Cu or Al - XLPE

Overhead Aerial Cables - IEC 60228,60502 - BS 7870-5

APPLICATION

Cable for overhead power distribution systems mainly in public distribution. for rated voltage up to 0.6/1kV.

CABLE DESIGNATION

Al / PE Insulated IEC 60502 0.6/1 (1.2)kv
Al / XLPE Insulated IEC 60502 0.6/1 (1.2)kv
Al / XLPE Insulated BS 7870-5 0.6/1 (1.2)kv

CONSTRUCTION CHARACTERISTICS

Phase conductors and public lighting conductors

Copper (plain annealed): Solid class 1; rigid stranded class 2.
Aluminium: stranded class 2.
Outer layer stranding direction: Right-hand (Z) for RZ and RZ Al.
Outer layer stranding direction: Left-hand (S).

Insulation

XLPE – (Cross-linked polyethylene)

PE - Polyethylene

Assembly of cores

Cores are laid-up helically.
For cables having a messenger, the phase and auxiliary cores are cabled helically around it.
Stranding direction: Left-hand (S)
Stranding direction: Right-hand (Z)

GENERAL CHARACTERISTICS

Construction and test standards	IEC 60228, 60502 BS-EN 60228, BS 7870-5
Rated voltage U_0/U	0.6 / 1 kV
Test voltage	3.5 kV a.c. 5 minutes
Conductor maximum operating temperature	90°C
Maximum short-circuit temperature	250°C ($t \leq 5s$)
Minimum bending radius (mm)	18 x d
Maximum pulling force over conductor (N)	With sleeve over aluminium conductors – 30 x S
Excellent resistance to external agents	

S – conductor cross-section (mm^2) • d – cable outer diameter (mm)

Al / PE Insulated

Cables without Street Lighting

Phase conductor

0.6/1 (1.2) kV

Nominal cross-sectional area	mm²	16 *	16 *	25	35	50	70	95	120	150	185
Number of cores		1	3	3	3	3	3	3	3	3	3
Minimum number of wires		6	6	6	6	6	12	15	15	30	30
Nominal insulation thickness	mm	1.0	1.0	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0
Diameter of insulated core	mm	6.8	6.8	8.5	9.5	11.2	13.0	15.1	16.6	18.4	20.6
Max. dc resistance at 20° C	Ohm/km	1.91	1.91	1.20	0.868	0.641	0.443	0.320	0.253	0.206	0.164
Current rating at still wind, ambient temperature = 30°C, Conductor temperature = 75°C	A	61	61	84	104	129	167	209	246	283	332
Maximum voltage drop	mV/A/m	4.67	4.05	2.54	1.84	1.36	0.95	0.69	0.55	0.46	0.37

Messenger conductor

Nominal cross-sectional area	mm²	25	25	25	25	35	50	70	70	95	120
Minimum number of wires		6	6	6	6	6	6	12	12	15	15
Nominal insulation thickness	mm	1.2	1.2	1.2	1.2	1.2	1.4	1.4	1.4	1.6	1.6
Diameter of insulated core	mm	8.5	8.5	8.5	8.5	9.5	11.2	13.1	13.1	15.1	16.6
Max. dc resistance at 20° C	Ohm/km	1.312	1.312	1.312	1.312	0.943	0.693	0.469	0.469	0.349	0.273
Calculated breaking load	kN	6.4	6.4	6.4	6.4	8.9	12.1	18.0	18.0	24.2	30.8

Completed cable

Approx. overall diameter	mm	15.3	19.0	23.2	25.6	30.0	24.9	40.6	44.1	49.2	54.9
Approx. weight of cable	kg/km	160	290	400	500	680	920	1.270	1.510	1.870	2.340
Packing length	m/drum	1.000	1.000	1.000	1.000	1.000	1.000	500	500	500	500

Cables with Street Lighting

Phase conductor

Nominal cross-sectional area	mm²	25	35	50	70	95 *	120	150	185 *
Number of cores		3	3	3	3	3	3	3	3
Minimum number of wires		6	6	6	12	15	15	30	30
Nominal insulation thickness	mm	1.2	1.2	1.4	1.4	1.6	1.6	1.8	2.0
Diameter of insulated core	mm	8.5	9.5	11.2	13.0	15.1	16.6	18.4	20.6
Max. dc resistance at 20° C	Ohm/km	1.20	0.868	0.641	0.443	0.320	0.253	0.206	0.164
Current rating at still wind, ambient temperature = 30°C, Conductor temperature = 75°C	A	84	104	129	167	209	246	283	332
Maximum voltage drop	mV/A/m	2.54	1.84	1.36	0.95	0.69	0.55	0.46	0.37

Messenger conductor

Nominal cross-sectional area	mm²	25	25	35	50	70	70	95	120
Minimum number of wires		6	6	6	6	12	12	15	15
Nominal insulation thickness	mm	1.2	1.2	1.2	1.4	1.4	1.4	1.6	1.6
Diameter of insulated core	mm	8.5	8.5	9.5	11.2	13.1	13.1	15.1	16.6
Max. dc resistance at 20° C	Ohm/km	1.312	1.312	0.943	0.693	0.469	0.469	0.349	0.273
Calculated breaking load	kN	6.4	6.4	8.9	12.1	18.0	18.0	24.4	30.8

Street Lighting conductor

Nominal cross-sectional area	mm²	16	16	16	16	16	16	16	16
Minimum number of wires		6	6	6	6	6	6	6	6
Nominal insulation thickness	mm	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Diameter of insulated core	mm	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Max. dc resistance at 20° C	Ohm/km	1.91	1.91	1.91	1.91	1.91	1.91	1.91	1.91

Completed cable

Approx. overall diameter	mm	23.2	25.6	30.0	34.9	40.6	44.1	49.2	54.9
Approx. weight of cable	Kg/km	470	560	740	980	1.330	1.580	1.940	2.410
Packing length	m/drum	1.000	1.000	1.000	1.000	500	500	500	500

Al / XLPE Insulated

Cables without Street Lighting

Phase conductor

0.6/ 1 (1.2) kV

Nominal cross-sectional area	mm^2	25	35
Number of cores		3	3
Minimum number of wires		6	6
Nominal insulation thickness	Mm	1.4	1.4
Diameter of insulated core	Mm	8.9	9.9
Max. dc resistance at 20° C	Ohm/km	1.20	0.868
Minimum breaking load	kN	3.5	4.9
Current rating at still wind, ambient temperature = 30°C, Conductor temperature = 75°C	A	84	104

Neutral conductor

Nominal cross-sectional area	mm^2	25	35
Minimum number of wires		6	6
Nominal insulation thickness	mm	1.4	1.4
Diameter of insulated core	mm	8.9	9.9
Max. dc resistance at 20° C	Ohm/km	1.2	0.868
Minimum breaking load	kN	3.5	4.9

Completed cable

Approx. overall diameter	mm	21.5	23.9
Approx. weight of cable	Kg/km	420	550
Packing length	m/drum	1,000	1,000

Cables with Street Lighting

Phase conductor

Nominal cross-sectional area	mm^2	120	185
Number of cores		3	3
Minimum number of wires		15	30
Nominal insulation thickness	Mm	1.7	2.2
Diameter of insulated core	Mm	17.0	21.0
Max. dc resistance at 20° C	Ohm/km	0.253	0.164
Minimum breaking load	kN	16.8	25.9
Current rating at still wind, ambient temperature = 30°C, Conductor temperature = 75°C	A	246	332

Neutral conductor

Nominal cross-sectional area	mm^2	120	185
Minimum number of wires		15	30
Nominal insulation thickness	mm	1.7	2.2
Diameter of insulated core	mm	17.0	21.0
Max. dc resistance at 20° C	Ohm/km	0.253	0.164
Minimum breaking load	kN	16.8	25.9

Street lighting conductor

Nominal cross-section area	mm^2	25	25
Minimum number of wires		6	6
Nominal insulation thickness	mm	1.4	1.4
Diameter of insulated core	mm	8.9	8.9
Max. dc resistance at 20° C	Ohm/km	1.2	1.2

Completed cable

Approx. overall diameter	mm	43.8	50.7
Approx. weight of cable	Kg/km	1,800	2,700
Packing length	m/drum	500	500

Al / XLPE Insulated

Cables without Street Lighting

0.6/1 (1.2) kV

Phase conductor

Nominal cross-sectional area	mm²	25	35	50	70	95	25	35	50	70	95	120
Number of cores		1	1	1	1	1	3	3	3	3	3	3
Minimum number of wires		6	6	6	12	15	6	6	6	12	15	15
Nominal insulation thickness	mm	1.3	1.3	1.5	1.5	1.7	1.3	1.3	1.5	1.5	1.7	1.7
Diameter of insulated core	mm	8.8	9.8	11.5	13.2	15.3	8.8	9.8	11.5	13.2	15.3	16.8
Max. dc resistance at 20° C	Ohm/km	1.20	0.868	0.641	0.443	0.320	1.20	0.868	0.641	0.443	0.320	0.253
Current rating at still wind, ambient Temperature = 30°C, Conductor temperature = 75°C	A	84	104	129	167	209	84	104	129	167	209	283

Neutral conductor

Nominal cross-sectional area	mm²	25	35	50	70	95	25	35	50	70	95	120
Minimum number of wires		6	6	6	12	15	6	6	6	12	15	15
Nominal insulation thickness	mm	1.3	1.3	1.5	1.5	1.7	1.3	1.3	1.5	1.5	1.7	1.7
Diameter of insulated core	mm	8.8	9.8	11.5	13.2	15.3	8.8	9.8	11.5	13.2	15.3	16.8
Max. dc resistance at 20° C	Ohm/km	1.20	0.868	0.641	0.443	0.320	1.20	0.868	0.641	0.443	0.320	0.253

Completed cable

Minimum breaking load	kN	8.5	11.2	15.2	22.0	30.6	16.4	22.4	30.4	44.0	61.2	77.6
Approx. overall diameter	mm	17.6	19.6	23.0	26.4	30.6	21.3	23.7	27.8	31.9	36.9	40.6
Approx. weight of cable	kg/km	210	270	360	500	680	410	550	730	1000	1370	1690
Packing length	m/drum	1,000	1,000	1,000	1,000	500	1,000	1,000	1,000	1,000	500	500

Cables with Street Lighting

Phase conductor

Nominal cross-sectional area	mm²	50	70	95
Number of cores		3	3	3
Minimum number of wires		6	12	15
Nominal insulation thickness	mm	1.5	1.5	1.7
Diameter of insulated core	mm	11.5	13.2	15.3
Max. dc resistance at 20° C	Ohm/km	0.641	0.443	0.320
Current rating at still wind, ambient Temperature = 30°C, Conductor temperature = 75°C	A	129	167	209

Neutral conductor

Nominal cross-sectional area	mm²	50	70	95
Minimum number of wires		6	12	15
Nominal insulation thickness	mm	1.5	1.5	1.7
Diameter of insulated core	mm	11.5	11.5	15.3
Max. dc resistance at 20° C	Ohm/km	0.641	0.443	0.320

Street lighting conductor

Nominal cross-sectional area	mm²	25	25	25
Minimum number of wires		6	6	6
Nominal insulation thickness	mm	1.3	1.3	1.3
Diameter of insulated core	mm	8.8	8.8	8.8
Max. dc resistance at 20° C	Ohm/km	1.20	1.20	1.20

Completed cable

Minimum breaking load	kN	34.5	48.1	65.3
Approx. overall diameter	mm	29.8	33.6	38.2
Approx. weight of cable	kg/km	830	1100	1470
Packing length	m/drum	1,000	1,000	500