BS7870-4.11 (33kV) Aluminium Conductor

CABLE CHARACTERISTICS

Bending radius
r=20D

CABLE DESCRIPTION

1.CONDUCTOR
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.

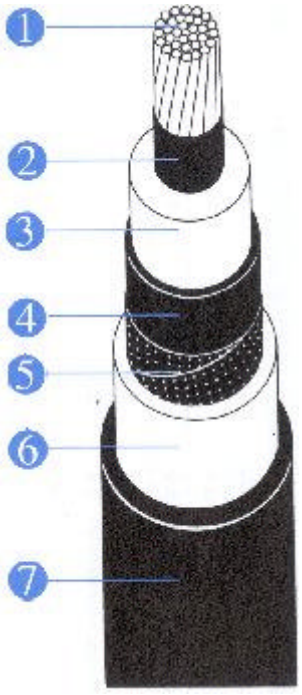
3.INSULATION
Extruded cross-linked polyethlene (XLPE) suitable for operation at a conductor temperature of 90°C.

4.INSULATION SCREEN
Cold strippable screens are supplied as standard but fully bonded screens may be provided if specified.

5. SEMI CONDUCTING TAPE
Semi-conducting water swellable tape

6.METAL SHEATH
Extruded lead sheath with Bitumen coating.

7.OVERSHEATH
Extrude black medium density polyethlene (MDPE) is supplied as standard.



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Constructional Data

Nominal cross-sectional area mm²	Approximate thickness of conductor screen mm	Minimum average thickness of insulation mm	Nominal thickness of lead sheath mm	Minimum average thickness of oversheath mm	Approximate overall diameter mm
120	0.7	8.0	2.2	2.3	43.8
150	0.7	8.0	2.1	2.3	45.0
185	0.7	8.0	2.0	2.3	46.6
240	0.7	8.0	1.9	2.4	49.0
300	0.7	8.0	2.0	2.5	51.7
400	0.7	8.0	2.0	2.6	55.0
500	0.7	8.0	2.1	2.7	58.4
630	0.7	8.0	2.3	2.8	62.6
800	0.7	8.0	2.3	2.9	69.0

Installation Data

Nominal cross-sectional area mm²	Approximate cable weight Kg/m	Minimum bending radius mm	Nominal internal diameter of ducts mm
120	4.5	900	100
150	4.6	900	100
185	4.7	950	100
240	5.0	1000	100
300	5.6	1100	100
400	6.2	1100	100
500	7.1	1200	100
630	8.1	1300	100
800	9.3	1400	125

Electrical Data

Nominal cross-sectional area mm²	Approximate capacitance µF/Km	Maximum DC resistance of conductor at 20°C Ohms/Km	Approximate resistance of lead sheath at 20°C Ohms/Km	Maximum AC resistance of conductor in trefoil formation at 90°C Ohms/Km	Maximum AC resistance flat with 2D between cable centres at 90°C Ohms/Km	Reactance in trefoil formation at 50Hz Ohms/Km	Reactance flat with 2D between cable centres at 50Hz Ohms/Km
120	0.19	0.253	0.85	0.325	0.325	0.138	0.153
150	0.20	0.206	0.86	0.265	0.265	0.134	0.148
185	0.22	0.164	0.86	0.211	0.211	0.129	0.144
240	0.24	0.125	0.86	0.161	0.161	0.124	0.138
300	0.26	0.100	0.78	0.129	0.129	0.119	0.134
400	0.29	0.0778	0.72	0.101	0.101	0.115	0.13
500	0.31	0.0605	0.65	0.0795	0.0788	0.111	0.126
630	0.35	0.0469	0.58	0.0627	0.0618	0.107	0.121
800	0.39	0.0367	0.50	0.0504	0.0492	0.103	0.117

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Ratings Data

Cross-sectional area mm²	Current Ratings			Short Circuit Ratings	
	Laid in ground Amps	Drawn into ducts Amps	Laid in air Amps	3 second short circuit rating at lead alloy E sheath kA	1 second short circuit rating of conductor kA
120	290	285	350	4.0	11.3
150	320	320	395	4.0	14.1
185	365	360	455	4.0	17.4
240	420	415	535	4.0	22.6
300	475	465	615	4.0	28.2
400	545	525	715	4.0	37.6
500	620	590	830	4.0	47.0
630	705	665	960	4.0	59.2
800	790	735	1100	4.0	57.2

Current Rating Conditions:

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

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