## HIGH VOLTAGE SINGLE CONDUCTOR CABLE 150 kV XLP 2000 kcmil Cu HDPE SC IEC 60840

# **General Cable**

A Brand of Prysmian Group

#### Cable description

The high voltage single conductor cables are made up of blocked compact soft copper conductor, with semiconductive shield over conductor, cross-linked polyethylene (XLP) insulation, extruded shield over insulation, semiconducting water-blocking tape, wire-based metal shield copper with copper tape applied in an open helix, semiconducting water-blocking tape, overlapped and sealed aluminum tape, and black high-density polyethylene (HDPE) jacket with a semiconductive layer.

Code: E223FK592.0KFBNE Cable design

1. CONDUCTOR: Class B soft copper compact round conductor, blocked from the longitudinal pass of water by blocking wires. Nominal cross section: 1010 mm².  2. EXTRUDED THERMOSET SEMI-CONDUCTING STRESS CONTROL LAYER OVER CONDUCTOR: 1.60 43.10  Thermoset extruded semiconductor compound. 3. INSULATION: Cross-linked polyethylene (XLP), extruded in a true triple extrusion process. 4. SEMICONDUCTOR SCREEN OVER INSULATION: Thermostable extruded semiconductor compound, with adequate adhesion to insulation.  5. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN: 1.83 81.41  Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1.829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE: 0.20 83.22  9. JACKET: 5.00 93.72	CONSTRUCTION	Nominal thickness	Nominal diameter	
Class B soft copper compact round conductor, blocked from the longitudinal pass of water by blocking wires. Nominal cross section: 1010 mm².  2. EXTRUDED THERMOSET SEMI-CONDUCTING STRESS CONTROL LAYER OVER CONDUCTOR: 1.60 43.10  Thermoset extruded semiconductor compound.  3. INSULATION: 15.00 73.10  Cross-linked polyethylene (XLP), extruded in a true triple extrusion process.  4. SEMICONDUCTOR SCREEN OVER INSULATION: 1.60 76.30  5. SEMICONDUCTIVE WATER-BLOCKING TAPE: 1.83 81.41  Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN: 1.83 81.41  Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1.829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: 0.3 82.60  Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE: 0.20 83.22  9. JACKET: 5.00 93.72		mm	mm	
Nominal cross section: 1010 mm².  2. EXTRUDED THERMOSET SEMI-CONDUCTING STRESS CONTROL LAYER OVER CONDUCTOR: 1.60 43.10  Thermoset extruded semiconductor compound.  3. INSULATION: 15.00 73.10  Cross-linked polyethylene (XLP), extruded in a true triple extrusion process.  4. SEMICONDUCTOR SCREEN OVER INSULATION: 1.60 76.30  Thermostable extruded semiconductor compound, with adequate adhesion to insulation.  5. SEMICONDUCTIVE WATER-BLOCKING TAPE: 0.3 76.90  Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN: 1.83 81.41  Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1.829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: 0.3 82.60  8. ALUMINUM TAPE: 0.20 83.22  9. JACKET: 5.00 93.72	1. CONDUCTOR:	-	39.00	
Thermoset extruded semiconductor compound.  3. INSULATION: 15.00 73.10  Cross-linked polyethylene (XLP), extruded in a true triple extrusion process.  4. SEMICONDUCTOR SCREEN OVER INSULATION: 1.60 76.30  Thermostable extruded semiconductor compound, with adequate adhesion to insulation.  5. SEMICONDUCTIVE WATER-BLOCKING TAPE: 0.3 76.90  Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN: 1.83 81.41  Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1.829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: 0.3 82.60  Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE: 0.20 83.22  9. JACKET: 5.00 93.72				1
3. INSULATION:  Cross-linked polyethylene (XLP), extruded in a true triple extrusion process.  4. SEMICONDUCTOR SCREEN OVER INSULATION: Thermostable extruded semiconductor compound, with adequate adhesion to insulation.  5. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN: Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1,829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE:  Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET: 5.00 93.72	2. EXTRUDED THERMOSET SEMI-CONDUCTING STRESS CONTROL LAYER OVER CONDUCTOR:	1.60	43.10	2
3. INSULATION: 15.00 73.10 Cross-linked polyethylene (XLP), extruded in a true triple extrusion process.  4. SEMICONDUCTOR SCREEN OVER INSULATION: 1.60 76.30 Thermostable extruded semiconductor compound, with adequate adhesion to insulation.  5. SEMICONDUCTIVE WATER-BLOCKING TAPE: 0.3 76.90 Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN: 1.83 81.41 Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1,829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: 0.3 82.60 Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE: 0.20 83.22 9 JACKET: 5.00 93.72	Thermoset extruded semiconductor compound.			
4. SEMICONDUCTOR SCREEN OVER INSULATION: Thermostable extruded semiconductor compound, with adequate adhesion to insulation.  5. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN: Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1,829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE: Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET: 5.00 93.72	3. INSULATION:	15.00	73.10	3
Thermostable extruded semiconductor compound, with adequate adhesion to insulation.  5. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN: Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1,829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE:  Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET: 5.00 93.72	Cross-linked polyethylene (XLP), extruded in a true triple extrusion process.			
5. SEMICONDUCTIVE WATER-BLOCKING TAPE:  Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN:  Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1,829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE:  Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE:  Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET:  5.00  93.72	4. SEMICONDUCTOR SCREEN OVER INSULATION:	1.60	76.30	4——
5. SEMICONDUCTIVE WATER-BLOCKING TAPE:  Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.  6. METALLIC SCREEN:  Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1,829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE:  Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE:  Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET:  5.00  93.72	Thermostable extruded semiconductor compound, with adequate adhesion to insulation.			
6. METALLIC SCREEN: Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1,829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE: Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET: 5.00 93.72	5. SEMICONDUCTIVE WATER-BLOCKING TAPE:	0.3	76.90	5
6. METALLIC SCREEN: Helically applied soft bare copper wires with against spiral of copper tape. Formed by 30 copper wires of 1,829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE: Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET: 5.00 93.72	Helically applied under the electrostatic screen, avoiding the longitudinal penetration of moisture.			6
1,829 mm  7. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE: Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET: 5.00 93.72	6. METALLIC SCREEN:	1.83	81.41	
7. SEMICONDUCTIVE WATER-BLOCKING TAPE: Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.  8. ALUMINUM TAPE: Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET: 5.00 93.72				7
8. ALUMINUM TAPE:  Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET:  0.3 62.00  0.20 83.22  9  3.72	1,829 mm			
8. ALUMINUM TAPE: 0.20 83.22 9  Longitudinal aluminum tape overlapped and adhered to the jacket. 5.00 93.72		0.3	82.60	8
Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET: 5.00 93.72	Helically applied on the electrostatic screen, avoiding the longitudinal penetration of moisture.			
Longitudinal aluminum tape overlapped and adhered to the jacket.  9. JACKET: 5.00 93.72	8. ALUMINUM TAPE:	0.20	83.22	9
***************************************	Longitudinal aluminum tape overlapped and adhered to the jacket.			3
Extruded black high density polyethylene (HDPE) jacket.	9. JACKET:	5.00	93.72	_
	Extruded black high density polyethylene (HDPE) jacket.			_

#### Specifications and special features:

IEC-60840 Power cables with extruded insulation and their accessories for rated voltages above 30 kV (Um = 36 kV) Up to 150 kV (Um = 170 kV) - Test methods and requirements

CFE E0000-17 CABLES DE POTENCIA PARA 69 kV A 138 kV CON AISLAMIENTO DE XLP.

NMX-J-142/2-ANCE-2011 CONDUCTORES - CABLES DE ENERGÍA CON PANTALLA METÁLICA, AISLADOS CON POLIETILENO DE CADENA CRUZADA O A BASE DE ETILENO - PROPILENO PARA TENSIONES DE 69 kV HASTA 115 kV - ESPECIFICACIONES Y MÉTODOS DE PRUEBA

Maximum admissible temperature in the conductor in permanent service: 90°C Maximum admissible temperature in the conductor in the short-circuit regimen 250°C

In non-returnable wooden or metallic reels according to the length of the sections. Tolerance on the length of ± 5%.

### **Applications**

- •Used in energy sub-transmission networks.
- Trenches.
- •Underground ducts.
  •Directly buried.
- Galleries

#### **Technical information**

		units
Electrical resistance of the conductor at 20°C d.c.:	0.0174	Ω/km
Nominal capacity:	0.2416	μF/km
Maximum voltage between phases, Um:	170	kV
Impulse voltage, Up:	750	kV
Maximum short-circuit current in the conductor during 0.25 s:	289	kA
Maximum short-circuit current in the metallic screen (Cu wires + Al tape) during 0.25 s:	33.0	kA
Maximum pulling effort:	6000	kg
Approximate weight:	15 204	kg/km
Bending radius:		
During the installation:	2.82	m
• Permanent:	1.88	m

Values indicated here are approximate and according to tolerances of manufacturing standards, for which they may vary.

©PRYSMIAN, All rights reserved. The information contained in this document may not be copied, reprinted or reproduced in any form, in whole or in part, without the written consent of Prysmian. The information is believed to be correct at the time of publication. Prysmian reserves the right to amend this selection without notice. This choice is not contractually valid unless specifically authorized by Prysmian.

