

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 1.9/3.3kV – Three core heavy duty screened armoured										
Product code: 3CALX3HDA										
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	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Approx cable diameter mm	43.0	45.4	49.6	53.6	57.5	60.9	64.2	68.4	73.4	
Approx mass kg/100m	270	300	385	455	520	580	640	705	810	
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	10	12	13	14	16	19	
Max pulling tension on armour wires kN	7.4	8.3	9.8	12	13	15	17	19	22	
Min bending radius* during installation mm	770	820	890	970	1040	1100	1160	1230	1320	
Min bending radius* set in position mm	520	550	590	640	690	730	770	820	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	
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	0.381	0.363	0.349	0.321	0.307	0.298	0.290	0.279	0.270	
Inductive reactance, @ 50Hz Ohm/km	0.120	0.114	0.110	0.101	0.0964	0.0935	0.0910	0.0875	0.0849	
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	4.48+ j0.0722	3.39+ j0.0668	2.37+ j0.0626	1.70+ j0.0542	1.26+ j0.0499	1.09+ j0.0472	1.05+ j0.0449	1.01+ j0.0416	0.967+ j0.0391	
Capacitance, phase to earth µF/km	0.317	0.354	0.390	0.449	0.509	0.556	0.604	0.665	0.740	
Min insulation resistance @ 20°C MOhm.km	8,300	7,300	6,600	5,700	5,000	4,600	4,200	3,800	3,400	
Electric stress at conductor screen kV/mm	1.19	1.16	1.14	1.11	1.09	1.08	1.07	1.06	1.05	
Charging current @ rated voltage & 50 Hz A/phase/km	0.189	0.212	0.233	0.268	0.304	0.332	0.360	0.397	0.442	
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	2.5	3.3	4.8	6.6	8.9	10	10	10	10
Continuous current rating	In ground, direct buried A	110	125	150	185	225	255	285	320	375
	In ground, in singleway ducts A	90	110	130	160	185	215	240	270	315
	In free air, unenclosed & spaced from wall A	105	125	145	180	220	265	300	340	400

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.