

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 1.9/3.3kV – Single core light duty screened unarmoured													
Product code: 1CALX3LD													
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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.4
Approx cable diameter mm	18.6	19.6	20.6	22.3	24.0	25.4	26.7	28.5	30.8	33.5	37.2	40.9	45.1
Approx mass kg/100m	45	55	60	70	80	90	100	110	135	155	190	225	280
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	1.2	1.3	1.5	1.7	2.0	2.3	2.5	2.8	3.3	3.9	4.8	5.8	7.1
Min bending radius* during installation mm	330	350	370	400	430	460	480	510	550	600	670	740	810
Min bending radius* set in position mm	220	240	250	270	290	300	320	340	370	400	450	490	540
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	0.162	0.130	0.102	0.0805	0.0640
Inductance, trefoil touching mH/km	0.449	0.427	0.409	0.377	0.359	0.347	0.337	0.323	0.313	0.303	0.298	0.292	0.285
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.141	0.134	0.129	0.118	0.113	0.109	0.106	0.101	0.0983	0.0953	0.0935	0.0916	0.0896
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	2.37+ j0.0720	1.80+ j0.0665	1.57+ j0.0623	1.38+ j0.0540	1.25+ j0.0498	1.19+ j0.0471	1.14+ j0.0448	1.10+ j0.0415	1.06+ j0.0390	1.03+ j0.0367	1.01+ j0.0357	0.996+ j0.0344	0.982+ j0.0332
Capacitance, phase to earth µF/km	0.316	0.353	0.388	0.448	0.507	0.554	0.601	0.663	0.737	0.824	0.943	0.962	0.993
Min insulation resistance @ 20°C MOhm.km	8,300	7,300	6,600	5,700	5,000	4,600	4,200	3,800	3,400	3,000	2,700	2,600	2,500
Electric stress at conductor screen kV/mm	1.19	1.16	1.14	1.11	1.09	1.08	1.07	1.06	1.05	1.03	1.02	0.929	0.850
Charging current @ rated voltage & 50 Hz A/phase/km	0.189	0.211	0.232	0.267	0.303	0.331	0.359	0.395	0.440	0.492	0.563	0.574	0.593
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	430	495	635
	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	320	370	440	505	595	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.