

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Aluminium 19/33kV – Single core heavy duty screened unarmoured												
Product code: 1CALX33HD												
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	34.3	36.2	37.9	39.5	40.8	42.8	44.9	47.8	51.5	54.8	58.6	
Approx mass kg/100m	125	150	175	195	210	230	250	280	320	365	420	
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	4.8	5.5	5.8	6.4	7.1	8.0	9.3	10	12	
Min bending radius* during installation mm	620	650	680	710	730	770	810	860	930	990	1050	
Min bending radius* set in position mm	410	430	460	470	490	510	540	570	620	660	700	
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	0.0629	
Inductance, trefoil touching mH/km	0.516	0.478	0.454	0.439	0.426	0.408	0.392	0.378	0.366	0.353	0.340	
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.162	0.150	0.143	0.138	0.134	0.128	0.123	0.119	0.115	0.111	0.107	
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	1.24+ j0.0992	0.871+ j0.0881	0.635+ j0.0815	0.535+ j0.0771	0.488+ j0.0734	0.446+ j0.0683	0.407+ j0.0640	0.382+ j0.0601	0.360+ j0.0570	0.343+ j0.0534	0.330+ j0.0500	
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	4.7	6.6	8.9	10	10	10	10	10	10	10	
Continuous current rating	In ground, direct buried A	160	195	230	260	290	330	380	425	485	550	620
	In ground, in singleway ducts A	155	190	220	245	275	305	345	385	435	485	540
	In free air, unenclosed & spaced from wall A	175	215	260	295	335	385	450	515	600	690	800

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.