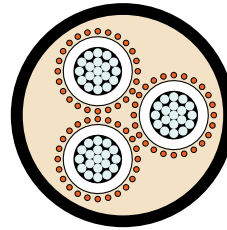


**MEDIUM VOLTAGE CABLES**
**Aluminium 3.8/6.6 kV – Three core heavy duty screened unarmoured**

**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:**

Circular compacted aluminium

**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

Aluminium 3.8/6.6 kV – Three core heavy duty screened unarmoured											
Product code: 3CALX6HD											
Nominal conductor area mm <sup>2</sup>	25	35	50	70	95	120	150	185	240	300	
Nominal conductor diameter mm	6.1	7.1	8.1	9.8	11.5	12.9	14.2	16.0	18.1	20.6	
Nominal insulation thickness mm	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.6	2.8	
Approx cable diameter mm	38.3	40.7	43.1	46.9	51.0	54.1	57.2	61.2	66.7	73.3	
Approx mass kg/100m	120	145	170	215	270	305	345	395	470	560	
Max pulling tension on conductors kN	3.8	5.3	7.5	11	14	18	23	25	25	25	
Max pulling tension on stocking grip kN	3.8	5.3	6.5	7.7	9.1	10	11	13	16	19	
Min bending radius* during installation mm	690	730	780	840	920	970	1030	1100	1200	1320	
Min bending radius* set in position mm	460	490	520	560	610	650	690	730	800	880	
Max conductor resistance, dc @ 20°C Ohm/km	1.20	0.868	0.641	0.443	0.320	0.253	0.206	0.164	0.125	0.100	
Conductor resistance, ac @ 90°C & 50 Hz Ohm/km	1.54	1.11	0.822	0.568	0.411	0.325	0.265	0.211	0.162	0.130	
Inductance mH/km	0.394	0.375	0.360	0.332	0.317	0.307	0.298	0.287	0.279	0.273	
Inductive Reactance, @ 50Hz Ohm/km	0.124	0.118	0.113	0.104	0.0994	0.0964	0.0937	0.0901	0.0876	0.0857	
Zero seq. impedance @ 20°C & 50 Hz Ohm/km	4.48+ j0.0766	3.39+ j0.0709	2.46+ j0.0664	1.70+ j0.0577	1.26+ j0.0531	1.09+ j0.0502	1.05+ j0.0477	1.01+ j0.0442	0.967+ j0.0420	0.942+ j0.0402	
Capacitance, phase to earth µF/km	0.266	0.296	0.324	0.372	0.420	0.458	0.496	0.545	0.584	0.610	
Min insulation resistance @ 20°C MOhm.km	9,900	8,800	8,000	6,900	6,100	5,600	5,100	4,600	4,300	4,100	
Electric stress at conductor screen kV/mm	2.00	1.94	1.90	1.84	1.80	1.78	1.76	1.73	1.65	1.52	
Charging current @ rated voltage & 50 Hz A/phase/km	0.317	0.353	0.387	0.444	0.501	0.547	0.592	0.650	0.697	0.728	
Short circuit rating	Phase conductor kA, 1 sec	2.4	3.3	4.7	6.6	9.0	11.3	14.2	17.5	22.7	28.3
	Metallic screen kA, 1 sec	2.5	3.3	4.6	6.6	8.9	10	10	10	10	10
Continuous current rating	In ground, direct buried A	110	130	155	190	225	255	285	325	375	420
	In ground, in singleway ducts A	95	110	130	160	190	215	240	275	320	365
	In free air, unenclosed & spaced from wall A	105	125	145	180	225	260	300	340	405	460

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.