

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Copper 19/33kV – Three core heavy duty screened unarmoured									
Product code: 3CCUX33HD									
Nominal conductor area mm ²	50	70	95	120	150	185	240	300	
Nominal conductor diameter mm	8.2	9.8	11.5	12.9	14.3	16.1	18.2	20.6	
Nominal insulation thickness mm	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	
Approx cable diameter mm	68.7	72.4	76.3	79.5	82.7	86.7	91.8	97.6	
Approx mass kg/100m	455	560	655	745	840	970	1160	1380	
Max pulling tension on conductors kN	11	15	20	25	25	25	25	25	
Max pulling tension on stocking grip kN	11	15	20	22	24	25	25	25	
Min bending radius* during installation mm	1240	1300	1370	1430	1490	1560	1650	1760	
Min bending radius* set in position mm	820	870	920	950	990	1040	1100	1170	
Max conductor resistance, dc @ 20°C Ohm/km	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	0.494	0.342	0.247	0.196	0.159	0.128	0.0978	0.0788	
Inductance mH/km	0.457	0.422	0.401	0.384	0.371	0.358	0.344	0.332	
Inductive reactance, @ 50Hz Ohm/km	0.143	0.133	0.126	0.121	0.117	0.112	0.108	0.104	
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	1.56+ j0.0978	1.11+ j0.0871	1.03+ j0.0805	0.995+ j0.0752	0.966+ j0.0714	0.941+ j0.0672	0.917+ j0.0629	0.902+ j0.0593	
Capacitance, phase to earth µF/km	0.140	0.155	0.171	0.184	0.197	0.212	0.232	0.255	
Min insulation resistance @ 20°C MOhm.km	18,000	16,000	15,000	14,000	13,000	12,000	11,000	9,900	
Electric stress at conductor screen kV/mm	4.07	3.85	3.67	3.55	3.46	3.36	3.26	3.16	
Charging current @ rated voltage & 50 Hz A/phase/km	0.834	0.927	1.02	1.10	1.17	1.27	1.39	1.52	
Short circuit rating	Phase conductor kA, 1 sec	7.2	10.0	13.6	17.2	21.5	26.5	34.3	42.9
	Metallic screen kA, 1 sec	7.1	10	10	10	10	10	10	
Continuous current rating	In ground, direct buried A	195	240	285	330	370	410	486	547
	In ground, in singleway ducts A	170	210	250	280	320	360	402	452
	In free air, unenclosed & spaced from wall A	195	250	305	350	395	450	550	627

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.