

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 6.35/11kV – Single core heavy duty screened unarmoured													
Product code: 1CALX11HD													
Nominal conductor area mm ²	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	24.7	26.4	28.1	29.5	31.0	32.8	35.1	38.0	41.7	45.0	48.8
Approx mass kg/100m	55	65	80	100	130	145	155	170	195	220	255	290	340
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	2.1	2.4	2.8	3.0	3.4	3.8	4.3	5.1	6.1	7.1	8.3
Min bending radius* during installation mm	380	400	450	480	510	530	560	590	630	680	750	810	880
Min bending radius* set in position mm	260	270	300	320	340	350	370	390	420	460	500	540	590
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	0.0802	0.0636
Inductance, trefoil touching mH/km	0.478	0.455	0.447	0.412	0.392	0.378	0.368	0.352	0.340	0.330	0.322	0.312	0.302
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.150	0.143	0.141	0.129	0.123	0.119	0.116	0.111	0.107	0.104	0.101	0.0979	0.0948
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	2.37+ j0.0836	1.71+ j0.0774	1.24+ j0.0747	0.871+ j0.0653	0.635+ j0.0601	0.535+ j0.0568	0.488+ j0.0539	0.446+ j0.0500	0.407+ j0.0469	0.382+ j0.0443	0.360+ j0.0425	0.343+ j0.0400	0.330+ j0.0376
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	3.3	4.7	6.6	8.9	10	10	10	10	10	10	10
Continuous current rating	In ground, direct buried A	115	135	160	195	230	260	290	330	380	425	480	615
	In ground, in singleway ducts A	115	135	155	190	220	245	270	300	340	375	420	525
	In free air, unenclosed & spaced from wall A	115	135	165	210	250	290	330	375	440	510	590	790

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.