

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 12.7/22kV – Three core heavy duty screened unarmoured									
Product code: 3CALX22HD									
Nominal conductor area mm ²	35	50	70	95	120	150	185	240	300
Nominal conductor diameter mm	7.1	8.1	9.8	11.5	12.9	14.2	16.0	18.1	20.6
Nominal insulation thickness mm	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Approx cable diameter mm	54.7	57.0	60.9	64.7	67.8	71.0	74.9	80.0	86.2
Approx mass kg/100m	230	260	310	370	415	455	510	590	685
Max pulling tension on conductors kN	5.3	7.5	11	14	18	23	25	25	25
Max pulling tension on stocking grip kN	5.3	7.5	11	14	16	18	20	22	25
Min bending radius* during installation mm	980	1030	1100	1170	1220	1280	1350	1440	1550
Min bending radius* set in position mm	660	680	730	780	810	850	900	960	1030
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
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
Inductance mH/km	0.437	0.419	0.386	0.367	0.354	0.343	0.329	0.317	0.306
Inductive reactance, @ 50Hz Ohm/km	0.137	0.132	0.121	0.115	0.111	0.108	0.103	0.0995	0.0962
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	3.21+ j0.0911	2.46+ j0.0856	1.76+ j0.0754	1.26+ j0.0695	1.09+ j0.0657	1.05+ j0.0624	1.01+ j0.0579	0.967+ j0.0542	0.942+ j0.0511
Capacitance, phase to earth µF/km	0.165	0.179	0.201	0.223	0.241	0.259	0.281	0.309	0.344
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
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
Charging current @ rated voltage & 50 Hz A/phase/km	0.659	0.712	0.802	0.891	0.962	1.03	1.12	1.23	1.37
Short circuit rating	Phase conductor kA, 1 sec	3.3	4.7	6.6	9.0	11.3	14.2	17.5	22.7
	Metallic screen kA, 1 sec	3.5	4.6	6.3	8.9	10	10	10	10
Continuous current rating	In ground, direct buried A	125	145	190	225	250	285	325	420
	In ground, in singleway ducts A	110	130	160	190	225	250	280	365
	In free air, unenclosed & spaced from wall A	125	145	190	230	265	305	350	470

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.