

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Copper 6.35/11kV – Single core heavy duty screened unarmoured													
Product code: 1CCUX11HD													
Nominal conductor area mm ²	25	35	50	70	95	120	150	185	240	300	400	500	630
Nominal conductor diameter mm	6.1	7.0	8.2	9.8	11.5	12.9	14.3	16.1	18.2	20.6	23.5	26.6	30.3
Nominal insulation thickness mm	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
Approx cable diameter mm	21.4	23.7	24.8	27.1	28.1	29.5	31.1	32.9	35.3	38.0	41.7	45.0	48.9
Approx mass kg/100m	80	100	125	165	195	220	245	285	340	405	495	600	735
Max pulling tension on conductor kN	1.8	2.5	3.5	4.9	6.7	8.4	11	13	17	21	25	25	25
Max pulling tension on stocking grip kN	1.6	2.0	2.1	2.6	2.8	3.1	3.4	3.8	4.4	5.1	6.1	7.1	8.4
Min bending radius* during installation mm	390	430	450	490	510	530	560	590	630	680	750	810	880
Min bending radius* set in position mm	260	280	300	330	340	350	370	390	420	460	500	540	590
Max conductor resistance, dc @ 20°C Ohm/km	0.727	0.524	0.387	0.268	0.193	0.153	0.124	0.0991	0.0754	0.0601	0.0470	0.0366	0.0283
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	0.927	0.668	0.494	0.342	0.247	0.196	0.159	0.128	0.0980	0.0790	0.0630	0.0507	0.0413
Inductance, trefoil touching mH/km	0.477	0.468	0.447	0.418	0.392	0.375	0.364	0.352	0.339	0.330	0.320	0.310	0.302
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.150	0.147	0.140	0.131	0.123	0.118	0.114	0.110	0.107	0.104	0.101	0.0974	0.0948
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	1.51+ j0.0833	1.09+ j0.0801	0.783+ j0.0745	0.560+ j0.0663	0.475+ j0.0601	0.435+ j0.0559	0.406+ j0.0529	0.381+ j0.0498	0.358+ j0.0467	0.343+ j0.0443	0.330+ j0.0421	0.320+ j0.0395	0.312+ j0.0375
Capacitance, phase to earth µF/km	0.211	0.230	0.254	0.289	0.324	0.353	0.382	0.418	0.463	0.516	0.586	0.650	0.725
Min insulation resistance @ 20°C MOhm.km	12,000	11,000	10,000	8,900	7,900	7,200	6,600	6,000	5,400	4,900	4,300	3,900	3,400
Electric stress at conductor screen kV/mm	2.64	2.56	2.49	2.40	2.33	2.29	2.25	2.22	2.18	2.14	2.11	2.08	2.06
Charging current @ rated voltage & 50 Hz A/phase/km	0.420	0.460	0.507	0.576	0.646	0.704	0.762	0.834	0.924	1.03	1.17	1.30	1.45
Short circuit rating	Phase conductor kA, 1 sec	3.6	5.0	7.2	10.0	13.6	17.2	21.5	26.5	34.3	42.9	57.2	90.1
	Metallic screen kA, 1 sec	3.5	5.0	7.1	10	10	10	10	10	10	10	10	10
Continuous current rating	In ground, direct buried A	145	175	205	250	295	335	370	415	475	530	595	735
	In ground, in singleway ducts A	145	170	195	235	270	300	330	365	410	450	495	600
	In free air, unenclosed & spaced from wall A	145	180	215	270	320	370	420	480	560	640	735	950

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.