

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 3.8/6.6kV – Single core light duty screened unarmoured													
Product code: 1CALX6LD													
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	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0	3.2	3.2
Approx cable diameter mm	19.6	20.6	21.6	23.3	25.0	26.4	27.7	29.7	32.0	35.1	39.2	43.1	46.9
Approx mass kg/100m	50	60	65	70	85	90	100	120	140	165	200	240	290
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	1.5	1.6	1.9	2.2	2.4	2.7	3.1	3.6	4.3	5.4	6.5	7.7
Min bending radius* during installation mm	350	370	390	420	450	470	500	530	580	630	700	770	840
Min bending radius* set in position mm	230	250	260	280	300	320	330	360	380	420	470	520	560
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	0.0638
Inductance, trefoil touching mH/km	0.460	0.437	0.419	0.386	0.367	0.355	0.344	0.331	0.321	0.313	0.309	0.303	0.293
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.144	0.137	0.132	0.121	0.115	0.111	0.108	0.104	0.101	0.0984	0.0970	0.0950	0.0922
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	2.37+ j0.0764	1.80+ j0.0706	1.57+ j0.0662	1.38+ j0.0575	1.25+ j0.0530	1.19+ j0.0500	1.14+ j0.0476	1.10+ j0.0441	1.06+ j0.0418	1.03+ j0.0401	1.01+ j0.0395	0.996+ j0.0379	0.982+ j0.0357
Capacitance, phase to earth µF/km	0.265	0.295	0.323	0.371	0.418	0.456	0.494	0.543	0.582	0.607	0.651	0.682	0.761
Min insulation resistance @ 20°C MOhm.km	9,900	8,800	8,000	6,900	6,100	5,600	5,100	4,600	4,300	4,100	3,800	3,700	3,300
Electric stress at conductor screen kV/mm	2.00	1.94	1.90	1.84	1.80	1.78	1.76	1.73	1.65	1.52	1.41	1.32	1.30
Charging current @ rated voltage & 50 Hz A/phase/km	0.316	0.352	0.385	0.443	0.499	0.545	0.590	0.648	0.695	0.725	0.777	0.814	0.909
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	110	135	160	200	245	285	325	375	440	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.