Physical & electrical characteristics

Copper 1.9/3.3kV – Three core heavy duty screened unarmoured										
Product code: 3CCUX3HD										
Nominal conductor area mm²		25	35	50	70	95	120	150	185	240	300
Nominal conductor diameter mm		6.1	7.0	8.2	9.8	11.5	12.9	14.3	16.1	18.2	20.6
Nominal insulation thickness mm		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Approx cable diameter mm		36.0	38.2	40.8	44.8	48.6	51.9	55.1	59.1	64.2	69.5
Approx mass kg/100m		165	210	260	350	435	515	600	715	890	1080
Max pulling tension on conductors kN		5.3	7.4	11	15	20	25	25	25	25	25
Max pulling tension on stocking grip kN		4.5	5.1	5.8	7.0	8.3	9.4	11	12	14	17
Min bending radius* during installation mm		650	690	730	810	880	930	990	1060	1160	1250
Min bending radius* set in position mm		430	460	490	540	580	620	660	710	770	830
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
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km		0.927	0.668	0.494	0.342	0.247	0.196	0.160	0.128	0.0987	0.0800
Inductance mH/km		0.380	0.364	0.348	0.321	0.307	0.295	0.287	0.278	0.270	0.262
Inductive Reactance, @ 50Hz Ohm/km		0.119	0.114	0.109	0.101	0.0964	0.0926	0.0900	0.0874	0.0847	0.0824
Zero seq. impedance @ 20°C & 50 Hz Ohm/km		3.07+ j0.0720	2.16+ j0.0671	1.56+ j0.0624	1.11+ j0.0542	1.03+ j0.0499	0.995+ j0.0463	0.966+ j0.0440	0.941+ j0.0415	0.917+ j0.0390	0.902+ j0.0368
Capacitance, phase to earth µF/km		0.319	0.352	0.391	0.449	0.509	0.558	0.607	0.668	0.745	0.827
Min insulation resistance @ 20°C MOhm.km		8,200	7,300	6,600	5,700	5,000	4,600	4,200	3,800	3,400	3,000
Electric stress at conductor screen kV/mm		1.19	1.17	1.14	1.11	1.09	1.08	1.07	1.06	1.04	1.03
Charging current @ rated voltage & 50 Hz A/phase/km		0.190	0.210	0.234	0.268	0.304	0.333	0.362	0.399	0.445	0.494
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
	Metallic screen kA, 1 sec	3.5	5.1	7.1	10	10	10	10	10	10	10
Continuous current rating	In ground, direct buried A	140	165	195	240	290	335	365	410	475	520
	In ground, in singleway ducts A	120	140	165	205	240	275	310	350	400	450
	In free air, unenclosed & spaced from wall A	135	160	190	240	290	340	380	435	510	590

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.