

## MEDIUM VOLTAGE CABLES

### Physical & electrical characteristics

Copper 3.8/6.6kV – Single core heavy duty screened unarmoured													
Product code: 1CCUX6HD													
Nominal conductor area mm <sup>2</sup>	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	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	3.0	3.2	3.2
Approx cable diameter mm	19.6	21.9	23.0	25.3	27.0	27.7	29.1	31.1	33.7	36.6	40.7	44.4	48.3
Approx mass kg/100m	75	95	120	160	185	210	240	275	335	395	485	595	730
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	1.3	1.7	1.8	2.2	2.6	2.7	3.0	3.4	4.0	4.7	5.8	6.9	8.1
Min bending radius* during installation mm	350	390	410	460	490	500	520	560	610	660	730	800	870
Min bending radius* set in position mm	240	260	280	300	320	330	350	370	400	440	490	530	580
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	0.0981	0.0791	0.0631	0.0508	0.0414
Inductance, trefoil touching mH/km	0.459	0.451	0.431	0.403	0.383	0.362	0.350	0.340	0.330	0.322	0.315	0.307	0.299
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.144	0.142	0.135	0.127	0.120	0.114	0.110	0.107	0.104	0.101	0.0990	0.0965	0.0940
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	1.51+ j0.0761	1.09+ j0.0736	0.783+ j0.0684	0.560+ j0.0608	0.485+ j0.0560	0.435+ j0.0510	0.406+ j0.0483	0.381+ j0.0456	0.358+ j0.0432	0.343+ j0.0415	0.330+ j0.0403	0.320+ j0.0385	0.312+ j0.0366
Capacitance, phase to earth µF/km	0.266	0.292	0.324	0.371	0.418	0.458	0.497	0.546	0.586	0.607	0.651	0.682	0.762
Min insulation resistance @ 20°C MOhm.km	9,700	8,800	8,000	6,900	6,100	5,500	5,100	4,600	4,300	4,100	3,800	3,700	3,300
Electric stress at conductor screen kV/mm	2.00	1.95	1.90	1.84	1.80	1.78	1.75	1.73	1.65	1.52	1.41	1.32	1.30
Charging current @ rated voltage & 50 Hz A/phase/km	0.317	0.349	0.387	0.443	0.499	0.546	0.593	0.651	0.699	0.725	0.777	0.814	0.910
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	360	405	445	495	600
	In free air, unenclosed & spaced from wall A	145	180	210	265	320	365	415	475	555	635	730	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.