

## MEDIUM VOLTAGE CABLES

### Physical & electrical characteristics

Aluminium 6.35/11kV – Three core heavy duty screened unarmoured										
Product code: 3CALX11HD										
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	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Approx cable diameter mm	42.5	44.8	47.4	51.2	55.1	58.2	61.3	65.3	70.3	76.3
Approx mass kg/100m	145	165	195	240	300	335	375	425	500	585
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	7.5	9.2	11	12	13	15	17	20
Min bending radius* during installation mm	770	810	850	920	990	1050	1100	1170	1270	1370
Min bending radius* set in position mm	510	540	570	610	660	700	740	780	840	920
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	0.416	0.396	0.380	0.350	0.333	0.322	0.313	0.300	0.290	0.282
Inductive reactance, @ 50Hz Ohm/km	0.131	0.124	0.119	0.110	0.105	0.101	0.0983	0.0944	0.0912	0.0885
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	4.18+ j0.0839	3.39+ j0.0777	2.46+ j0.0728	1.70+ j0.0635	1.26+ j0.0585	1.09+ j0.0553	1.05+ j0.0525	1.01+ j0.0487	0.967+ j0.0456	0.942+ j0.0431
Capacitance, phase to earth µF/km	0.211	0.233	0.254	0.290	0.325	0.353	0.381	0.417	0.462	0.518
Min insulation resistance @ 20°C MOhm.km	12,000	11,000	10,000	8,900	7,900	7,200	6,600	6,000	5,400	4,900
Electric stress at conductor screen kV/mm	2.65	2.56	2.49	2.40	2.33	2.29	2.25	2.22	2.18	2.14
Charging current @ rated voltage & 50 Hz A/phase/km	0.420	0.465	0.507	0.578	0.648	0.704	0.760	0.833	0.921	1.03
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	2.8	3.3	4.6	6.6	8.9	10	10	10	10
Continuous current rating	In ground, direct buried A	110	130	155	190	225	255	285	325	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	130	150	190	230	265	300	345	465

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.