Polyethylene

Borlink™ LE0500

Crosslinkable Semiconductive Compound

Description

Borlink LE0500 is a supersmooth crosslinkable black polyethylene compound, specially designed for semiconductive conductor screen and bonded insulation screen of power cables.

Applications

Borlink LE0500 is intended for semiconductive screen in XLPE extra high voltage (EHV) AC cables with rated voltages above 230 kV (Um = 245 kV).

The values are voltages between phases as defined in IEC 60183.

Specifications

Borlink LE0500 is expected to meet the applicable requirements included in the below mentioned standards provided it is processed using sound material handling, extrusion and crosslinking practices as well as appropriate testing procedures. This applies up to the recommended voltage level indicated in "Applications" section above since some standards cover wider voltage ranges.

IEC 62067
IEC 60840
AEIC CS9
AEIC CS8
ANSI/ICEA S-108-720
ANSI/ICEA S-93-639
ANSI/ICEA S-94-649
ANSI/ICEA S-97-682
UL 1072

Special Features

Borlink LE0500 is a ready-to-use supersmooth semiconductive compound. It offers excellent thermal stability which provides robust cable extrusion and crosslinking at high surface temperature.

The excellent distribution of carbon black and additives in Borlink LE0500 results in a superior smoothness of the semiconductive screen.

Physical Properties

Property		Typical Value Data should not be used for specification work	Test Method
Density		1120 kg/m³	ISO 1183
Tensile Strain at Break (25 mm/min) [1]		> 150 %	ISO 527
Tensile Strength (25 mm/min) [1]		> 15 MPa	ISO 527
Change of Tensile Properties After Ageing (168 h, 135 °C) [1]		< 20 %	IEC 60811-401
Hot Set Test (200 °C, 0,20 MPa) [1]	Elongation under load	< 100 %	IEC 60811-507
	Permanent deformation	< 10 %	
MDR, max torque		13,8 dNm	ISO 6502
Moisture		100 ppm	ISO 15512

[1] Measured on crosslinked specimens

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Electrical Properties

Property	Typical Value Data should not be used for specification work	Test Method
DC Volume Resistivity (23 °C)	< 100 Ωcm	ISO 3915
DC Volume Resistivity (90 °C)	< 1000 Ωcm	ISO 3915
DC Volume Resistivity (23 °C)	< 100 Ωcm	ASTM D 991

Processing Techniques

Borlink LE0500 provides excellent surface finish and outstanding output rates, when processing conditions are optimized for the actual processing equipment and cable dimensions. Optimal conditions may vary according to the equipment used. Hence all material handling should preferably be conducted in closed systems and in clean room conditions. Please contact your Borealis representative for more details.

Pre-drying

It is recommended that **Borlink LE0500** is dried prior to extrusion. Typical drying conditions are shown below:

Predrying (4 h)	60 °C	With dehumidified air

Extrusion

A screen-pack on the extruder is recommended for improved melt homogenisation. Typical processing temperature ranges for **Borlink LE0500** are shown below:

Melt temperature	120 - 135 °C

Packaging

Package:	Smallbins

Storage

Borlink LE0500 has a shelf life of 18 months from production date if stored in unopened original packages, under dry and clean conditions at temperatures between 10 - 30 °C (50 - 85 °F).
Material shelf life is affected by the storage conditions and extreme conditions influence the general material quality and performance.

It is also recommended to ensure proper stock rotation by First In – First Out principle.

More information on storage is found in the Safety data sheet (SDS) / Product safety information sheet (PSIS) for this product.

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Safety

Please see the Safety data sheet (SDS) / Product safety information sheet (PSIS) for details on various aspects of safety, recovery and disposal of the products. For more information, contact your Borealis representative.

Disclaimer

The product(s) mentioned herein are not intended to be used for medical, pharmaceutical or healthcare applications and we do not support their use for such applications.

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however we do not assume any liability whatsoever for the accuracy and completeness of such information.

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It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.

No liability can be accepted in respect of the use of any Borealis product in conjunction with any other products and/or materials. The information contained herein relates exclusively to our products when not used in conjunction with any other material unless as specifically provided for in the test methods stated above.

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