

MEDIUM VOLTAGE CABLES

Physical & electrical characteristics

Copper 19/33kV – Single core heavy duty screened unarmoured												
Product code: 1CCUX33HD												
Nominal conductor area mm ²	50	70	95	120	150	185	240	300	400	500	630	
Nominal conductor diameter mm	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	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	34.4	36.2	37.9	39.5	40.9	42.9	45.1	47.8	51.5	54.8	58.7	
Approx mass kg/100m	165	210	240	270	300	340	400	465	560	675	815	
Max pulling tension on conductor kN	3.5	4.9	6.7	8.4	11	13	17	21	25	25	25	
Max pulling tension on stocking grip kN	3.5	4.6	5.0	5.5	5.9	6.4	7.1	8.0	9.3	10	12	
Min bending radius* during installation mm	620	650	680	710	740	770	810	860	930	990	1060	
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	0.387	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	0.494	0.342	0.247	0.196	0.159	0.127	0.0976	0.0785	0.0624	0.0500	0.0404	
Inductance, trefoil touching mH/km	0.515	0.478	0.454	0.436	0.422	0.407	0.391	0.378	0.365	0.352	0.340	
Inductive reactance, trefoil touching @ 50Hz Ohm/km	0.162	0.150	0.143	0.137	0.133	0.128	0.123	0.119	0.115	0.110	0.107	
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	0.783+ j0.0989	0.550+ j0.0881	0.475+ j0.0815	0.435+ j0.0762	0.406+ j0.0723	0.381+ j0.0681	0.358+ j0.0638	0.343+ j0.0601	0.330+ j0.0566	0.320+ j0.0530	0.312+ j0.0499	
Capacitance, phase to earth µF/km	0.139	0.155	0.170	0.183	0.196	0.212	0.231	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	4.07	3.85	3.67	3.55	3.46	3.36	3.26	3.16	3.06	2.99	2.93	
Charging current @ rated voltage & 50 Hz A/phase/km	0.831	0.923	1.02	1.09	1.17	1.26	1.38	1.52	1.70	1.86	2.06	
Short circuit rating	Phase conductor kA, 1 sec	7.2	10.0	13.6	17.2	21.5	26.5	34.3	42.9	57.2	71.5	90.1
	Metallic screen kA, 1 sec	7.1	10	10	10	10	10	10	10	10	10	
Continuous current rating	In ground, direct buried A	205	250	295	335	370	420	480	535	605	675	750
	In ground, in singleway ducts A	200	235	275	310	340	375	425	470	520	575	630
	In free air, unenclosed & spaced from wall A	220	275	335	380	430	490	575	655	750	855	970

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.