

## MEDIUM VOLTAGE CABLES

### Physical & electrical characteristics

Aluminium 3.8/6.6kV – Three core light duty screened unarmoured										
Product code: 3CALX6LD										
Nominal conductor area mm <sup>2</sup>	25	35	50	70	95	120	150	185	240	300
Nominal conductor diameter mm	6.1	7.1	8.1	9.8	11.5	12.9	14.2	16.0	18.1	20.6
Nominal insulation thickness mm	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8
Approx cable diameter mm	38.3	40.7	43.1	46.9	50.8	53.9	57.2	61.2	66.5	73.3
Approx mass kg/100m	120	140	160	195	230	265	305	355	430	525
Max pulling tension on conductors kN	3.8	5.3	7.5	11	14	18	23	25	25	25
Max pulling tension on stocking grip kN	3.8	5.3	6.5	7.7	9.0	10	11	13	15	19
Min bending radius* during installation mm	690	730	780	840	910	970	1030	1100	1200	1320
Min bending radius* set in position mm	460	490	520	560	610	650	690	730	800	880
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
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
Inductance mH/km	0.394	0.375	0.360	0.332	0.317	0.307	0.298	0.287	0.279	0.273
Inductive Reactance, @ 50Hz Ohm/km	0.124	0.118	0.113	0.104	0.0994	0.0964	0.0937	0.0901	0.0876	0.0857
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	4.84+ j0.0766	3.60+ j0.0709	3.37+ j0.0664	3.18+ j0.0577	2.84+ j0.0531	2.60+ j0.0502	2.55+ j0.0477	2.35+ j0.0442	2.18+ j0.0420	1.92+ j0.0402
Capacitance, phase to earth µF/km	0.266	0.296	0.324	0.372	0.420	0.458	0.496	0.545	0.584	0.610
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
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
Charging current @ rated voltage & 50 Hz A/phase/km	0.317	0.353	0.387	0.444	0.501	0.547	0.592	0.650	0.697	0.728
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
	Metallic screen kA, 1 sec	2.3	3.0	3.0	3.0	3.3	3.5	3.5	3.8	4.6
Continuous current rating	In ground, direct buried A	110	130	155	190	225	255	285	320	420
	In ground, in singleway ducts A	95	110	130	160	185	215	245	275	360
	In free air, unenclosed & spaced from wall A	105	125	145	180	220	255	290	330	450

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.