

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 19/33kV – Single core light duty screened unarmoured												
Product code: 1CALX33LD												
Nominal conductor area mm ²	50	70	95	120	150	185	240	300	400	500	630	
Nominal conductor diameter mm	8.1	9.8	11.5	12.9	14.2	16.0	18.1	20.6	23.5	26.6	30.2	
Nominal insulation thickness mm	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Approx cable diameter mm	33.0	34.7	36.6	38.0	39.5	41.3	43.6	46.5	50.2	53.5	57.3	
Approx mass kg/100m	110	120	135	150	165	180	205	235	275	320	375	
Max pulling tension on conductor kN	2.5	3.5	4.8	6.0	7.5	9.3	12	15	20	25	25	
Max pulling tension on stocking grip kN	2.5	3.5	4.7	5.0	5.5	6.0	6.7	7.6	8.8	10	11	
Min bending radius* during installation mm	590	630	660	680	710	740	790	840	900	960	1030	
Min bending radius* set in position mm	400	420	440	460	470	500	520	560	600	640	690	
Max conductor resistance, dc @ 20°C Ohm/km	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	0.0778	0.0605	0.0469	
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	0.822	0.568	0.411	0.325	0.265	0.211	0.161	0.129	0.101	0.0797	0.0630	
Inductance, trefoil touching mH/km	0.508	0.469	0.447	0.431	0.419	0.401	0.386	0.372	0.361	0.348	0.336	
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.160	0.147	0.140	0.136	0.132	0.126	0.121	0.117	0.113	0.109	0.105	
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	1.57+ j0.0978	1.38+ j0.0868	1.25+ j0.0802	1.19+ j0.0759	1.14+ j0.0722	1.10+ j0.0672	1.06+ j0.0629	1.03+ j0.0591	1.01+ j0.0561	0.996+ j0.0526	0.982+ j0.0492	
Capacitance, phase to earth µF/km	0.139	0.155	0.170	0.183	0.195	0.211	0.230	0.254	0.284	0.312	0.344	
Min insulation resistance @ 20°C MOhm.km	18,000	16,000	15,000	14,000	13,000	12,000	11,000	9,900	8,800	8,000	7,200	
Electric stress at conductor screen kV/mm	4.08	3.85	3.67	3.56	3.46	3.36	3.26	3.16	3.06	2.99	2.93	
Charging current @ rated voltage & 50 Hz A/phase/km	0.828	0.923	1.02	1.09	1.16	1.26	1.37	1.52	1.70	1.86	2.05	
Short circuit rating	Phase conductor kA, 1 sec	4.7	6.6	9.0	11.3	14.2	17.5	22.7	28.3	37.8	47.2	59.5
	Metallic screen kA, 1 sec	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Continuous current rating	In ground, direct buried A	160	195	230	265	295	330	385	435	495	565	645
	In ground, in singleway ducts A	155	190	225	255	285	320	370	415	470	535	605
	In free air, unenclosed & spaced from wall A	170	215	260	295	335	385	455	520	610	705	820

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.