

## MEDIUM VOLTAGE CABLES

### Physical & electrical characteristics

Aluminium 6.35/11kV – Single core light duty screened unarmoured													
Product code: 1CALX11LD													
Nominal conductor area mm <sup>2</sup>	25	35	50	70	95	120	150	185	240	300	400	500	630
Nominal conductor diameter mm	6.1	7.1	8.1	9.8	11.5	12.9	14.2	16.0	18.1	20.6	23.5	26.6	30.2
Nominal insulation thickness mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Approx cable diameter mm	21.4	22.4	23.4	25.1	26.8	28.2	29.7	31.5	33.8	36.7	40.4	43.7	47.5
Approx mass kg/100m	55	65	70	80	90	100	110	125	150	175	210	245	295
Max pulling tension on conductor kN	1.3	1.8	2.5	3.5	4.8	6.0	7.5	9.3	12	15	20	25	25
Max pulling tension on stocking grip kN	1.3	1.8	1.9	2.2	2.5	2.8	3.1	3.5	4.0	4.7	5.7	6.7	7.9
Min bending radius* during installation mm	380	400	420	450	480	510	540	570	610	660	730	790	860
Min bending radius* set in position mm	260	270	280	300	320	340	360	380	410	440	480	520	570
Max conductor resistance, dc @ 20°C Ohm/km	1.20	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	1.54	1.11	0.822	0.568	0.411	0.325	0.265	0.211	0.161	0.130	0.102	0.0803	0.0637
Inductance, trefoil touching mH/km	0.478	0.455	0.436	0.402	0.382	0.369	0.359	0.344	0.332	0.322	0.315	0.305	0.296
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.150	0.143	0.137	0.126	0.120	0.116	0.113	0.108	0.104	0.101	0.0990	0.0960	0.0930
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	2.37+ j0.0836	1.80+ j0.0774	1.57+ j0.0726	1.38+ j0.0633	1.25+ j0.0583	1.19+ j0.0551	1.14+ j0.0523	1.10+ j0.0485	1.06+ j0.0454	1.03+ j0.0430	1.01+ j0.0413	0.996+ j0.0389	0.982+ j0.0366
Capacitance, phase to earth µF/km	0.210	0.232	0.253	0.289	0.324	0.352	0.380	0.416	0.460	0.516	0.586	0.650	0.724
Min insulation resistance @ 20°C MOhm.km	12,000	11,000	10,000	8,900	7,900	7,200	6,600	6,000	5,400	4,900	4,300	3,900	3,400
Electric stress at conductor screen kV/mm	2.65	2.56	2.49	2.40	2.33	2.29	2.25	2.22	2.18	2.14	2.11	2.08	2.06
Charging current @ rated voltage & 50 Hz A/phase/km	0.419	0.463	0.505	0.576	0.646	0.702	0.758	0.830	0.918	1.03	1.17	1.30	1.44
Short circuit rating	Phase conductor kA, 1 sec	2.4	3.3	4.7	6.6	9.0	11.3	14.2	17.5	22.7	28.3	37.8	59.5
	Metallic screen kA, 1 sec	2.4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Continuous current rating	In ground, direct buried A	115	135	160	195	230	260	295	330	385	435	495	640
	In ground, in singleway ducts A	115	135	155	190	225	255	285	320	365	410	465	595
	In free air, unenclosed & spaced from wall A	115	135	165	205	250	285	325	375	445	510	600	810

The cables described in this technical manual are designed to be used for the supply of electrical energy in fixed applications up to the rated voltages at a nominal power frequency between 49Hz and 61Hz. All values in this catalogue are for XLPE cables only. \*Increased radius required for HDPE and nylon incorporating designs.