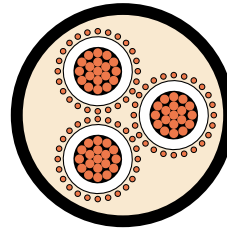


**MEDIUM VOLTAGE CABLES**
**Copper 1.9/3.3 kV – Three core heavy duty screened unarmoured**

**Application**

Electricity distribution network cable typically used as primary supply to Commercial, Industrial and urban residential networks. Suitable for high fault level systems rated up to 10kA/1sec. Higher fault current rated constructions are available on request.

**Approvals**

Approved by all major power Utilities and industrial customers in Australia.

**Behaviour in flame and fire:**

PVC or LSOH outer sheath exceeds the requirements of IEC 60332-1.

**Temperature range**

Minimum installation temperature: 0 °C  
 Maximum operating temperature: +90 °C  
 Minimum operating temperature: -25 °C

**Minimum bending radius**

Installed cables: 12D (PVC only)  
 15D (HDPE)  
 During installation: 18D (PVC only)  
 25D (HDPE)

**Resistance to**

Chemical exposure: Accidental  
 Mechanical impact: Light (PVC only)  
 Heavy (HDPE)  
 Water exposure: XLPE – Spray  
 EPR – Immersion/Temporary coverage  
 Solar radiation and weather exposure: Suitable for direct exposure.

**Cable design**
**Conductor:**

Plain circular compacted copper

**Conductor screen:**

Extruded semi-conductive compound, bonded to the insulation and applied in the same operations as the insulation.

**Insulation:**

Cross Linked Polyethylene (XLPE) – standard  
 Ethylene Propylene Rubber (EPR) – alternative

**Insulation screen:**

Extruded, semi-conductive compound

**Metallic screen:**

Plain annealed copper wire: nominal 10kA for 1 second.  
 See table next page.

**Sheath:**

Black 5V-90 polyvinyl chloride (PVC) – standard  
 Orange 5V-90 PVC inner plus black high density polyethylene (HDPE) outer – alternative  
 Low smoke zero halogen (LSOH) – alternative

**Installation conditions**

In free air  
 In duct  
 In trench  
 In ground with protection

All sizes and values without tolerances are reference values. Specifications are for product as supplied by Prysmian Group; any modification or alteration afterwards of product may give different result. The information contained within this document must not be copied, reprinted or reproduced in any form, either wholly or in part, without the written consent of Prysmian Group. The information is believed to be correct at the time of issue. Prysmian Group reserves the right to amend this specification without prior notice. This specification is not contractually valid unless specifically authorised by Prysmian Group.



## MEDIUM VOLTAGE CABLES

### Physical & Electrical Characteristics

Copper 1.9/3.3 kV – Three core heavy duty screened unarmoured											
Product code: 3CCUX3HD											
Nominal conductor area mm <sup>2</sup>	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 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 are for XLPE cables only. \*Increased radius required for HDPE and nylon incorporating designs.