

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 12.7/22kV – Single core light duty screened unarmoured												
Product code: 1CALX22LD												
Nominal conductor area mm ²	35	50	70	95	120	150	185	240	300	400	500	630
Nominal conductor diameter mm	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	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Approx cable diameter mm	26.6	27.6	29.5	31.2	32.8	34.1	36.1	38.2	41.1	44.8	48.1	51.9
Approx mass kg/100m	80	85	95	110	120	130	150	170	200	235	275	330
Max pulling tension on conductor kN	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	1.8	2.5	3.1	3.4	3.8	4.1	4.6	5.1	5.9	7.0	8.1	9.4
Min bending radius* during installation mm	480	500	530	560	590	610	650	690	740	810	860	930
Min bending radius* set in position mm	320	330	350	370	390	410	430	460	490	540	580	620
Max conductor resistance, dc @ 20°C Ohm/km	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	1.11	0.822	0.568	0.411	0.325	0.265	0.211	0.161	0.130	0.102	0.0800	0.0634
Inductance, trefoil touching mH/km	0.491	0.471	0.435	0.414	0.400	0.388	0.372	0.358	0.346	0.337	0.326	0.315
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.154	0.148	0.137	0.130	0.126	0.122	0.117	0.112	0.109	0.106	0.102	0.0989
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	1.80+ j0.0908	1.57+ j0.0853	1.38+ j0.0751	1.25+ j0.0693	1.19+ j0.0654	1.14+ j0.0622	1.10+ j0.0577	1.06+ j0.0540	1.03+ j0.0509	1.01+ j0.0485	0.996+ j0.0455	0.982+ j0.0426
Capacitance, phase to earth µF/km	0.165	0.178	0.200	0.223	0.240	0.258	0.280	0.308	0.343	0.386	0.426	0.472
Min insulation resistance @ 20°C MOhm.km	16,000	14,000	13,000	11,000	10,000	9,700	8,900	8,100	7,300	6,500	5,900	5,300
Electric stress at conductor screen kV/mm	3.63	3.50	3.33	3.21	3.13	3.06	2.99	2.92	2.85	2.78	2.73	2.68
Charging current @ rated voltage & 50 Hz A/phase/km	0.657	0.710	0.799	0.888	0.958	1.03	1.12	1.23	1.37	1.54	1.70	1.88
Short circuit rating	Phase conductor kA, 1 sec	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	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	135	160	195	230	260	295	330	385	435	495	640
	In ground, in singleway ducts A	135	155	190	225	255	285	320	370	415	470	600
	In free air, unenclosed & spaced from wall A	140	170	210	255	295	330	380	450	520	605	815

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.