors of 16mm² or less cross-sectional area their inductances can be ignored and (mV/A/m)_r values only are tabulated. For cables having conductors greater than 16mm² cross-sectional area, the impedance values are given as (mV/A/m)_z, together with the resistive component (mV/A/m)_r and the reactive component (mV/A/m)_x.

The above paragraph is extracted from Appendix 4 of the 17th Edition of IEE Wiring Regulations.

Steel Wire Armoured PVC Cable

Electrical Characteristics XLPE/PVC/AWA/PVC

Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm ²	Reference Method C (clipped direct) Amps		Reference Method E (in free air or on a perforated cable tray, horizontal or vertical) Amps		Reference Method D (direct in ground or in ducting in ground, in or around buildings) Amps	
	1 Two Core Cable Single Phase AC or DC	1 Three or 1 Four Core Cable Three Phase AC	1 Two Core Cable Single Phase AC or DC	1 Three or 1 Four Core Cable Three Phase AC	1 Two Core Cable Single Phase AC or DC	1 Three or 1 Four Core Cable Three Phase AC
1	2	3	4	5	6	7
1.5	27	23	29	25	25	21
2.5	36	31	39	33	33	28
4.0	49	42	52	44	43	36
6.0	62	53	66	56	53	44
10.0	85	73	90	78	71	58
16.0	110	94	115	99	91	75
25.0	146	124	152	131	116	96
35.0	180	154	188	162	139	115
50.0	219	187	228	197	164	135
70.0	279	238	291	251	203	167
95.0	338	289	354	304	239	197
120.0	392	335	410	353	271	223
150.0	451	386	472	406	306	251
185.0	515	441	539	463	343	281
240.0	607	520	636	546	395	324
300.0	698	599	732	628	446	365
400.0	787	673	847	728	-	-

Air ambient temperature: 30°C

Ground ambient temperature: 20°C

Conductor operating temperature: 90°C

1. Where a conductor operates at a temperature exceeding 70°C, it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512.1.2).

2. Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4D4A) must be used (see Regulation 523.1).

The above table is in accordance with table 4E4A of the 17th Edition of IEE Wiring Regulations.

Steel Wire Armoured PVC Cable

Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area mm ²	Two Core Cable DC	Two Core Cable Single Phase AC mV/A/m			Three or Four Core Cable Three Phase AC mV/A/m		
1	2	3			4		
1.5	31.000	31.0			27.0		
2.5	19.000	19.0			16.0		
4.0	12.000	12.0			10.0		
6.0	7.900	7.9			6.8		
10.0	4.700	4.7			4.0		
16.0	2.900	2.9			2.5		
		r	x	z	r	x	z
25.0	1.850	1.85	0.160	1.900	1.600	0.140	1.650
35.0	1.350	1.35	0.155	1.350	1.150	0.135	1.150
50.0	0.980	0.99	0.155	1.000	0.860	0.135	0.870
70.0	0.670	0.67	0.150	0.069	0.590	0.130	0.600
95.0	0.490	0.50	0.150	0.052	0.430	0.130	0.450
120.0	0.390	0.40	0.145	0.420	0.340	0.130	0.370
150.0	0.310	0.32	0.145	0.350	0.280	0.125	0.300
185.0	0.250	0.26	0.145	0.290	0.220	0.125	0.260
240.0	0.195	0.20	0.140	0.240	0.175	0.125	0.210
300.0	0.155	0.16	0.140	0.210	0.140	0.120	0.185
400.0	0.120	0.13	0.140	0.190	0.115	0.120	0.165

Conductor operating temperature: 90°C

r = Resistive Component

x = Reactive Component

z = Impedance Value

The above table is in accordance with Table 4E4B of the 17th Edition of IEE Wiring Regulations.

For cables having conductors of 16mm² or less cross-sectional area their inductances can be ignored and (mV/A/m)_r values only are tabulated. For cables having conductors greater than 16mm² cross-sectional area, the impedance values are given as (mV/A/m)_r, together with the resistive component (mV/A/m)_z and the reactive component (mV/A/m)_x.

The above paragraph is extracted from Appendix 4 of the 17th Edition of IEE Wiring Regulations.

Steel Wire Armoured LSZH Cable



Application	SWA Cable – power and auxiliary control cables for use in power networks, underground, outdoor and indoor applications and in cable ducting. For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment.
Standards	BS6724
Conductor	Class 2 plain stranded copper conductor to BS EN 60228:2005 (previously BS6360)
Insulation	XLPE (Cross-Linked Polyethylene)
Bedding	LSZH (Low Smoke Zero Halogen)
Armouring	Single core: AWA (Aluminium Wire Armour) Multi-core: SWA (Steel Wire Armour)
Sheath	LSZH (Low Smoke Zero Halogen)
Sheath Colour	Black
Voltage Rating	600/1000V
Temperature Rating	0°C to +90°C
Minimum Bending Radius	1.5mm ² - 16mm ² : 6 x overall diameter 25mm ² and above: 8 x overall diameter

Steel Wire Armoured LSZH Cable

Core Identification

- 1 Core: Brown
- 2 Cores: Brown, Blue
- 3 Cores: Brown, Black, Grey
- 4 Cores: Blue, Brown, Black, Grey
- 5 Cores: Green/Yellow, Blue, Brown, Black, Grey

Alternative core identification:

White cores with Black numbers

Dimensions

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Diameter mm		Nominal Weight kg/Km
		Under Armour	Overall	

Aluminium Wire Armoured LSZH – 1 Core

1 x 50	1.0	12.7	17.5	800
1 x 70	1.1	14.7	20.2	960
1 x 95	1.1	16.6	22.3	1240
1 x 120	1.2	18.5	24.2	1510
1 x 150	1.4	20.8	27.4	1900
1 x 185	1.6	23.2	30.0	2320
1 x 240	1.7	26.0	32.8	2930
1 x 300	1.8	28.6	35.6	3580
1 x 400	2.0	32.4	40.4	4600
1 x 500	2.2	36.0	44.2	5770
1 x 630	2.4	40.0	48.8	7250
1 x 800	2.6	45.6	55.4	9381
1 x 1000	2.8	50.6	60.6	11540

BS6724 XLPE/LSZH/SWA/LSZH (Copper)

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Diameter mm		Nominal Weight kg/Km
		Under Armour	Overall	

Aluminium Wire Armoured LSZH – 2 Cores

2 x 1.5	0.6	7.3	12.1	302
2 x 2.5	0.7	8.5	13.6	346
2 x 4.0	0.7	9.4	14.7	410
2 x 6.0	0.7	10.5	15.9	499
2 x 10.0	0.7	12.3	18.0	648

Steel Wire Armoured LSZH Cable

BS6724 XLPE/LSZH/SWA/LSZH (Copper)

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Diameter mm		Nominal Weight kg/Km
		Under Armour	Overall	

Aluminium Wire Armoured LSZH – 2 Cores

2 x 16.0	0.7	14.3	20.4	978
2 x 25.0	0.9	14.7	20.4	1290
2 x 35.0	0.9	16.8	23.3	1500
2 x 50.0	1.0	19.0	25.8	1890
2 x 70.0	1.1	22.0	29.0	2450
2 x 95.0	1.1	25.1	33.1	3300
2 x 150.0	1.4	30.9	39.3	4750

Steel Wire Armoured LSZH – 3 Cores

3 x 1.5	0.6	7.8	12.6	330
3 x 2.5	0.7	9.2	14.1	390
3 x 4.0	0.7	10.0	15.3	464
3 x 6.0	0.7	11.2	16.6	568
3 x 10.0	0.7	13.1	19.5	866
3 x 16.0	0.7	15.3	21.6	1152
3 x 25.0	0.9	18.9	25.5	1800
3 x 35.0	0.9	21.3	28.0	2230
3 x 50.0	1.0	21.7	28.5	2490
3 x 70.0	1.1	25.2	32.2	3290
3 x 95.0	1.1	28.8	37.0	4440

Steel Wire Armoured LSZH – 4 Cores

4 x 1.5	0.6	8.5	13.5	365
4 x 2.5	0.7	9.9	15.0	438
4 x 4.0	0.7	11.0	16.4	532
4 x 6.0	0.7	12.3	18.7	764
4 x 10.0	0.7	14.5	21.1	1013
4 x 16.0	0.7	17.0	22.9	1360
4 x 25.0	0.9	21.0	27.6	2160
4 x 35.0	0.9	23.6	30.4	2690
4 x 50.0	1.0	25.0	32.0	3130
4 x 70.0	1.1	29.5	37.7	4500

Steel Wire Armoured LSZH Cable

BS6724 XLPE/LSZH/SWA/LSZH (Copper)

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Diameter mm		Nominal Weight kg/Km
		Under Armour	Overall	

Steel Wire Armoured LSZH – 4 Cores

4 x 95.0	1.1	33.3	41.7	5600
4 x 120.0	1.2	37.5	47.1	7400
4 x 150.0	1.4	41.6	51.4	8780
4 x 185.0	1.6	46.4	56.6	10630
4 x 240.0	1.7	52.6	63.0	13390

Steel Wire Armoured LSZH – 5 Cores

5 x 1.5	0.6	9.7	14.3	410
5 x 2.5	0.7	11.7	16.3	470
5 x 4.0	0.7	13.0	17.8	710
5 x 6.0	0.7	14.5	20.0	876
5 x 10.0	0.7	17.2	22.9	1165
5 x 16.0	0.7	20.0	26.6	1742
5 x 25.0	0.9	24.7	31.5	2323
5 x 35.0	0.9	27.8	34.8	2932
5 x 50.0	1.0	32.4	40.4	4192

Steel Wire Armoured LSZH – 7 Cores

7 x 1.5	0.6	10.2	15.2	470
7 x 2.5	0.7	12.3	17.1	600

Steel Wire Armoured LSZH – 12 Cores

12 x 1.5	0.6	13.7	19.4	780
12 x 2.5	0.7	16.3	22.4	1000

Steel Wire Armoured LSZH – 19 Cores

19 x 1.5	0.6	16.2	22.2	1000
19 x 2.5	0.7	19.9	26.6	1540

Steel Wire Armoured LSZH – 27 Cores

27 x 1.5	0.6	20.0	26.7	1500
27 x 2.5	0.7	24.0	30.7	1950

Steel Wire Armoured LSZH – 37 Cores

37 x 1.5	0.6	22.3	29.0	1800
37 x 2.5	0.7	26.9	33.8	2350

Steel Wire Armoured LSZH Cable

Conductors

Class 2 stranded conductors for single core and multi-core cables

1	2	3	4	5	6	7	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Metal-Coated Wires ohms/Km
1.50	7	-	6	-	-	-	12.1000
2.50	7	-	6	-	-	-	7.4100
4.00	7	-	6	-	-	-	4.6100
6.00	7	-	6	-	-	-	3.0800
10.00	7	7	6	6	-	-	1.8300
16.00	7	7	6	6	-	-	1.1500
25.00	7	7	6	6	6	6	0.7270
35.00	7	7	6	6	6	6	0.5240
50.00	19	19	6	6	6	6	0.3870
70.00	19	19	12	12	12	12	0.2680
95.00	19	19	15	15	15	15	0.1930
120.00	37	37	18	15	18	15	0.1530
150.00	37	37	18	15	18	15	0.1240
185.00	37	37	30	30	30	30	0.0991
240.00	37	37	34	30	34	30	0.0754
300.00	61	61	34	30	34	30	0.0601
400.00	61	61	53	53	53	53	0.0470

Table in accordance with BS EN 60228:2005 (previously BS6360).

Steel Wire Armoured LSZH Cable

Electrical Characteristics XLPE/LSZH/AWA/LSZH

Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm²	Reference Method C (clipped direct)		Reference Method F (in free air or on a perforated cable tray, horizontal or vertical)								
	Touching		Touching			Spaced by One Cable Diameter					
	2 Cables Single Phase AC or DC Flat Amps	3 or 4 Cables Three Phase AC Flat Amps	2 Cables Single Phase AC or DC Flat Amps	3 Cables Three Phase AC Flat Amps	3 Cables Three Phase AC Trefoil Amps	2 Cables DC Amps		2 Cables Single Phase AC Amps		3 or 4 Cables Three Phase AC Amps	
						Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
50	237	220	253	232	222	284	270	282	266	288	266
70	303	277	322	293	285	356	349	357	337	358	331
95	367	333	389	352	346	446	426	436	412	425	393
120	425	383	449	405	402	519	497	504	477	485	449
150	488	437	516	462	463	600	575	566	539	549	510
185	557	496	587	524	529	688	660	643	614	618	574
240	656	579	689	612	625	815	782	749	714	715	666
300	755	662	792	700	720	943	906	842	805	810	755
400	853	717	899	767	815	1137	1094	929	889	848	797
500	962	791	1016	851	918	1314	1266	1032	989	923	871
630	1082	861	1146	935	1027	1528	1474	1139	1092	992	940
800	1170	904	1246	987	1119	1809	1744	1204	1155	1042	978
1000	1261	961	1345	1055	1214	2100	2026	1289	1238	1110	1041

Ambient temperature: 30°C

Conductor operating temperature: 90°C

1. Where a conductor operates at a temperature exceeding 70°C it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512.1.2).

2. Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4D3A) must be used (see Regulation 523.1).

The above table is in accordance with Table 4E3A of the 17th Edition of IEE Wiring Regulations.

Steel Wire Armoured LSZH Cable

Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area mm²	2 Cables DC	Reference Method C & F (clipped direct, on tray or in free air)														
		2 Cables Single Phase AC mV/A/m						3 or 4 Cables Three Phase AC mV/A/m								
		Touching			Spaced*			Trefoil and Touching			Flat and Touching			Flat and Spaced*		
1	2	3			4			5			6			7		
		r	x	z	r	x	z	r	x	z	r	x	z	r	x	z
50	0.980	0.990	0.210	1.000	0.980	0.29	1.00	0.860	0.180	0.870	0.840	0.250	0.88	0.840	0.330	0.90
70	0.670	0.680	0.200	0.710	0.690	0.29	0.75	0.590	0.170	0.620	0.600	0.250	0.65	0.620	0.320	0.70
95	0.490	0.510	0.195	0.550	0.530	0.28	0.60	0.440	0.170	0.470	0.460	0.240	0.52	0.490	0.310	0.58
120	0.390	0.410	0.190	0.450	0.430	0.27	0.51	0.350	0.165	0.390	0.380	0.240	0.44	0.410	0.300	0.51
150	0.310	0.330	0.185	0.380	0.360	0.27	0.45	0.290	0.160	0.330	0.310	0.230	0.39	0.340	0.290	0.45
185	0.250	0.270	0.185	0.330	0.300	0.26	0.40	0.230	0.160	0.280	0.260	0.230	0.34	0.290	0.290	0.41
240	0.195	0.210	0.180	0.280	0.240	0.26	0.35	0.180	0.155	0.240	0.210	0.220	0.30	0.240	0.280	0.37
300	0.155	0.170	0.175	0.250	0.195	0.25	0.32	0.145	0.150	0.210	0.170	0.220	0.28	0.200	0.270	0.34
400	0.115	0.145	0.170	0.220	0.180	0.24	0.30	0.125	0.150	0.195	0.160	0.210	0.27	0.200	0.270	0.33
500	0.093	0.125	0.170	0.210	0.165	0.24	0.29	0.105	0.145	0.180	0.145	0.200	0.25	0.190	0.240	0.31
630	0.073	0.105	0.165	0.195	0.150	0.23	0.27	0.092	0.145	0.170	0.135	0.195	0.24	0.175	0.230	0.29
800	0.056	0.090	0.160	0.190	0.145	0.23	0.27	0.086	0.140	0.165	0.130	0.180	0.23	0.175	0.195	0.26
1000	0.045	0.092	0.155	0.180	0.140	0.21	0.25	0.080	0.135	0.155	0.125	0.170	0.21	0.165	0.180	0.24

Conductor operating temperature: 90°C

* Spacings larger than one cable diameter will result in a larger voltage drop.

r = Resistive Component

x = Reactive Component

z = Impedance Value

The above table is in accordance with Table 4E3B of the 17th Edition of IEE Wiring Regulations.

For cables having conductors of 16mm² or less cross-sectional area their inductances can be ignored and

(mV/A/m)_r values only are tabulated. For cables having conductors greater than 16mm² cross-sectional area, the impedance values are given as (mV/A/m)_z, together with the resistive component (mV/A/m)_r and the reactive component (mV/A/m)_x.

The above paragraph is extracted from Appendix 4 of the 17th Edition of IEE Wiring Regulations.

Steel Wire Armoured LSZH Cable

Electrical Characteristics XLPE/LSZH/AWA/LSZH

Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm ²	Reference Method C (clipped direct) Amps		Reference Method E (in free air or on a perforated cable tray, horizontal or vertical) Amps		Reference Method D (direct in ground or in ducting in ground, in or around buildings) Amps	
	1 Two Core Cable Single Phase AC or DC	1 Three or 1 Four Core Cable Three Phase AC	1 Two Core Cable Single Phase AC or DC	1 Three or 1 Four Core Cable Three Phase AC	1 Two Core Cable Single Phase AC or DC	1 Three or 1 Four Core Cable Three Phase AC
1	2	3	4	5	6	7
1.5	27	23	29	25	25	21
2.5	36	31	39	33	33	28
4.0	49	42	52	44	43	36
6.0	62	53	66	56	53	44
10.0	85	73	90	78	71	58
16.0	110	94	115	99	91	75
25.0	146	124	152	131	116	96
35.0	180	154	188	162	139	115
50.0	219	187	228	197	164	135
70.0	279	238	291	251	203	167
95.0	338	289	354	304	239	197
120.0	392	335	410	353	271	223
150.0	451	386	472	406	306	251
185.0	515	441	539	463	343	281
240.0	607	520	636	546	395	324
300.0	698	599	732	628	446	365
400.0	787	673	847	728	-	-

Air ambient temperature: 30°C

Ground ambient temperature: 20°C

Conductor operating temperature: 90°C

1. Where a conductor operates at a temperature exceeding 70°C, it must be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512.1.2).

2. Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C thermoplastic insulated cables (Table 4D4A) must be used (see Regulation 523.1).

The above table is in accordance with table 4E4A of the 17th Edition of IEE Wiring Regulations.

Steel Wire Armoured LSZH Cable

Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area mm ²	Two Core Cable DC	Two Core Cable Single Phase AC mV/A/m			Three or Four Core Cable Three Phase AC mV/A/m		
1	2	3			4		
1.5	31.000	31.0			27.0		
2.5	19.000	19.0			16.0		
4.0	12.000	12.0			10.0		
6.0	7.900	7.9			6.8		
10.0	4.700	4.7			4.0		
16.0	2.900	2.9			2.5		
		r	x	z	r	x	z
25.0	1.850	1.85	0.160	1.900	1.600	0.140	1.650
35.0	1.350	1.35	0.155	1.350	1.150	0.135	1.150
50.0	0.980	0.99	0.155	1.000	0.860	0.135	0.870
70.0	0.670	0.67	0.150	0.069	0.590	0.130	0.600
95.0	0.490	0.50	0.150	0.052	0.430	0.130	0.450
120.0	0.390	0.40	0.145	0.420	0.340	0.130	0.370
150.0	0.310	0.32	0.145	0.350	0.280	0.125	0.300
185.0	0.250	0.26	0.145	0.290	0.220	0.125	0.260
240.0	0.195	0.20	0.140	0.240	0.175	0.125	0.210
300.0	0.155	0.16	0.140	0.210	0.140	0.120	0.185
400.0	0.120	0.13	0.140	0.190	0.115	0.120	0.165

Conductor operating temperature: 90°C

r = Resistive Component

x = Reactive Component

z = Impedance Value

The above table is in accordance with Table 4E4B of the 17th Edition of IEE Wiring Regulations.

For cables having conductors of 16mm² or less cross-sectional area, their inductances can be ignored and (mV/A/m)_r values only are tabulated. For cables having conductors greater than 16mm² cross-sectional area, the impedance values are given as (mV/A/m)_z, together with the resistive component (mV/A/m)_r and the reactive component (mV/A/m)_x.

The above paragraph is extracted from Appendix 4 of the 17th Edition of IEE Wiring Regulations.

11kV XLPE LSZH Cable



Application	Power cables for use in power networks, underground, outdoors and in cable ducting. For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment.
Standards	BS7835
Conductor	Class 2 stranded plain copper conductor to BS EN 60228:2005 (previously BS6360)
Conductor Screen	Semi-conducting material
Insulation	XLPE (Cross-Linked Polyethylene) Type GP8 to BS7655
Insulation Screen	Semi-conducting material
Metallic Screen	Individual and overall copper tape screen to BS6622
Filler	PETP (Polyethylene Terephthalate) fibres
Separator	Binding tape
Bedding	LSZH (Low Smoke Zero Halogen)
Armouring	Single core: AWA (Aluminium Wire Armour) Multi-core: SWA (Steel Wire Armour)
Sheath	LSZH (Low Smoke Zero Halogen)
Sheath Colour	Red or Black

11kV XLPE LSZH Cable

Voltage Rating	6350/11000V
Temperature Rating	0°C to +70°C
Combustion Characteristics	Oxygen index: 35 Temperature index: 280°C HCL emission: 0.5% in accordance with BS EN 50267-2-1 Low Smoke classification based on 3 metre cube test. Completed cables comply with the requirements of fire test BS4066-3 Category 3.
Minimum Bending Radius	Single Cores: 15 x overall diameter Three Cores: 12 x overall diameter (Single Cores 12 x overall diameter and 3 cores 10 x overall diameter where bands are positioned adjacent to joint or terminations provided that the bending is carefully controlled by the use of a former.)

11kV XLPE LSZH Cable

Dimensions

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Diameter mm			Nominal Weight kg/Km
	Under Armour	Over Armour	Overall	
1 x 50	21.7	24.9	28.5	1200
1 x 70	23.0	26.2	30.0	1500
1 x 95	24.7	27.9	31.7	1600
1 x 120	26.7	29.9	33.9	2100
1 x 150	27.5	31.5	35.7	2500
1 x 185	29.3	33.3	37.5	2900
1 x 240	31.6	35.6	40.0	3600
1 x 300	34.6	38.6	43.0	4300
1 x 400	37.0	41.0	45.8	5200
1 x 500	40.5	45.5	50.5	6500
1 x 630	44.6	49.6	54.8	8000
1 x 800	48.8	53.8	59.2	9850
1 x 1000	53.5	58.5	64.3	12100
3 x 25	39.0	44.0	48.8	4300
3 x 35	41.6	46.6	51.6	4700
3 x 50	44.4	49.4	54.6	5300
3 x 70	48.1	53.1	58.5	6300
3 x 95	52.0	57.0	62.6	7300
3 x 120	55.6	60.6	66.6	8400
3 x 150	58.6	63.6	69.8	9600
3 x 185	62.7	67.7	74.1	11000
3 x 240	68.1	74.4	81.2	14000
3 x 300	73.5	79.8	87.0	16600

11kV XLPE LSZH Cable

Conductors

Class 2 stranded conductors for single core and multi-core cables

1	2	3	4	5	6	7	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires ohms/Km
50.00	19	19	6	6	6	6	0.3870
70.00	19	19	12	12	12	12	0.2680
95.00	19	19	15	15	15	15	0.1930
120.00	37	37	18	15	18	15	0.1530
150.00	37	37	18	15	18	15	0.1240
185.00	37	37	30	30	30	30	0.0991
240.00	37	37	34	30	34	30	0.0754
300.00	61	61	34	30	34	30	0.0601
400.00	61	61	53	53	53	53	0.0470
500.00	61	61	53	53	53	53	0.0366
630.00	91	91	53	53	53	53	0.0283
800.00	91	91	53	53	-	-	0.0221
1000.00	91	91	53	53	-	-	0.0176

Table in accordance with BS EN 60228:2005 (previously BS6360).

11kV XLPE LSZH Cable

Electrical Characteristics

Copper Conductor Dimensions and Current Carrying Capacity (amperes)

No. of Cores x Nominal Cross Sectional Area	Continuous Current Rating in Ground Amps		Continuous Current Rating in Ducts Amps		Continuous Current Rating in Air Amps	
	Trefoil	Flat	Trefoil	Flat	Trefoil	Flat
# x mm ²						
1 x 50	220	230	220	220	250	300
1 x 70	270	280	260	270	310	370
1 x 95	320	335	305	325	375	460
1 x 120	360	380	340	370	430	530
1 x 150	410	430	375	410	490	600
1 x 185	455	485	410	460	550	690
1 x 240	520	560	470	540	650	820
1 x 300	580	640	500	610	740	940
1 x 400	650	730	530	690	840	1100
1 x 500	710	830	570	780	930	1280
1 x 630	760	940	620	890	1040	1480
1 x 800	810	1060	660	990	1140	1690
1 x 1000	860	1170	690	1090	1230	1900
3 x 25	140	140	125	125	145	145
3 x 35	170	170	150	150	175	175
3 x 50	210	210	180	180	220	220
3 x 70	250	250	215	215	270	270
3 x 95	300	300	255	255	330	330
3 x 120	340	340	290	290	380	380
3 x 150	380	380	330	330	430	430
3 x 185	430	430	370	370	490	490
3 x 240	500	500	430	430	570	570
3 x 300	540	540	470	470	650	650

11kV XLPE LSZH Cable

Correction Factors

Air Temperature	25°C	30°C	35°C	40°C	45°C	50°C	55°C
Correction Factor	1.00	0.96	0.92	0.88	0.83	0.78	0.73

Ground Temperature	10°C	15°C	20°C	25°C	30°C	35°C	40°C
Correction Factor	1.03	1.00	0.97	0.93	0.89	0.86	0.82

Ground Thermal Resistivity	0.9	1.0	1.2	1.5	2.0	2.5	3.0
Correction Factor	1.06	1.04	1.00	0.92	0.82	0.74	0.68

Depth of Laying m	0.80	1.00	1.25	1.50	1.75	2.00	2.50
Correction Factor	1.00	0.97	0.95	0.94	0.93	0.91	0.90

11kV XLPE PVC Cable



Application	Power cables for use in power networks, underground and in cable ducting.
Standards	BS6622
Conductor	Class 2 stranded plain copper conductor to BS EN 60228:2005 (previously BS6360)
Conductor Screen	Semi-conducting material
Insulation	XLPE (Cross-Linked Polyethylene) Type GP8 to BS7655
Insulation Screen	Semi-conducting material
Metallic Screen	Individual and overall copper tape screen to BS6622
Filler	PETP (Polyethylene Terephthalate) fibres
Separator	Binding tape
Bedding	PVC (Polyvinyl Chloride) Type TM1 to BS7655
Armouring	Single core: AWA (Aluminium Wire Armour) Multi-core: SWA (Steel Wire Armour)
Sheath	PVC (Polyvinyl Chloride) Type TM1 to BS7655
Sheath Colour	Red or Black
Voltage Rating	6350/11000V
Temperature Rating	0°C to +70°C

11kV XLPE PVC Cable

Minimum Bending Radius

Single Cores: 15 x overall diameter
 Three Cores: 12 x overall diameter

(Single Cores 12 x overall diameter and 3 cores 10 x overall diameter where bands are positioned adjacent to joint or terminations provided that the bending is carefully controlled by the use of a former.)

Dimensions

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Diameter mm			Nominal Weight kg/Km
	Under Armour	Over Armour	Overall	
1 x 50	21.7	24.9	28.5	1200
1 x 70	23.0	26.2	30.0	1500
1 x 95	24.7	27.9	31.7	1600
1 x 120	26.7	29.9	33.9	2100
1 x 150	27.5	31.5	35.7	2500
1 x 185	29.3	33.3	37.5	2900
1 x 240	31.6	35.6	40.0	3600
1 x 300	34.6	38.6	43.0	4300
1 x 400	37.0	41.0	45.8	5200
1 x 500	40.5	45.5	50.5	6500
1 x 630	44.6	49.6	54.8	8000
1 x 800	48.8	53.8	59.2	9850
1 x 1000	53.5	58.5	64.3	12100
3 x 25	39.0	44.0	48.8	4300
3 x 35	41.6	46.6	51.6	4700
3 x 50	44.4	49.4	54.6	5300
3 x 70	48.1	53.1	58.5	6300
3 x 95	52.0	57.0	62.6	7300
3 x 120	55.6	60.6	66.6	8400
3 x 150	58.6	63.6	69.8	9600
3 x 185	62.7	67.7	74.1	11000
3 x 240	68.1	74.4	81.2	14000
3 x 300	73.5	79.8	87.0	16600

11kV XLPE PVC Cable

Conductors

Class 2 stranded conductors for single Core and multi-core cables

1	2	3	4	5	6	7	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires ohms/Km
50.00	19	19	6	6	6	6	0.3870
70.00	19	19	12	12	12	12	0.2680
95.00	19	19	15	15	15	15	0.1930
120.00	37	37	18	15	18	15	0.1530
150.00	37	37	18	15	18	15	0.1240
185.00	37	37	30	30	30	30	0.0991
240.00	37	37	34	30	34	30	0.0754
300.00	61	61	34	30	34	30	0.0601
400.00	61	61	53	53	53	53	0.0470
500.00	61	61	53	53	53	53	0.0366
630.00	91	91	53	53	53	53	0.0283
800.00	91	91	53	53	-	-	0.0221
1000.00	91	91	53	53	-	-	0.0176

Table in accordance with BS EN 60228:2005 (previously BS6360).

11kV XLPE PVC Cable

Electrical Characteristics

Copper Conductor Dimensions and Current Carrying Capacity (amperes)

No. of Cores x Nominal Cross Sectional Area	Continuous Current Rating in Ground Amps		Continuous Current Rating in Ducts Amps		Continuous Current Rating in Air Amps	
	Trefoil	Flat	Trefoil	Flat	Trefoil	Flat
1 x 50	220	230	220	220	250	300
1 x 70	270	280	260	270	310	370
1 x 95	320	335	305	325	375	460
1 x 120	360	380	340	370	430	530
1 x 150	410	430	375	410	490	600
1 x 185	455	485	410	460	550	690
1 x 240	520	560	470	540	650	820
1 x 300	580	640	500	610	740	940
1 x 400	650	730	530	690	840	1100
1 x 500	710	830	570	780	930	1280
1 x 630	760	940	620	890	1040	1480
1 x 800	810	1060	660	990	1140	1690
1 x 1000	860	1170	690	1090	1230	1900
3 x 25	140	140	125	125	145	145
3 x 35	170	170	150	150	175	175
3 x 50	210	210	180	180	220	220
3 x 70	250	250	215	215	270	270
3 x 95	300	300	255	255	330	330
3 x 120	340	340	290	290	380	380
3 x 150	380	380	330	330	430	430
3 x 185	430	430	370	370	490	490
3 x 240	500	500	430	430	570	570
3 x 300	540	540	470	470	650	650

11kV XLPE PVC Cable

Correction Factors

Air Temperature	25°C	30°C	35°C	40°C	45°C	50°C	55°C
Correction Factor	1.00	0.96	0.92	0.88	0.83	0.78	0.73

Ground Temperature	10°C	15°C	20°C	25°C	30°C	35°C	40°C
Correction Factor	1.03	1.00	0.97	0.93	0.89	0.86	0.82

Ground Thermal Resistivity	0.9	1.0	1.2	1.5	2.0	2.5	3.0
Correction Factor	1.06	1.04	1.00	0.92	0.82	0.74	0.68

Depth of Laying m	0.80	1.00	1.25	1.50	1.75	2.00	2.50
Correction Factor	1.00	0.97	0.95	0.94	0.93	0.91	0.90

33kV Cable



Application	Power cables for use in power networks, underground and in cable ducting.
Standards	BS6622
Conductor	Class 2 stranded plain copper conductor to BS EN 60228:2005 (previously BS6360)
Conductor Screen	Semi-conducting material
Insulation	XLPE (Cross-Linked Polyethylene) Type GP8 to BS7655
Insulation Screen	Semi-conducting material
Metallic Screen	Individual and overall copper tape screen to BS6622
Filler	PETP (Polyethylene Terephthalate) fibres
Separator	Binding tape
Bedding	PVC (Polyvinyl Chloride) Type TM1 to BS7655
Armouring	Single core: AWA (Aluminium Wire Armour) Multi-core: SWA (Steel Wire Armour)
Sheath	PVC (Polyvinyl Chloride) Type TM1 to BS7655
Sheath Colour	Red or Black
Voltage Rating	19000/33000V

33kV Cable

Temperature Rating 0°C to +70°C

Minimum Bending Radius Single Cores: 15 x overall diameter
Three Cores: 12 x overall diameter

(Single cores 12 x overall diameter and 3 cores 10 x overall diameter where bands are positioned adjacent to joint or terminations provided that the bending is carefully controlled by the use of a former.)

Dimensions

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Diameter mm			Nominal Weight kg/Km
	Under Armour	Over Armour	Overall	
1 x 70	32.6	36.6	41.0	2300
1 x 95	34.3	38.3	42.9	2650
1 x 120	35.9	39.9	44.5	3000
1 x 150	37.5	42.5	47.3	3500
1 x 185	39.3	44.3	49.3	4000
1 x 240	41.7	46.7	51.7	4650
1 x 300	44.2	49.2	54.4	5450
1 x 400	47.3	52.3	57.7	6350
1 x 500	50.5	55.5	61.1	7600
1 x 630	54.2	59.2	65.0	9150
1 x 800	60.5	65.5	71.6	11100
1 x 1000	65.0	70.0	76.5	13400
3 x 50	65.1	71.4	78.2	9150
3 x 70	68.8	75.1	82.1	10300
3 x 95	72.6	78.9	86.1	11600
3 x 120	76.3	82.6	90.0	12800
3 x 150	79.3	85.6	93.2	14050
3 x 185	83.4	89.7	97.5	15650
3 x 240	88.8	95.1	103.3	18200
3 x 300	93.9	100.2	108.8	21100
3 x 400	100.8	107.1	116.1	24200

33kV Cable

Conductors

Copper Conductors (Insulated Armoured Cables to BS6622)

Current Carrying Capacity (amperes)

No. of Cores x Nominal Cross Sectional Area	Continuous Current Rating in Ground Amps		Continuous Current Rating in Ducts Amps		Continuous Current Rating in Air Amps	
	Trefoil	Flat	Trefoil	Flat	Trefoil	Flat
# x mm ²						
1 x 70	270	280	260	270	310	370
1 x 95	320	335	305	325	375	460
1 x 120	360	380	340	370	430	530
1 x 150	410	430	375	410	490	600
1 x 185	455	485	410	460	550	690
1 x 240	520	560	470	540	650	820
1 x 300	580	640	500	610	740	940
1 x 400	650	730	530	690	840	1100
1 x 500	710	830	570	780	930	1280
1 x 630	760	940	620	890	1040	1480
1 x 800	810	1060	660	990	1140	1690
1 x 1000	860	1170	690	1090	1230	1900
3 x 50	210	210	180	180	220	220
3 x 70	250	250	215	215	270	270
3 x 95	300	300	255	255	330	330
3 x 120	340	340	290	290	380	380
3 x 150	380	380	330	330	430	430
3 x 185	430	430	370	370	490	490
3 x 240	500	500	430	430	570	570
3 x 300	540	540	470	470	650	650
3 x 400	600	600	530	530	740	740

33kV Cable

Conductors

Class 2 stranded conductors for single Core and multi-core cables

1	2	3	4	5	6	7	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Plain Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires ohms/Km
70.00	19	19	12	12	12	12	0.2680
95.00	19	19	15	15	15	15	0.1930
120.00	37	37	18	15	18	15	0.1530
150.00	37	37	18	15	18	15	0.1240
185.00	37	37	30	30	30	30	0.0991
240.00	37	37	34	30	34	30	0.0754
300.00	61	61	34	30	34	30	0.0601
400.00	61	61	53	53	53	53	0.0470

Table in accordance with BS EN 60228:2005 (previously BS6360).

Correction Factors

Air Temperature	25°C	30°C	35°C	40°C	45°C	50°C	55°C
Correction Factor	1.00	0.96	0.92	0.88	0.83	0.78	0.73

Ground Temperature	10°C	15°C	20°C	25°C	30°C	35°C	40°C
Correction Factor	1.03	1.00	0.97	0.93	0.89	0.86	0.82

Ground Thermal Resistivity	0.9	1.0	1.2	1.5	2.0	2.5	3.0
Correction Factor	1.06	1.04	1.00	0.92	0.82	0.74	0.68

Depth of Laying m	0.80	1.00	1.25	1.50	1.75	2.00	2.50
Correction Factor	1.00	0.97	0.95	0.94	0.93	0.91	0.90

Aluminium Power Cable



Application	BR880 solid sector-shaped conductors for trackside signalling power supplies.
Standards	BR880, BS5467, BS6346
Conductor	Sector shaped solid aluminium
Insulation	XLPE (Cross-Linked Polyethylene) Type GP8 to BS7655 or PVC (Polyvinyl Chloride) Type TI 1 to BS7655
Separator	PETP (Polyethylene Terephthalate)
Sheath	PVC (Polyvinyl Chloride) Type 9 to BS7655
Sheath Colour	Black
Voltage Rating	600/1000V
Limited Use	Distribution of signalling power only. (Not suitable for general signalling use.)
Temperature Rating	+70°C (BS6346) or +90°C (BS5467)
Core Identification	2 Cores: Red, Black 4 Cores: Red, Yellow, Blue, Black Effective 31 March 2006 2 Cores: Brown, Blue 4 Cores: Blue, Brown, Black, Grey

Aluminium Power Cable

Dimensions

Rail Catalogue Number	No. of Cores x Nominal Conductor Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Thickness of Sheath mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
006/142419	2 x 16	1.0	1.8	14.3	420
006/142519	2 x 25	1.2	1.8	16.6	455
006/142609	2 x 35	1.2	1.8	18.0	525
006/142629	2 x 50	1.4	1.8	20.4	620
006/142639	2 x 70	1.4	1.9	22.8	840
006/142644	2 x 95	1.6	2.0	26.2	1020
006/151469	4 x 70	1.4	2.0	30.6	1750
-	4 x 95	1.6	2.2	35.5	2100

Conductors

Class 1 solid conductors for single core and multi-core cables

1	4
Nominal Cross Sectional Area mm ²	Maximum Resistance of Conductor at 20°C
	Aluminium and Aluminium Alloy Conductors, Circular or Shaped ^c ohms/Km
16.00	1.9100 ^a
25.00	1.2000 ^a
35.00	0.8680 ^a
50.00	0.6410
70.00	0.4430
95.00	0.3200 ^d

Table in accordance with BS EN 60228:2005 (previously BS6360).

^a Aluminium conductors 10mm² to 35mm² circular only; (see 5.1.1 c). See note to 5.1.2

^c For single core cables, four sectoral shaped conductors may be assembled into a single circular conductor.

^d The maximum resistance of the assembled conductor shall be 25% of that of the individual component conductors.

MV Power Cable



Application	Cable used to distribute three phase a.c. electrical power supplies at nominal system voltages of 33kV to traction substations on D.C. electrified lines.
Standards	NR/PS/ELP/00008 (formerly RT/E/PS/00008) BS6622, BS6234, BS7454, IEC 60502-2, IEC60840
Conductor	185mm ² : Class 1 circular solid aluminium to BS EN 60228:2005 (previously BS6360) 300mm ² : Class 2 compact circular stranded plain copper to BS EN 60228:2005 (previously BS6360)
Conductor Screen	Extruded semi-conducting XLPE (Cross-Linked Polyethylene), solidly bonded
Insulation	XLPE (Cross-Linked Polyethylene)
Insulation Screen	Extruded semi-conducting XLPE (Cross-Linked Polyethylene), solidly bonded, strippable
Separator	Water swellable semi-conducting tape
Screen	Copper wire screen, helically wound with equalising copper tape
Separator	Water swellable tape
Sheath	MDPE (Medium Density Polyethylene) Type TS2 (Graphite Coated)
Sheath Colour	Black
Voltage Rating	19000/33000V

MV Power Cable

Temperature Rating +90°C

Minimum Bending Radius 15 x overall diameter
(12 x overall diameter adjacent to joints or terminations provided that bending is carefully controlled by use of former.)

Dimensions

Rail Catalogue Number	No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Conductor Screen mm	Nominal Thickness of Insulation mm	Nominal Thickness of Insulation Screen mm	Nominal Overall Diameter mm	Nominal Weight kg?Km
006/122514	1 x 185	0.9	8.0	0.6	45.0	2200
006/122511	1 x 300	0.9	8.0	0.6	50.0	4500

Conductors

Class 1 solid conductors for single core and multi-core cables

1	4
Nominal Cross Sectional Area mm ²	Maximum Resistance of the Conductor at 20°C
	Aluminium Conductors, Circular ohms/Km
185.00	0.1640

Table in accordance with BS EN 60228:2005 (previously BS6360).

Class 2 stranded conductors for single core and multi-core cables

1	4	5	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor		Maximum Resistance of Conductor at 20°C
	Circular Compacted		Annealed Copper Conductor
	Cu	Al	Plain Wires ohms/Km
300.00	34	30	0.0601

Table in accordance with BS EN 60228:2005 (previously BS6360).

MV Power Cable

Electrical Characteristics

Nominal Cross Sectional Area	Continuous Current Rating in Ground Amps		Continuous Current Rating in Air Amps		Capacitance μF/km	Inductance mH/km		Short Circuit Rating for 1 sec Kilo Amps	
	Trefoil	Flat	Trefoil	Flat		Trefoil	Flat	Conductor	Screen
185	385	390	435	470	0.205	0.40	0.56	17.1	11.0
300	640	630	730	780	0.243	0.37	0.53	43.2	11.0

Permitted current rating of cables is calculated according to IEC 287, considering the following data:

Ground Laying Depth	0.7m
Specific Resistance of Ground	1°km/W
Ground Temperature	15°C
Ambient Temperature in Free Air	25°C
Maximum Conductor Temperature	90°C
Conductor Temperature of Short Circuit Current	250°C
Screen Temperature of Short Circuit Current	350°C

Trackfeeder Cable



Application	Provides the 650/750 volt D.C. supply from traction substations and track paralleling huts to conductor rails, negative cable connections and where appropriate, bonding.
Standards	NR/PS/ELP/21101 (formerly RT/E/S/21101)
Conductor	Class 2 stranded aluminium or tinned copper to BS EN 60228:2005 (previously BS6360)
Separator	PETP (Polyethylene Terephthalate)
Sheath	CSP (Chlorosulphonated Polyethylene) Type RS4 to BS6899
Sheath Colour	Black
Voltage Rating	650/750V
Temperature Rating	-25°C to +85°C
Minimum Bending Radius	Aluminium conductor: 10 x overall diameter Copper conductor: 8 x overall diameter

Trackfeeder Cable

Dimensions

Positive Track Cables

Rail Catalogue Number	Nominal Cross Sectional Area mm ²	Conductor Material	No. and Nominal Diameter of Strands # / mm	Nominal Diameter of Conductor mm	Nominal Overall Diameter mm	Assigned Continuous Current Rating Amps
006/116610	1000	Aluminium	127/3.20	41.6	53.0	1500
006/116612	630	Copper	127/2.52	32.8	44.2	1500
006/132840	500	Aluminium	61/3.20	28.8	40.2	800

Negative Track Cables

Rail Catalogue Number	Nominal Cross Sectional Area mm ²	Conductor Material	No. and Nominal Diameter of Strands # / mm	Nominal Diameter of Conductor mm	Nominal Overall Diameter mm	Assigned Continuous Current Rating Amps
006/132991	800	Aluminium	127/2.85	37.1	48.5	1200
006/132990	240	Aluminium	61/2.25	20.3	28.3	550
006/132340	161	Copper	91/1.53	16.8	24.8	550
006/116601	150	Aluminium	37/2.25	15.8	19.4	430

6491B Cable



Application	Suitable for use in conduit and for fixed, protected installation. For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment.
Standards	BS7211
Conductor	Class 2 stranded plain copper conductors to BS EN 60228:2005 (previously BS6360)
Insulation	LSZH (Low Smoke Zero Halogen)
Insulation Colour	Black, Blue, Green/Yellow, Red, Yellow, White, Violet, Brown, Grey, Orange, Pink
Voltage Rating	450/750V
Temperature Rating	0°C to +90°C
Minimum Bending Radius	Up to 10mm ² : 3 x overall diameter 10mm ² to 25mm ² : 4 x overall diameter Above 25mm ² : 5 x overall diameter

6491B Cable

Dimensions

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
1 x 1.5	0.7	3.4	22
1 x 2.5	0.8	4.2	35
1 x 4.0	0.8	4.8	50
1 x 6.0	0.8	5.4	72
1 x 10.0	1.0	6.8	121
1 x 16.0	1.0	8.0	182
1 x 25.0	1.2	9.8	285
1 x 35.0	1.2	11.0	390
1 x 95.0	1.6	17.0	980
1 x 120.0	1.6	19.0	1220
1 x 150.0	1.8	21.0	1500
1 x 185.0	2.2	23.5	1910
1 x 240.0	2.2	26.5	2490
1 x 300.0	2.4	29.5	3100
1 x 400.0	2.6	33.5	3950
1 x 500.0	2.8	37.0	5000
1 x 630.0	2.8	41.0	6350

6491B Cable

Conductors

Class 2 stranded conductors for single core and multi-core cables

1	2	3	4	5	6	7	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires ohms/Km
1.50	7	-	6	-	-	-	12.1000
2.50	7	-	6	-	-	-	7.4100
4.00	7	-	6	-	-	-	4.6100
6.00	7	-	6	-	-	-	3.0800
10.00	7	7	6	6	-	-	1.8300
16.00	7	7	6	6	-	-	1.1500
25.00	7	7	6	6	6	6	0.7270
35.00	7	7	6	6	6	6	0.5240
95.00	19	19	15	15	15	15	0.1930
120.00	37	37	18	15	18	15	0.1530
150.00	37	37	18	15	18	15	0.1240
185.00	37	37	30	30	30	30	0.0991
240.00	37	37	34	30	34	30	0.0754
300.00	61	61	34	30	34	30	0.0601
400.00	61	61	53	53	53	53	0.0470
500.00	61	61	53	53	53	53	0.0366
600.00	91	91	53	53	53	53	0.0283

Table in accordance with BS EN 60228:2005 (previously BS6360).

6491B Cable

Electrical Characteristics

Current Carrying Capacity (amperes)

Nominal Cross Sectional Area mm ²	Reference Method 4 (enclosed in conduit in thermally insulating wall etc)		Reference Method 3 (enclosed in conduit on a wall or in trunking etc.)		Reference Method 1 (clipped direct)		Reference Method 11 (on a perforated cable tray horizontal or vertical)		Reference Method 12 (free air)		
	2 Cables Single Phase AC or DC Amps	3 or 4 Cables Three Phase AC Amps	2 Cables Single Phase AC or DC Amps	3 or 4 Cables Three Phase AC Amps	2 Cables Single Phase AC or DC Flat and Touching Amps	3 or 4 Cables Three Phase AC Flat and Touching or Trefoil Amps	2 Cables Single Phase AC or DC Flat and Touching Amps	3 or 4 Cables Three Phase AC Flat and Touching or Trefoil Amps	Horizontal Flat Spaced	Vertical Flat Spaced	Trefoil
1	2	3	4	5	6	7	8	9	10	11	12
1.0	14	13	17	15	19	17.5	-	-	-	-	-
1.5	18	17	22	19	25	23.0	-	-	-	-	-
2.5	24	23	30	26	34	31.0	-	-	-	-	-
4.0	33	30	40	35	46	41.0	-	-	-	-	-
6.0	43	39	51	45	59	54.0	-	-	-	-	-
10.0	58	53	71	63	81	74.0	-	-	-	-	-
16.0	76	70	95	85	109	99.0	-	-	-	-	-
25.0	100	91	126	111	143	130.0	158	140	183	163	138
35.0	124	111	156	138	176	161.0	195	176	226	203	171
50.0	149	135	189	168	228	209.0	293	215	274	246	209
70.0	189	170	240	214	293	268.0	308	279	351	318	270
95.0	228	205	290	259	355	326.0	375	341	426	389	330
120.0	263	235	336	299	413	379.0	436	398	495	453	385
150.0	300	270	375	328	476	436.0	505	461	570	524	445
185.0	341	306	426	370	545	500.0	579	530	651	600	511
240.0	400	358	500	433	644	590.0	686	630	769	711	606
300.0	459	410	573	493	743	681.0	794	730	886	824	701
400.0	-	-	683	584	868	793.0	915	849	1065	994	820
500.0	-	-	783	666	990	904.0	1044	973	1228	1150	936
630.0	-	-	900	764	1130	1033.0	1191	1115	1423	1338	1069
800.0	-	-	-	-	1288	1179.0	1358	1275	1581	1485	1214
1000.0	-	-	-	-	1443	1323.0	1520	1436	1775	1671	1349

Ambient temperature: 30°C

Conductor operating temperature: 90°C

6491B Cable

Voltage Drop (per ampere per metre)

Nominal Cross - Sectional Area mm ²	2 Cables, Single Phase AC									
	2 Cables DC mV/A/m	Reference Methods 3 & 4 (enclosed in conduit etc, in or on a wall) mV/A/m			Reference Methods 1 & 11 (clipped direct or on trays, touching) mV/A/m			Reference Method 12 (spaced*) mV/A/m		
1	2	3			4			5		
1.0	46.0		46.0			46.0			46.0	
1.5	31.0		31.0			31.0			31.0	
2.5	19.0		19.0			19.0			19.0	
4.0	12.0		12.0			12.0			12.0	
6.0	7.9		7.9			7.9			7.9	
10.0	4.7		4.7			4.7			4.7	
16.0	2.9		2.9			2.9			2.9	
		r	x	z	r	x	z	r	x	z
25.0	1.850	1.850	0.31	1.90	1.850	0.190	1.850	1.850	0.28	1.85
35.0	1.350	1.350	0.29	1.35	1.350	0.180	1.350	1.350	0.27	1.35
50.0	0.990	1.000	0.29	1.05	0.990	0.180	1.000	0.990	0.27	1.00
70.0	0.680	0.700	0.28	0.75	0.680	0.175	0.710	0.680	0.26	0.73
95.0	0.490	0.510	0.27	0.58	0.490	0.170	0.520	0.490	0.26	0.56
120.0	0.390	0.410	0.26	0.48	0.390	0.165	0.430	0.390	0.25	0.47
150.0	0.320	0.330	0.26	0.43	0.320	0.165	0.360	0.320	0.25	0.41
185.0	0.250	0.270	0.26	0.37	0.260	0.165	0.300	0.250	0.25	0.36
240.0	0.190	0.210	0.26	0.33	0.200	0.160	0.250	0.195	0.25	0.31
300.0	0.155	0.175	0.25	0.31	0.160	0.160	0.220	0.155	0.25	0.29
400.0	0.120	0.140	0.25	0.29	0.130	0.155	0.200	0.125	0.24	0.27
500.0	0.093	0.120	0.25	0.28	0.105	0.155	0.185	0.098	0.24	0.26
630.0	0.072	0.100	0.25	0.27	0.086	0.155	0.175	0.078	0.24	0.25
800.0	0.056		-		0.072	0.150	0.170	0.640	0.24	0.25
1000.0	0.045		-		0.063	0.150	0.165	0.054	0.24	0.24

Conductor operating temperature: 90°C

r = Resistive Component

x = Reactive Component

z = Impedance Value

Notes

1. Where the conductor is to be protected by a semi-enclosed fuse to BS3036, see item 6.2 of the preface to appendix 4 within 16th edition regs.

2. The current-carrying capacities in columns 2 to 5 are also applicable to flexible cables BS7211 table 3(b) where the cables are used in fixed installations.

6491B Cable

Voltage Drop (per ampere per metre)

3 or 4 Cables, Three Phase AC											
Reference Methods 3 & 4 (enclosed in conduit etc, in or on a wall) mV/A/m			Reference Methods 1, 11 & 12 (in trefoil) mV/A/m			Reference Method (flat and touching) mV/A/m			Reference Methods 12 (flat spaced*) mV/A/m		
6			7			8			9		
	40.0			40.0			40.0			40.0	
	27.0			27.0			27.0			27.0	
	16.0			16.0			16.0			16.0	
	10.0			10.0			10.0			10.0	
	6.8			6.8			6.8			6.8	
	4.0			4.0			4.0			4.0	
	2.5			2.5			2.5			2.5	
r	x	z	r	x	z	r	x	z	r	x	z
1.600	0.27	1.650	1.600	0.165	1.60	1.600	0.190	1.600	1.600	0.27	1.65
1.150	0.25	1.150	1.150	0.155	1.15	1.150	0.180	1.150	1.150	0.26	1.20
0.870	0.25	0.900	0.860	0.155	0.87	0.860	0.180	0.870	0.860	0.26	0.89
0.600	0.24	0.650	0.590	0.150	0.61	0.590	0.175	0.620	0.590	0.25	0.65
0.440	0.23	0.500	0.430	0.145	0.45	0.430	0.170	0.460	0.430	0.25	0.49
0.350	0.23	0.420	0.340	0.140	0.37	0.340	0.165	0.380	0.340	0.24	0.42
0.290	0.23	0.370	0.280	0.140	0.31	0.280	0.165	0.320	0.280	0.24	0.37
0.230	0.23	0.320	0.220	0.140	0.26	0.220	0.165	0.280	0.220	0.24	0.33
0.190	0.22	0.290	0.170	0.140	0.22	0.170	0.165	0.240	0.170	0.24	0.29
0.150	0.22	0.270	0.140	0.140	0.20	0.135	0.160	0.210	0.135	0.24	0.27
0.130	0.22	0.250	0.110	0.135	0.18	0.110	0.160	0.195	0.110	0.24	0.26
0.100	0.22	0.240	0.090	0.135	0.16	0.088	0.160	0.180	0.085	0.24	0.25
0.090	0.21	0.230	0.074	0.135	0.15	0.171	0.160	0.170	0.068	0.23	0.24
	-		0.062	0.130	0.15	0.059	0.155	0.165	0.055	0.23	0.24
	-		0.055	0.130	0.14	0.050	0.155	0.165	0.047	0.23	0.24

3. For cable in rigid PVC conduit the values stated in table 4D1 are applicable (see Regulation 512-02).

4. Where a conductor operates at a temperature exceeding 70°C, it shall be ascertained that the equipment connected to the conductor is suitable for the conductor operating temperature (see Regulation 512-02).

5. Where cables in this table are connected to equipment or accessories designed to operate at a temperature not exceeding 70°C, the current ratings given in the equivalent table for 70°C PVC insulated cables BS6004, BS6346 shall be used (see Reg 523-01-01).

* Spacings larger than those specified in Method 12 (see table 4A 16th edition regs) will result in larger volt drop.

6491X Cable



Application	For use in conduit and fixed, protected installation in switchgear, lighting and appliances.
Standards	BS6004
Conductor	H07V-R: Class 2 stranded plain copper conductors to BS EN 60228:2005 (previously BS6360) H07V-U: Class 1 solid plain copper conductor to BS EN 60228:2005 (previously BS6360)
Insulation	PVC (Polyvinyl Chloride) Type T11 to BS7655
Insulation Colour	Red, Black, Blue, Yellow, Brown, White, Green/Yellow, Grey
Voltage Rating	450/750V
Temperature Rating	0°C to +70°C
Minimum Bending Radius	Up to 10mm ² : 3 x overall diameter 10mm ² to 25mm ² : 4 x overall diameter Above 25mm ² : 5 x overall diameter

6491X Cable

Dimensions

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Maximum Overall Diameter mm	Nominal Weight kg/Km
1 x 1.5	0.7	3.3	22
1 x 2.5	0.8	3.9	32
1 x 4.0	0.8	4.6	50
1 x 6.0	0.8	5.2	71
1 x 10.0	1.0	6.7	120
1 x 16.0	1.0	7.8	180
1 x 25.0	1.2	9.7	280
1 x 35.0	1.2	10.9	380
1 x 50.0	1.4	12.8	510
1 x 70.0	1.4	14.6	710
1 x 95.0	1.6	17.1	970
1 x 120.0	1.6	18.8	1200
1 x 150.0	1.8	20.9	1480
1 x 185.0	2.0	23.3	1900
1 x 240.0	2.2	26.6	2480
1 x 300.0	2.4	29.6	3100

6491X Cable

Conductors

Class 2 stranded conductors for single core and multi-core cables

1	2	3	4	5	6	7	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor						Maximum Resistance of Conductor at 20°C
	Circular		Circular Compacted		Shaped		Annealed Copper Conductor
	Cu	Al	Cu	Al	Cu	Al	Plain Wires ohms/Km
1.00	7	-	-	-	-	-	18.1000
1.50	7	-	6	-	-	-	12.1000
2.50	7	-	6	-	-	-	7.4100
4.00	7	-	6	-	-	-	4.6100
6.00	7	-	6	-	-	-	3.0800
10.00	7	7	6	6	-	-	1.8300
16.00	7	7	6	6	-	-	1.1500
25.00	7	7	6	6	6	6	0.7270
35.00	7	7	6	6	6	6	0.5240
50.00	19	19	6	6	6	6	0.3870
70.00	19	19	12	12	12	12	0.2680
95.00	19	19	15	15	15	15	0.1930
120.00	37	37	18	15	18	15	0.1530
150.00	37	37	18	15	18	15	0.1240
185.00	37	37	30	30	30	30	0.0991
240.00	37	37	34	30	34	30	0.0754
300.00	61	61	34	30	34	30	0.0601
630.00	91	91	53	53	53	53	0.0283

Table in accordance with BS EN 60228:2005 (previously BS6360).

6491X Cable

Electrical Characteristics

Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm ²	Reference Method A (enclosed in conduit in thermally insulating wall etc.) Amps		Reference Method B (enclosed in conduit on a wall or in a trunking etc.) Amps		Reference Method C (clipped direct) Amps		Reference Method F (in free air or on a perforated cable tray etc. horizontal or vertical) Amps				
	Touching		Spaced by one Diameter								
	2 Cables Single Phase AC or DC	3 or 4 Cables Three Phase AC	2 Cables Single Phase AC or DC	3 or 4 Cables Three Phase AC	2 Cables Single Phase AC or DC AC Flat or Touching	3 or 4 Cables Three Phase AC Flat & Touching or Trefoil	2 Cables Single Phase AC or DC AC Flat	3 Cables Three Phase AC Flat	3 Cables Three Phase AC Trefoil	2 Cables Single Phase AC or DC or 3 Cables Three Phase AC Flat	
										Horizontal	Vertical
1	2	3	4	5	6	7	8	9	10	11	12
1.0	11.0	10.5	13.5	12.0	15.5	14.0	-	-	-	-	-
1.5	14.5	13.5	17.5	15.5	20.0	18.0	-	-	-	-	-
2.5	20.0	18.0	24.0	21.0	27.0	25.0	-	-	-	-	-
4.0	26.0	24.0	32.0	28.0	37.0	33.0	-	-	-	-	-
6.0	34.0	31.0	41.0	36.0	47.0	43.0	-	-	-	-	-
10.0	46.0	42.0	57.0	50.0	65.0	59.0	-	-	-	-	-
16.0	61.0	56.0	76.0	68.0	87.0	79.0	-	-	-	-	-
25.0	80.0	73.0	101.0	89.0	114.0	104.0	131	114	110	146	130
35.0	99.0	89.0	125.0	110.0	141.0	129.0	162	143	137	181	162
50.0	119.0	108.0	151.0	134.0	182.0	167.0	196	174	167	219	197
70.0	151.0	136.0	192.0	171.0	234.0	214.0	251	225	216	281	254
95.0	182.0	164.0	232.0	207.0	284.0	261.0	304	275	264	341	311
120.0	210.0	188.0	269.0	239.0	330.0	303.0	352	321	308	396	362
150.0	240.0	216.0	300.0	262.0	381.0	349.0	406	372	356	456	419
185.0	273.0	245.0	341.0	296.0	436.0	400.0	463	427	409	521	480
240.0	321.0	286.0	400.0	346.0	515.0	472.0	546	507	485	615	569
300.0	367.0	328.0	458.0	394.0	594.0	545.0	629	587	561	709	659
400.0	-	-	546.0	467.0	694.0	634.0	754	589	656	852	795
500.0	-	-	626.0	533.0	792.0	723.0	868	789	749	982	920
630.0	-	-	720.0	611.0	904.0	826.0	1005	905	855	1138	1070

Ambient temperature: 30°C

Conductor operating temperature: 70°C

The above table is in accordance with Table 4D1A of the 17th Edition of IEE Wiring Regulations.

6491X Cable

Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area mm ²	2 Cables DC mV/A/m	2 Cables, Single Phase AC mV/A/m								
		Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C, F, & G (clipped direct, on tray or in free air)					
					Cable Touching			Cable Spaced*		
1	2	3			4			5		
1.0	44.000		44.0			44.0			44.0	
1.5	29.000		29.0			29.0			29.0	
2.5	18.000		18.0			18.0			18.0	
4.0	11.000		11.0			11.0			11.0	
6.0	7.300		7.3			7.3			7.3	
10.0	4.400		4.4			4.4			4.4	
16.0	2.800		2.8			2.8			2.8	
		r	x	z	r	x	z	r	x	z
25.0	1.750	1.800	0.33	1.80	1.750	0.200	1.750	1.750	0.29	1.80
35.0	1.250	1.300	0.31	1.30	1.250	0.195	1.250	1.250	0.28	1.30
50.0	0.930	0.950	0.30	1.00	0.930	0.190	0.950	0.930	0.28	0.97
70.0	0.630	0.650	0.29	0.72	0.630	0.185	0.660	0.630	0.27	0.69
95.0	0.460	0.490	0.28	0.56	0.470	0.180	0.500	0.470	0.27	0.54
120.0	0.360	0.390	0.27	0.47	0.370	0.175	0.410	0.370	0.26	0.45
150.0	0.290	0.310	0.27	0.41	0.300	0.175	0.340	0.290	0.26	0.39
185.0	0.230	0.250	0.27	0.37	0.240	0.170	0.290	0.240	0.26	0.35
240.0	0.180	0.195	0.26	0.33	0.185	0.165	0.250	0.185	0.25	0.31
300.0	0.145	0.160	0.26	0.31	0.150	0.165	0.220	0.150	0.25	0.29
400.0	0.105	0.130	0.26	0.29	0.120	0.160	0.200	0.115	0.25	0.27
500.0	0.086	0.110	0.26	0.28	0.098	0.155	0.185	0.093	0.24	0.26
630.0	0.068	0.094	0.25	0.27	0.081	0.155	0.175	0.076	0.24	0.25

6491X Cable

Voltage Drop (per ampere per metre)

3 or 4 Cables, Three Phase AC mV/A/m											
Reference Methods A & B (enclosed in conduit or trunking)			Reference Methods C, F, & G (clipped direct, on tray or in free air)								
			Cable Touching Trefoil			Cable Touching Flat			Cable Spaced* Flat		
6			7			8			9		
	38.0			38.0			38.0			38.0	
	25.0			25.0			25.0			25.0	
	15.0			15.0			15.0			15.0	
	9.5			9.5			9.5			9.5	
	6.4			6.4			6.4			6.4	
	3.8			3.8			3.8			3.8	
	2.4			2.4			2.4			2.4	
r	x	z	r	x	z	r	x	z	r	x	z
1.500	0.29	1.55	1.500	0.175	1.500	0.150	0.25	1.55	1.500	0.32	1.55
1.100	0.27	1.10	1.100	0.170	1.100	1.100	0.24	1.10	1.100	0.32	1.15
0.810	0.26	0.85	0.800	0.165	0.820	0.800	0.24	0.84	0.800	0.32	0.86
0.560	0.25	0.61	0.550	0.160	0.570	0.550	0.24	0.60	0.550	0.31	0.63
0.420	0.24	0.48	0.410	0.155	0.430	0.410	0.23	0.47	0.400	0.31	0.51
0.330	0.23	0.41	0.320	0.150	0.360	0.320	0.23	0.40	0.320	0.30	0.44
0.270	0.23	0.36	0.260	0.150	0.300	0.260	0.23	0.34	0.260	0.30	0.40
0.220	0.23	0.32	0.210	0.145	0.260	0.210	0.22	0.31	0.210	0.30	0.36
0.170	0.23	0.29	0.160	0.145	0.220	0.160	0.22	0.27	0.160	0.29	0.34
0.140	0.23	0.27	0.130	0.140	0.190	0.130	0.22	0.25	0.130	0.29	0.32
0.120	0.22	0.25	0.105	0.140	0.175	0.105	0.21	0.24	0.100	0.29	0.31
0.100	0.22	0.25	0.086	0.135	0.160	0.086	0.21	0.23	0.081	0.29	0.30
0.080	0.22	0.24	0.072	0.135	0.150	0.072	0.21	0.22	0.066	0.28	0.29

r = Resistive Component

x = Reactive Component

z = Impedance Value

Conductor operating temperature: 70°C

* Spacings larger than one cable diameter will result in a larger voltage drop.

The above table is in accordance with Table 4D1B of the 17th Edition of IEE Wiring Regulations.

For cables having conductors of 16mm² or less cross-sectional area, their inductances can be ignored and (mV/A/m)_r values only are tabulated. For cables having conductors greater than 16mm² cross-sectional area, the impedance values are given as (mV/A/m)_z, together with the resistive component (mV/A/m)_r and the reactive component (mV/A/m)_x.

The above paragraph is extracted from Appendix 4 of the 16th Edition of IEE Wiring Regulations.

Armoured Copper Trackside Cable



Application	Suitable for installation in trackside cable troughing and buried duct routes or for direct burial.
Standards	NR/PS/TEL/00015 (formerly RT/E/PS/00015)
Network Rail Acceptance	Certificate Number: PA05/03862
Conductor	Class 1 solid plain copper conductor to BS EN 60228:2005 (previously BS6360)
Insulation	PE (Polyethylene) Type 03 to BS6234
Water Blocking Compound	Petroleum jelly
Separator	Impregnated paper and/or non-hygrosopic tape
Moisture Barrier	Aluminium/Polymer laminate tape
Sheath	PE (Polyethylene) Type 03C to BS6234 or LSZH(Low Smoke Zero Halogen)
Sheath Colour	Black
Temperature Rating	-25°C to +85°C
Minimum Bending Radius	7.5 x overall diameter

Armoured Copper Trackside Cable

Dimensions

PE Armoured 0.63mm

Rail Catalogue Number	Number of Pairs	Nominal Inner Thickness of Sheath Min. mm	Nominal Outer Thickness of Sheath Min. mm	Ratio Min.:Max.	Nominal Overall Diameter mm	Nominal Weight kg/Km
006/168011	2	1.6	1.6	0.75	15.3	215
006/168012	5	1.6	1.6	0.75	18.1	302
006/168013	10	1.6	1.6	0.75	19.5	369
006/168014	20	1.6	1.6	0.75	21.6	489
006/168015	30	1.6	1.6	0.75	23.6	608
006/168016	50	1.6	1.6	0.75	26.9	837
006/168017	75	1.6	1.6	0.75	30.3	1110
006/168018	100	1.6	1.6	0.75	33.6	1391

PE Armoured 0.90mm

Rail Catalogue Number	Number of Pairs	Nominal Inner Thickness of Sheath Min. mm	Nominal Outer Thickness of Sheath Min. mm	Ratio Min.:Max.	Nominal Overall Diameter mm	Nominal Weight kg/Km
006/168061	2	1.6	1.6	0.75	16.2	248
006/168062	5	1.6	1.6	0.75	19.9	383
006/168063	10	1.6	1.6	0.75	21.8	495
006/168064	20	1.6	1.6	0.75	24.7	702
006/168065	30	1.6	1.6	0.75	27.4	912
006/168066	50	1.6	1.6	0.75	31.9	1317
006/168067	75	1.6	1.6	0.75	36.2	1792
006/168068	100	1.6	1.6	0.75	40.7	2300

Armoured Copper Trackside Cable

Electrical Characteristics

	2Pr	5Pr	10Pr	20Pr	30Pr	50Pr	75Pr	100Pr
Conductor Resistance 0.63mm (ohms/Km)								
Max. Average at 20°C	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
Max. at 20°C	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Conductor Resistance 0.90mm (ohms/Km)								
Max. Average at 20°C	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Max. at 20°C	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Insulation Resistance Min. (Mohms/Km)	1500.0	1500.0	1500.0	1500.0	1500.0	1500.0	1500.0	1500.0
Mutual Capacitance (nF/Km)	-	-	-	-	-	-	-	-
Max. Average	70.0	70.0	70.0	70.0	67.0	67.0	67.0	67.0
Max. for 99% pairs	79.0	79.0	79.0	79.0	75.0	75.0	75.0	75.0
Capacitance Unbalance (Max. pF/500m)	800.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0
Attenuation dB/Km Max. Average								
0.63mm								
1.0KHz	-	-	-	1.40	1.40	1.40	1.40	1.40
2.4KHz	-	-	-	2.15	2.15	2.15	2.15	2.15
1.024MHz	-	-	-	18.70	18.70	18.70	18.70	18.70
Attenuation dB/Km Max. Average								
0.90mm								
1.0KHz	-	-	-	0.95	0.95	0.95	0.95	0.95
2.4KHz	-	-	-	1.46	1.46	1.46	1.46	1.46
1.024MHz	-	-	-	14.60	14.60	14.60	14.60	14.60
NEXTA (dB) * (minimum)								
1KHz	-	-	-	70.00	70.00	70.00	70.00	70.00
1.024MHz (Within Units)	-	-	-	40.00	40.00	40.00	40.00	40.00
1.024MHz (Between Units)	-	-	-	47.00	47.00	47.00	47.00	47.00

* NEXTA at 1.0KHz shall have an average value better than 75dB.

Copper Trackside Cable



Application	Suitable for installation in trackside cable troughing and buried duct routes or for direct burial.
Standards	NR/PS/TEL/00015 (formerly RT/E/PS/00015)
Network Rail Acceptance	Certificate Number: PA05/03862
Conductor	Class 1 solid plain copper conductor to BS EN 60228:2005 (previously BS6360)
Insulation	PE (Polyethylene) Type 03 to BS6234
Water Blocking Compound	Petroleum jelly
Separator	Impregnated paper and/or non-hygroscopic tape
Moisture Barrier	Aluminium/Polymer laminate tape
Sheath	PE (Polyethylene) Type 03C to BS6234 or LSZH (Low Smoke Zero Halogen)
Sheath Colour	Black
Temperature Rating	-25°C to +85°C
Minimum Bending Radius	7.5 x overall diameter

Copper Trackside Cable

Dimensions

PE Duct 0.63mm

Rail Catalogue Number	Number of Pairs	Nominal Inner Thickness of Sheath Min. mm	Nominal Outer Thickness of Sheath Min. mm	Ratio Min.:Max.	Nominal Overall Diameter mm	Nominal Weight kg/Km
006/168001	2	1.6	1.6	0.75	8.9	68
006/168002	5	1.6	1.6	0.75	11.7	122
006/168003	10	1.6	1.6	0.75	13.1	171
006/168004	20	1.6	1.6	0.75	15.2	263
006/168005	30	1.6	1.6	0.75	17.2	359
006/168006	50	1.6	1.6	0.75	20.5	545
006/168007	75	1.6	1.6	0.75	23.9	776
006/168008	100	1.6	1.6	0.75	27.2	1016

PE Duct 0.90mm

Rail Catalogue Number	Number of Pairs	Nominal Inner Thickness of Sheath Min. mm	Nominal Outer Thickness of Sheath Min. mm	Ratio Min.:Max.	Nominal Overall Diameter mm	Nominal Weight kg/Km
006/168051	2	1.6	1.6	0.75	9.8	90
006/168052	5	1.6	1.6	0.75	13.5	179
006/168053	10	1.6	1.6	0.75	15.4	268
006/168054	20	1.6	1.6	0.75	18.3	439
006/168055	30	1.6	1.6	0.75	21.0	615
006/168056	50	1.6	1.6	0.75	25.5	964
006/168057	75	1.6	1.6	0.75	29.8	1385
006/168058	100	1.6	1.6	0.75	34.9	1836

Copper Trackside Cable

Electrical Characteristics

	2Pr	5Pr	10Pr	20Pr	30Pr	50Pr	75Pr	100Pr
Conductor Resistance 0.63mm(ohms/Km)								
Max. Average at 20°C	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
Max. at 20°C	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Conductor Resistance 0.90mm (ohms/Km)								
Max. Average at 20°C	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Max. at 20°C	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Insulation Resistance Min. (Mohms/Km)	1500.0	1500.0	1500.0	1500.0	1500.0	1500.0	1500.0	1500.0
Mutual Capacitance (nF/Km)	-	-	-	-	-	-	-	-
Max. Average	70.0	70.0	70.0	70.0	67.0	67.0	67.0	67.0
Max. for 99% pairs	79.0	79.0	79.0	79.0	75.0	75.0	75.0	75.0
Capacitance Unbalance (Max. pF/500m)	800.0	275.0	275.0	275.0	275.0	275.0	275.0	275.0
Attenuation dB/Km Max. Average								
0.63mm								
1.0KHz	-	-	-	1.40	1.40	1.40	1.40	1.40
2.4KHz	-	-	-	2.15	2.15	2.15	2.15	2.15
1.024MHz	-	-	-	18.70	18.70	18.70	18.70	18.70
Attenuation dB/Km Max. Average								
0.90mm								
1.0KHz	-	-	-	0.95	0.95	0.95	0.95	0.95
2.4KHz	-	-	-	1.46	1.46	1.46	1.46	1.46
1.024MHz	-	-	-	14.60	14.60	14.60	14.60	14.60
NEXTA (dB) * (minimum)								
1KHz	-	-	-	70.00	70.00	70.00	70.00	70.00
1.024MHz (Within Units)	-	-	-	40.00	40.00	40.00	40.00	40.00
1.024MHz (Between Units)	-	-	-	47.00	47.00	47.00	47.00	47.00

* NEXTA at 1.0KHz shall have an average value better than 75dB.

Fibre Trackside Cable



Application	Fibre communications cable for high traffic and data rate requirements.
Standards	NR/PS/TEL/00014 (formerly RT/E/PS/00014)
Fibre	Single mode fibre
Fibre Carrier	PE (Polyethylene)
Strength Member	Single continuous non-metallic
Binding Type	Polymeric loose tubes filled with water blocking material
Bedding	PE (Polyethylene) Type 03C to BS6234 or LSZH (Low Smoke Zero Halogen)
Sheath	PE (Polyethylene) Type 03C to BS6234 or LSZH (Low Smoke Zero Halogen)
Sheath Colour	Black
Temperature Rating	20°C to +60°C
Minimum Bending Radius	12 x overall diameter

Fibre Trackside Cable

Dimensions

Rail Catalogue Number	No. of Fibres	Nominal Thickness of Cladding μm	Nominal Polymer Tube Diameter mm	Optical Attenuation 1290 - 1330nm dB/Km	Optical Attenuation 1525 - 1575nm dB/Km	Nominal Inner Sheath Thickness mm	Nominal Thickness of Sheath mm
-	8	125	2.5	≤ 0.37	≤ 0.27	1.6	2.0
006/132511	12	125	2.5	≤ 0.37	≤ 0.27	1.6	2.0
006/169053	24	125	2.5	≤ 0.37	≤ 0.27	1.6	2.0
006/169013	48	125	2.5	≤ 0.37	≤ 0.27	1.6	2.0
-	96	125	2.5	≤ 0.37	≤ 0.27	1.6	2.0

FTN Screening Conductor Cable



Application	To be used for the purpose of screening telecommunication cables from electrical interference.
Standards	NR/PS/TEL/31102(BR1817)/BS6485
Conductor	Single core stranded aluminium to BS215PT1
Insulation	PVC (Polyvinyl Chloride) to BS6485
Insulation Colour	Black, Red, Yellow
Temperature Rating	0°C to +70°C
Minimum Bending Radius	9 x overall diameter

Dimensions

Rail Catalogue Number	Sheath Colour	Drawing Number	No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Diameter of Strands mm	Thickness of Sheath Min mm	Nominal Overall Diameter mm	Nominal Weight kg/Km	Maximum DC Resistance at 20°C ohms/Km
091/010318	Black PVC	148/046/998	1 x 150	3.25	1.6	19.45	629	0.1825
091/010319	Black PVC	148/047/998	1 x 250	4.22	1.6	24.30	995	0.1083
091/030336	Red PVC	148/443/001	1 x 150	3.25	1.6	19.45	629	0.1825
091/030337	Yellow PVC	148/444/001	1 x 150	3.25	1.6	19.45	629	0.1825

SCADA / Pilot Cable



Application	Paired core compound-filled supervisory cables for modem based supervisory systems operating in the VF range 300 to 3000 Hz.
Standards	NR/PS/ELP/27220 (formerly RT/E/PS/0034)
Network Rail Acceptance	Certificate Number: PA05/04015
Conductor	Class 1 solid plain copper conductor 0.9mm nominal diameter to BS6360, complies to BS3573
Insulation	PE (Polyethylene) Type 03 to BS6234
Filling Compound	Petroleum jelly
Separator	PETP (Polyethylene Terephthalate) tape
Moisture Barrier	Al/PE (Aluminium/Polyethylene) laminate
Bedding	PE (Polyethylene) Type 03C to BS6234
Screen	Aluminium wire
Separator	Water blocking tape
Sheath	PE (Polyethylene) Type 03C to BS6234
Sheath Colour	Black
Temperature Rating	-25°C to +85°C
Minimum Bending Radius	10 x overall diameter

SCADA / Pilot Cable

Dimensions

Rail Catalogue Number	No. of Pairs at 0.9mm	Nominal Thickness of Insulation mm	Average Mutual Capacitance nF/Km	Maximum Capacitance Unbalance Between Pairs nF/500m	Nominal Thickness of Sheath mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
006/120030	10	0.3	71	275	1.8	25.8	755
006/122516	20	0.3	71	275	1.8	27.8	946
006/120031	30	0.3	71	275	2.0	31.8	1225
006/120032	20	0.3	71	275	1.8	27.8	946

Twin Datalink Cable



Application	Interconnecting cable for Solid State Interlocking (SSI) systems.
Standards	BR1932
Conductor	Class 1 solid plain copper conductor (1/1.27)
Insulation	PE (Polyethylene)
Bedding	PE (Polyethylene)
Moisture Barrier	Aluminium / Polyethylene laminated tape
Sheath	PE (Polyethylene)
Sheath Colour	Black
Temperature Rating	-25°C to +85°C
Minimum Bending Radius	6 x overall diameter

Twin Datalink Cable

Dimensions

Rail Catalogue Number	Number of Pairs	Nominal Diameter of Strands mm	Nominal Thickness of Insulation mm	Nominal Thickness of Sheath mm	Overall Diameter Min. mm	Overall Diameter Max. mm	Nominal Weight kg/Km
006/166065	1	1.27	0.66	2.5	12.47	12.8	135.53

Conductors

Class 1 solid conductors for single core and multi-core cables

1	2	3
Nominal Cross Sectional Area mm ²	Maximum Resistance of Conductor at 20°C	
	Circular, Annealed Copper Conductors	
	Plain Wires ohms/Km	Metal-Coated Wires ohms/Km
2.50	7.4100	7.56

Table in accordance with BS EN 60228:2005 (previously BS6360).

Section 12 Fire Integrity Cable – London Underground



Application	For installation typically in public help points (PHP), public address (PA), station announcement platforms (SAP) and CCTV camera power systems. This LSZH cable has been designed to provide superior flame retardance and circuit integrity, together with optimised ease of installation characteristics and complies with LU Section 12 station regulations.
Standards	BS7629-1, BS 5839-1:2002, BS 5839-1:2002, BS 8434-1:2003, BS EN 50200 PH30, BS 6387 C W Z, IEC 60332-3, IEC 60332-1, BS EN 50265, BS EN 50266, IEC 60754, BS EN 50267, IEC 61034, BS EN 50268
Conductor	Class 1 solid or Class 2 stranded annealed plain copper conductors to BS EN 60228:2005 (previously BS6360)
Insulation	Silicone rubber
Separator	Unspecified material
Screen	Aluminium / Polyester laminated tape
Drain Wire	Tinned copper
Sheath	High performance, thermoplastic LSZH (Low Smoke Zero Halogen)
Sheath Colour	White
Voltage	300/500V
Temperature Rating	-40°C to +90°C This cable should not be flexed when either the ambient or cable temperature is below 0°C.
Minimum Bending Radius	6 x overall diameter
Core Identification	2 Cores: Brown, Blue 3 Cores: Brown, Black, Grey 4 Cores: Blue, Brown, Black, Grey 7 Cores: Blue, Brown, Black, Grey

Section 12 Fire Integrity Cable – London Underground

Dimensions

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Overall Diameter mm	Nominal Weight kg/Km
2 x 1.00	7.0	83
2 x 1.50	7.9	110
2 x 2.50	9.3	160
3 x 1.00	7.3	95
3 x 1.50	8.3	128
3 x 2.50	9.9	190
4 x 1.00	8.2	115
4 x 1.50	9.5	160
4 x 2.50	11.3	235
7 x 1.00	10.5	175
7 x 1.50	12.2	250

Conductors

Class 1 solid conductors for single core and multi-core cables

1	2
Nominal Cross Sectional Area mm ²	Maximum Resistance of the Conductor at 20°C
	Circular, Annealed Copper Conductors
	Plain Wires ohms/Km
1.00	18.1000
1.50	12.1000
2.50	7.4100
4.00	4.6100

Table in accordance with BS EN 60228:2005 (previously BS6360).

Section 12 Fire Integrity Cable – London Underground

Class 2 stranded conductors for single core and multi-core cables

1	2	4	8
Nominal Cross Sectional Area mm ²	Minimum Number of Wires in the Conductor		Maximum Resistance of Conductor at 20°C
	Circular	Circular Compacted	Annealed Copper Conductor
	Cu	Cu	Plain Wires ohms/Km
1.00	7	-	18.1000
1.50	7	6	12.1000
2.50	7	6	7.4100
4.00	7	6	4.6100

Table in accordance with BS EN 60228:2005 (previously BS6360).

Electrical Characteristics

Current Carrying Capacity (amperes)

Nominal Cross Sectional Area mm ²	Current Rating DC or Single Phase AC Enclosed Amps	Current Rating DC or Single Phase AC Amps	Volt Drop DC or Single Phase AC mV/A/m
1.00	13.0	15.0	44
1.50	16.5	19.5	29
2.50	23.0	27.0	18
4.00	30.0	36.0	11

Temperature Ratings Factor

Ambient Temperature	25°C	30°C	35°C	40°C	45°C	50°C
Rating Factor	1.03	1.00	0.94	0.60	0.57	0.54

Rating Factors for Groupings

Number of Circuits	2	3	4	5	6	7
Rating Factor	0.80	0.70	0.65	0.60	0.57	0.54

FireForce Fire Performance Cable PH30



Application For fixed installation typically in fire alarm and emergency lighting circuits where circuit integrity must be maintained. For use where fire, smoke emission and toxic fumes create a potential threat to life and equipment.

Standards BS 7629-1, BS 6387 C W Z
BS 5839-1 clause 26.2, BS EN 50200 PH30
BS 8434-1

Conductor Class 1 solid plain copper conductors

Insulation Special compound silicone and rubber mix

Separator Unspecified material

Screen CAM (Collective Aluminium Mylar)

Drain Wire Tinned copper

Sheath LSZH (Low Smoke Zero Halogen)

Sheath Colour Red or White

Core Identification 2 Cores: Brown, Blue
4 Cores: Blue, Brown, Black, Grey

Voltage 300/500V

Temperature Rating -30°C to +70°C

Minimum Bending Radius 6 x overall diameter



Certificate Number 988-18-1



FireForce Fire Performance Cable PH30

Dimensions

No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Thickness of Insulation mm	Nominal Thickness of Sheath mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
2 x 1.50	0.7	1.4	8.07	101.39
2 x 2.50	0.8	1.4	9.09	141.86
4 x 1.50	0.7	1.4	9.08	150.51
4 x 2.50	0.8	1.5	11.05	222.00

Conductors

Class 1 Solid Conductors for single core and multi-core cables

1	2
Nominal Cross Sectional Area mm ²	Maximum Resistance of the Conductor at 20°C
	Circular, Annealed Copper Conductors
	Plain Wire ohms/Km
1.50	12.1000
2.50	7.4100

Table in accordance with BS EN 60228:2005 (previously BS6360).

FireForce Fire Performance Cable PH30

Electrical Characteristics

Current Carrying Capacity (amperes)

Conductor Cross Sectional Area mm ²	Reference Method A (enclosed in conduit in thermally insulating wall etc.)		Reference Method B (enclosed in conduit on a wall or in trunking etc.)		Reference Method C (clipped direct)		Reference Method E (in free air or on a perforated cable tray etc. horizontal or vertical)	
	1 Two Core Cable* Single Phase AC or DC Amps	1 Three Core Cable* or 1 Four Core Cable Three Phase AC Amps	1 Two Core Cable* Single Phase AC or DC Amps	1 Three Core Cable* or 1 Four Core Cable Three Phase AC Amps	1 Two Core Cable* Single Phase AC or DC Amps	1 Three Core Cable* or 1 Four Core Cable Three Phase AC Amps	1 Two Core Cable* Single Phase AC or DC Amps	1 Three Core Cable* or 1 Four Core Cable Three Phase AC Amps
1	2	3	4	5	6	7	8	9
1.5	14.0	13.0	16.5	15.0	19.5	17.5	22	18.5
2.5	18.5	17.5	23.0	20.0	27.0	24.0	30	25.0

Ambient temperature: 30°C

Conductor operating temperature: 70°C

*With or without a protective conductor

The above table is in accordance with Table 4D2A of the 17th Edition of IEE Wiring Regulations.

The Current Carrying Capacities in this appendix are based upon the following reference ambient temperatures:

For non-sheathed and sheathed cables in air, irrespective of the Installation Method: 30°C

For buried cables, either directly in the soil or in ducts in the ground: 20°C

The current ratings stated are based on conservative assumptions, and therefore, in some instances, may be adjusted according to the ambient installation and operating conditions.

Voltage Drop (per ampere per metre)

Conductor Cross Sectional Area mm ²	Two Core Cable DC mV/A/m	Two Core Cable Single Phase AC mV/A/m	Three or Four Core Cable Three Phase AC mV/A/m
1	2	3	4
1.5	29.00	29.0	25.0
2.5	18.00	18.0	15.0

Conductor operating temperature: 70°C

Points Heating Cable



Application	Designed for power distribution in points heating systems. These heavy duty cables offer protection from abrasion and mechanical impact whilst maintaining flexibility to ease installation.
Standards	NR/SP/ELP/40045 (formerly RT/E/PS/40045) BS7919
Conductor	Class 5 flexible tinned copper conductors to BS EN 60228:2005 (previously BS6360)
Insulation	EPR (Ethylene Propylene Rubber) insulation Type GP4 to BS7655
Separator	Unspecified material
Sheath	PCP (Polychloroprene) Type EM2 to BS7655
Sheath Colour	Black
Core Identification	4 cores (in order of rotation): Yellow/Yellow, Blue/Blue 8 cores (in order of rotation): Yellow/Yellow, Blue/Blue, Brown/Brown, Black/Black

Points Heating Cable

Dimensions

Rail Catalogue Number	Number of Cores	Nominal Conductor Area mm ²	No. and Diameter of Strands # / mm	Overall Diameter Min mm	Overall Diameter Max mm	Nominal Weight kg/Km	Thickness of Insulation mm
006/150002	4	1.5	30/0.25	13.80	14.30	220	0.8
-	4	2.5	50/0.25	16.00	16.50	390	0.9
-	4	4.0	56/0.30	18.00	18.50	420	1.0
006/153102	8	1.5	30/0.25	17.90	18.50	460	0.8
-	8	2.5	50/0.25	21.00	21.80	690	0.9
006/153103	8	4.0	56/0.30	22.60	23.60	830	1.0
-	8	6.0	84/0.30	24.50	25.50	1010	1.0

Conductors

Class 5 flexible copper conductors for single core and multi-core cables

1	2	4
Nominal Cross Sectional Area mm ²	Maximum Diameter of Wires in Conductor mm	Maximum Resistance of the Conductor at 20°C
		Metal-Coated Wires at 20°C ohms/Km
1.50	0.26	13.7000
2.50	0.26	8.2100
4.00	0.31	5.0900
6.00	0.31	3.3900

Table in accordance with BS EN 60228:2005 (previously BS6360).

Bare Conductor



Application	To be used for the purpose of screening telecommunication cables from electrical interference.
Standards	NR/PS/TEL/31102 (BR1817), BS6485
Conductor	Single core stranded aluminium to BS215PT1
Temperature Rating	0°C to +70°C
Minimum Bending Radius	9 x overall diameter

Dimensions

Rail Catalogue Number	Drawing Number	No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Diameter of Strands mm	Nominal Overall Diameter mm	Nominal Weight kg/Km	Maximum DC Resistance at 20°C ohms/Km
091/010267	148/044/998	1 x 150	3.25	16.25	443	0.1825
091/010268	148/045/998	1 x 250	4.22	21.10	754	0.1083

Screening Conductor PVC Cable



Application	To be used for the purpose of screening telecommunication cables from electrical interference.
Standards	NR/PS/TEL/31102(BR1817)/BS6485
Conductor	Single core stranded aluminium to BS215PT1
Insulation	PVC (Polyvinyl Chloride) to BS6485
Insulation Colour	Black, Red, Yellow
Temperature Rating	0°C to +70°C
Minimum Bending Radius	9 x overall diameter

Dimensions

Rail Catalogue Number	Sheath Colour	Drawing Number	No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Diameter of Strands mm	Thickness of Sheath Min mm	Nominal Overall Diameter mm	Nominal Weight kg/Km	Maximum DC Resistance at 20°C ohms/Km
091/010318	Black PVC	148/046/998	1 x 150	3.25	1.6	19.45	629	0.1825
091/010319	Black PVC	148/047/998	2 x 250	4.22	1.6	24.30	995	0.1083
091/030336	Red PVC	148/443/001	1 x 150	3.25	1.6	19.45	629	0.1825
091/030337	Yellow PVC	148/444/001	1 x 150	3.25	1.6	19.45	629	0.1825

Screening Conductor LSZH Cable



Application	To be used for the purpose of screening telecommunication cables from electrical interference.
Standards	NR/PS/TEL/31102(BR1817)/BS6485
Conductor	Single core stranded aluminium to BS215PT1
Insulation	LSZH (Low Smoke Zero Halogen)
Insulation Colour	Black
Temperature Rating	0°C to +70°C
Minimum Bending Radius	9 x overall diameter

Dimensions

Rail Catalogue Number	Drawing Number	No. of Cores x Nominal Cross Sectional Area # x mm ²	Nominal Diameter of Strands mm	Thickness of Sheath Min. mm	Nominal Overall Diameter mm	Nominal Weight kg/Km	Maximum DC Resistance at 20°C ohms/Km
091/012189	148/863/998	1 x 150	3.25	1.6	19.45	629	0.1825
091/012190	148/864/998	1 x 250	4.22	1.6	24.30	995	0.1083

Coaxial Cable URM70



Application	Coaxial cable used for CCTV, video signal connections, and monitored barriers at level crossings.
Conductor	PCW (Plain Copper Wire)
Dielectric	PE (Polyethylene)
Braiding	Bare copper braid
Sheath	PVC (Polyvinyl Chloride)
Sheath Colour	Black or White
Voltage Rating	30V
Temperature Rating	60°C

Dimensions

Rail Catalogue Number	Cable Type	No. and Nominal Diameter of Strands # x mm	Nominal Thickness of Dielectric mm	Nominal Overall Diameter mm	Nominal Weight kg/Km
006/165543	URM70	7/0.19	3.20	5.80	46.0

Electrical Characteristics

Coaxial Cable	Nominal Capacitance pF/mtr	Impedance ohms	Velocity Ratio %
URM70	67	75	66.6

Accessories

A full range of accessories is also available from Unipart Rail. These include:

Trunking

Cable Clamps

Cable Jointing Kits (LV and MV)

Crimps

Cable Ties

Cable Markers

Track Connection Cables

Junction Blocks (Points Heating)

Glands

Terminals

Lugs

Heatshrink

Coldshrink

Sleeving

Ducting

Cleats

End Caps

Visit www.unipartail.com/catalogue to view these and other products in the range.

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Issue 1: September 2009

The information contained within this handbook is of indicative reference only.
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