

# Medium Voltage Power Cable to BS7870 4.10



XLPE Insulated with Longitudinal Water Barrier, PE Sheathed Single Core Cable for Fixed Installations:

For rated voltage  $U_0/U(U_m)$  6.35/11 (12) kV or 19/33 (36) kV

## Application

Distribution cables for laying direct in ground, ducts or in air.

Generally, for utility power applications, commercial buildings and industrial plant.

## Standards

To BS7870 4.10  
IEC 60502-2

## Construction

Conductor	Copper or Aluminium compacted conductor To BS6360
Conductor screen	single triple head extrusion S/C Screen (cross-linked polyolefin) fully bonded
Insulation	XLPE (cross -linked polyethylene) Dry nitrogen cured
Insulation Screen	Bonded insulation screen (cross-linked polyolefin)
Water block	S/C swellable tape
Screen	Solid bare copper wires /counter Helix copper tape
Sheath	MDPE Black UV resistant

Also available:

Tree-retardant XLPE insulation  
Easy-strip insulation screen



Cross Section Conductor & Screen No.x mm <sup>2</sup> /mm <sup>2</sup>	Min. No. wires	Nominal Insulation mm	Nominal Sheath mm	Nominal O/D mm	min Bending Radius mm	Approx Weight kg/km	Max resistance Conductor DC at 20°C Ω/km	Short circuit Rating Conductor (1sec) kA	Current rating (2)			Reactance 50Hz(5) Ω/km	Capacitance μF/km
									Direct Ground	Single duct	in air		
									A	A	A		
<b>19/33(36)kV Copper Conductor</b>													
1x50/35	6	8	2.1	35	530	1550	0.387	7.2	221	203	260	0.147	0.139
1x70/35	12	8	2.1	36	555	1800	0.268	10	270	254	323	0.133	0.154
1x95/35	15	8	2.1	38	580	2100	0.193	13.6	321	301	392	0.132	0.170
1x120/35	18	8	2.1	40	605	2400	0.153	17.2	365	340	451	0.126	0.184
1x150/35	18	8	2.2	41	630	2700	0.124	21.5	408	379	510	0.123	0.198
1x185/35	30	8	2.2	43	655	3100	0.991	26.5	459	425	585	0.119	0.215
1x240/35	34	8	2.3	45	700	3800	0.0754	34.3	529	488	687	0.114	0.235
1x300/35	34	8	2.4	47	730	4500	0.0601	42.9	596	546	785	0.110	0.255
1x400/35	53	8	2.5	52	780	5300	0.0470	57.2	672	617	906	0.107	0.282
1x500/35	53	8	2.6	55	83	6500	0.0366	71.5	757	690	1038	0.103	0.307
1x630/35	53	8	2.7	59	895	7900	0.0283	90.1	849	774	1197	0.099	0.348
1x800/35	53	8	2.8	63	960	9700	0.0221	>100	936	854	1347	0.096	0.379
1x1000/35	53	8	3.2	68	1060	11800	0.0176	>100	1021	938	1507	0.094	0.429
<b>19/33(36)kV Aluminium Conductor</b>													
1x50/35	6	8	2.1	35	530	1150	0.641	4.7	172	158	202	0.147	0.139
1x70/35	12	8	2.1	36	555	1300	0.443	6.6	210	198	251	0.133	0.154
1x95/35	15	8	2.1	38	580	1400	0.320	9.0	250	236	305	0.132	0.170
1x120/35	15	8	2.1	40	605	1550	0.253	11.3	284	267	351	0.126	0.184
1x150/35	15	8	2.2	41	630	1700	0.2060	14.2	317	298	397	0.123	0.198
1x185/35	30	8	2.2	43	655	1800	0.1640	17.5	359	336	457	0.119	0.215
1x240/35	30	8	2.3	45	700	2100	0.1250	22.7	415	387	537	0.114	0.235
1x300/35	30	8	2.4	47	730	2300	0.1000	28.4	468	434	616	0.110	0.255
1x400/35	53	8	2.5	52	780	2700	0.0778	37.8	534	499	717	0.107	0.282
1x500/35	53	8	2.6	55	830	3100	0.0605	47.2	607	564	832	0.103	0.307
1x630/35	53	8	2.7	59	895	3600	0.0469	59.5	690	640	971	0.099	0.348
1x800/35	53	8	2.8	63	960	4250	0.0367	75.6	774	716	1110	0.096	0.379
1x1000/35	53	8	3.2	68	1060	5100	0.0291	>90	861	798	1267	0.094	0.429

(1) Conductor short circuit based on an initial conductor temperature of 90°C and a final temperature of 250°C

(2) Current rating based on operation at 90°C conductor, three phase AC, trefoil touching or flat formation with one cable diameter clearance. Bonded screens and earthed both ends.

(3) laid in air 25°C

(4) Buried at 0.8m in soil at 15°C with 1.2k.m/W thermal resistivity. Load factor 1.0

(5) PVC ducts touching trefoil formation. One cable in each duct. Filling factor = 20-45%

(6) Calculated inductive reactance per core in trefoil touching formation, screens bonded and earthed at both ends.

#### Temperature Rating Factors

Ambient temp.	15	20	25	30	35	40	45	50	55
Correction Factor Air.	1.07	1.04	1.00	0.96	0.92	0.88	0.83	0.78	0.73
Correction factor ground.	1.00	0.97	0.93	0.89	0.86	0.82	0.77	0.73	0.68

The information contained within this data sheet is for guidance only.

Cable and gland sizes are nominal and may vary according to different manufacturer's tolerances.

Every possible effort is made to ensure that the information contained in this data sheet is correct.

However, we reserve the right to change the information or specification at any time in the light of technical developments or revisions.

References to or extracts from British Standards, current IEE regulations or other regulatory bodies should be verified with these organisations.

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