

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 19/33kV – Three core heavy duty screened armoured									
Product code: 3CALX33HDA									
Nominal conductor area mm ²	50	70	95	120	150				
Nominal conductor diameter mm	8.1	9.8	11.5	12.9	14.2				
Nominal insulation thickness mm	8.0	8.0	8.0	8.0	8.0				
Approx cable diameter mm	80.0	84.1	88.0	91.3	94.6				
Approx mass kg/100m	835	920	1010	1080	1150				
Max pulling tension on conductors kN	7.5	11	14	18	23				
Max pulling tension on stocking grip kN	7.5	11	14	18	23				
Max pulling tension on armour wires kN	25	25	25	25	25				
Min bending radius* during installation mm	1440	1510	1580	1640	1700				
Min bending radius* set in position mm	960	1010	1060	1100	1140				
Max conductor resistance, dc @ 20°C Ohm/km	0.641	0.443	0.320	0.253	0.206				
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	0.822	0.568	0.411	0.325	0.265				
Inductance mH/km	0.457	0.422	0.401	0.387	0.375				
Inductive reactance, @ 50Hz Ohm/km	0.144	0.133	0.126	0.121	0.118				
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	2.46+ j0.0981	1.76+ j0.0871	1.28+ j0.0805	1.09+ j0.0762	1.05+ j0.0724				
Capacitance, phase to earth µF/km	0.139	0.155	0.171	0.183	0.196				
Min insulation resistance @ 20°C MOhm.km	18,000	16,000	15,000	14,000	13,000				
Electric stress at conductor screen kV/mm	4.08	3.85	3.67	3.56	3.46				
Charging current @ rated voltage & 50 Hz A/phase/km	0.831	0.927	1.02	1.09	1.17				
Short circuit rating	Phase conductor kA, 1 sec	4.7	6.6	9.0	11.3	14.2			
	Metallic screen kA, 1 sec	4.6	6.3	8.6	10	10			
Continuous current rating	In ground, direct buried A	145	190	225	255	285			
	In ground, in singleway ducts A	130	160	195	225	250			
	In free air, unenclosed & spaced from wall A	150	185	235	270	305			

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.