

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 19/33kV – Three core heavy duty screened unarmoured									
Product code: 3CALX33HD									
Nominal conductor area mm ²	50	70	95	120	150	185	240	300	
Nominal conductor diameter mm	8.1	9.8	11.5	12.9	14.2	16.0	18.1	20.6	
Nominal insulation thickness mm	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Approx cable diameter mm	68.6	72.4	76.3	79.4	82.5	86.5	91.5	97.6	
Approx mass kg/100m	355	410	470	520	565	630	715	820	
Max pulling tension on conductors kN	7.5	11	14	18	23	25	25	25	
Max pulling tension on stocking grip kN	7.5	11	14	18	23	25	25	25	
Min bending radius* during installation mm	1230	1300	1370	1430	1490	1560	1650	1760	
Min bending radius* set in position mm	820	870	920	950	990	1040	1100	1170	
Max conductor resistance, dc @ 20°C Ohm/km	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	0.822	0.568	0.411	0.325	0.265	0.211	0.161	0.130	
Inductance mH/km	0.457	0.422	0.401	0.387	0.375	0.359	0.345	0.332	
Inductive reactance, @ 50Hz Ohm/km	0.144	0.133	0.126	0.121	0.118	0.113	0.108	0.104	
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	1.01+ j0.0674	0.967+ j0.0632	0.942+ j0.0593	
Capacitance, phase to earth µF/km	0.139	0.155	0.171	0.183	0.196	0.211	0.231	0.255	
Min insulation resistance @ 20°C MOhm.km	18,000	16,000	15,000	14,000	13,000	12,000	11,000	9,900	
Electric stress at conductor screen kV/mm	4.08	3.85	3.67	3.56	3.46	3.36	3.26	3.16	
Charging current @ rated voltage & 50 Hz A/phase/km	0.831	0.927	1.02	1.09	1.17	1.26	1.38	1.52	
Short circuit rating	Phase conductor kA, 1 sec	4.7	6.6	9.0	11.3	14.2	17.5	22.7	28.3
	Metallic screen kA, 1 sec	4.6	6.3	8.6	10	10	10	10	10
Continuous current rating	In ground, direct buried A	145	190	225	255	285	320	380	428
	In ground, in singleway ducts A	130	160	195	225	250	280	314	354
	In free air, unenclosed & spaced from wall A	150	185	235	270	305	350	430	491

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.