

BS7870-4.10 33kV Stranded and Solid Aluminium Conductor

BS7870 - 4.10

CABLE CHARACTERISTICS



Bending radius
 $r=20D$



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CABLE DESCRIPTION

1.CONDUCTOR

Solid circular Aluminium conductor complying with BS6360 Class 1 or compacted circular stranded Aluminium conductor complying with BS6360 Class 2.

2. CONDUCTOR SCREEN

Extruded semi-conducting compound bonded to the insulation and applied in the same operation as the insulation.

3.INSULATION

Extruded cross-linked polyethylene (XLPE) suitable for operation at a conductor temperature of 90°C.

4.INSULATION SCREEN

Extruded semi-conducting compound applied in the same operation as the insulation. Cold strippable screens are supplied as standard but fully bonded screens may be provided if specified.

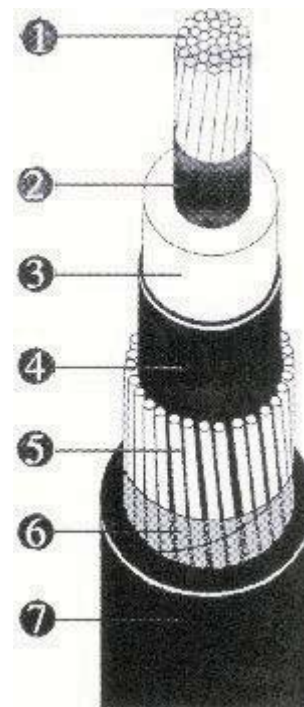
5.METALLIC SCREEN

Circular copper wires applied helically to provide an earth fault current path. Nominal screen area, as stated in table, supplied as standard unless otherwise specified.

6.BINDER TAPE

7.OVERSHEATH

Extruded black medium density polyethylene (MDPE) is supplied as standard.



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Constructional Data

Cross-sectional area mm ²	Minimum average thickness of insulation mm	Nominal diameter over insulation mm	Nominal area of copper wire screen mm ²	Minimum average thickness of oversheath mm	Nominal overall diameter of cable mm	Nominal drum length m
70	8.0	28.9	35	2.0	36.0	500
95	8.0	30.6	35	2.1	37.9	500
120	8.0	32.1	35	2.1	41.4	500
150	8.0	33.4	35	2.2	43.0	500
185	8.0	35.2	35	2.2	44.8	500
240	8.0	37.4	35	2.3	47.5	500
300	8.0	39.7	35	2.4	50.0	500

Installation Data

Cross-sectional area mm ²	Approximate cable weight Kg/m	Minimum bending radius mm	Nominal internal diameter of duct mm
70	1.4	750	100
95	1.5	800	100
120	1.7	800	100
150	1.8	850	100
185	2.0	850	100
240	2.3	900	100
300	2.6	950	100

Electrical Data

Cross-sectional area mm ²	Maximum DC resistance of conductor at 20°C μ Ω/m	Maximum AC resistance of conductor at 90°C μ Ω/m	Reactance at 50Hz μ Ω/m	Impedance at 50Hz μ Ω/m	Maximum Capacitance pF/m	Maximum charging current at normal voltage and frequency mA/m
70	443	568	143	586	154	0.92
95	320	410	135	432	169	1.01
120	253	325	130	350	183	1.10
150	206	265	126	293	194	1.16
185	164	211	122	244	210	1.26
240	125	161	117	199	229	1.37
300	100	130	113	172	249	1.49

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Ratings

Cross-sectional area mm ²	Current Ratings			Short Circuit Ratings	
	Laid direct in ground	Drawn into ducts	Laid in air	1 second short circuit rating of conductor	1 second short circuit rating of copper wire screen
	Amps	Amps	Amps	kA	kA
70	210	210	250	6.3	6.1
95	250	250	305	8.5	6.1
120	280	280	345	11.0	6.1
150	320	320	400	13.5	6.1
185	360	350	450	17.0	6.1
240	415	415	530	22.3	6.1
300	475	460	600	28.0	6.1

Current Rating Conditions:

Ground Temperature	15°C
Ambient temperature (air)	25°C
Depth of Burial	0.8m
Thermal resistance of soil	1.2°C m/W

Single core cables in trefoil, bonded and earthed at both ends.



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