

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 6.35/11kV – Three core heavy duty screened armoured										
Product code: 3CALX11HDA										
Nominal conductor area mm ²	25	35	50	70	95	120	150	185	240	
Nominal conductor diameter mm	6.1	7.1	8.1	9.8	11.5	12.9	14.2	16.0	18.1	
Nominal insulation thickness mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	
Approx cable diameter mm	51.2	53.7	56.2	60.4	64.4	67.7	71.1	76.5	81.8	
Approx mass kg/100m	380	415	460	525	610	665	725	880	990	
Max pulling tension on conductors kN	3.8	5.3	7.5	11	14	18	23	25	25	
Max pulling tension on stocking grip kN	3.8	5.3	7.5	11	14	16	18	20	23	
Max pulling tension on amour wires kN	11	12	13	15	17	19	21	24	25	
Min bending radius* during installation mm	920	970	1010	1090	1160	1220	1280	1380	1470	
Min bending radius* set in position mm	610	640	670	720	770	810	850	920	980	
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	
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	
Inductance mH/km	0.416	0.396	0.380	0.350	0.333	0.322	0.313	0.300	0.290	
Inductive reactance, @ 50Hz Ohm/km	0.131	0.124	0.119	0.110	0.105	0.101	0.0983	0.0944	0.0912	
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	
Capacitance, phase to earth µF/km	0.211	0.233	0.254	0.290	0.325	0.353	0.381	0.417	0.462	
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	
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	
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	
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
Contin- uous current rating	In ground, direct buried A	110	130	155	190	225	255	285	325	370
	In ground, in singleway ducts A	95	110	130	160	185	215	245	275	320
	In free air, unenclosed & spaced from wall A	105	130	150	190	230	265	300	345	405

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.