

Polyethylene Borstar® HE6063

Natural Bimodal High Density Polyethylene Jacketing Compound for Energy and Communication Cables

Description

Borstar HE6063 is a natural, UV-stabilised, colourable, bimodal high density (HD) jacketing compound, which is produced with the Borealis proprietary Borstar bimodal process technology.

Borstar technology allows the manufacturing of polymers outside the traditional MFR and density range making it possible to optimize processability, reduce shrinkage and yet provide excellent physical toughness and environmental stress crack resistance (ESCR).

Borstar HE6063 contains a well dispersed UV-stabiliser in sufficient amount providing a measure of weathering resistance. In order to fully utilise the unique low shrink properties of Borstar HE6063 we recommend the use of non-warping colour masterbatches.

Applications

Borstar HE6063 is designed for jacketing of energy and communication cables.

The physical toughness and very low water permeability of the compound make it an ideal solution especially for buried power cables. Borstar HE6063 offers a balance of properties giving advantages in manufacturing, installation and lifetime performance of communication and energy cables.

Specifications

Borstar HE6063 meets the applicable requirements as below when processed using sound extrusion practice and testing procedure:

ISO 1872-PE, KHLN, 45 D-006

ASTM D 1248 Type III, Class A, Category 4, Grade E9, J5

The following cable material standards are met by Borstar HE6063:

EN 50290-2-24

DMP 5, 6, 13, 16

Cables manufactured with Borstar HE6063 using sound extrusion practice normally comply with the following cable product standards:

IEC 60502, Part 2, Type ST7

HD 603 S1, DMP 6

IEC 60840, Type ST7

DIN VDE 0818

IEC 60794

HD 620 S2, Part 1, table 4B, DMP 5, 13, 16, 18

EN 187105

Special Features

Borstar HE6063 consists of specially selected components to offer:

Superior processability
Excellent environmental stress cracking resistance (ESCR)
Excellent abrasion & scratch resistance
Low water permeability
Low heat deformation

Good petroleum-jelly resistance
Termite resistance
Very good UV resistance
Low shrinkage
Excellent surface hardness

Borstar is a registered trademark of the Borealis group.

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Physical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Density	946 kg/m ³	ISO 1183-1, Method A
Melt Flow Rate (190 °C/2,16 kg)	0,5 g/10min	ISO 1133-1, Method A
Melt Flow Rate (190 °C/5,0 kg)	2,0 g/10min	ISO 1133-1, Method A
Flexural Modulus	850 MPa	ISO 178
Tensile Strain at Break (50 mm/min)	900 %	ISO 527-2
Tensile Strength (50 mm/min)	35 MPa	ISO 527-2
Brittleness temperature	< -76 °C	ASTM D 746
Environmental Stress Crack Resistance (50 °C, Igepal 10 %, F0)	> 5.000 h	IEC 60811-406
Hardness, Shore D (1 s)	60	ISO 868
Pressure Test at High Temperature (115 °C, 6 h)	< 10 %	IEC 60811-508

Electrical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
DC Volume Resistivity	10 PΩcm	IEC 60093
Dielectric Strength	20 kV/mm	IEC 60243

Processing Techniques

Borstar HE6063 provides excellent surface finish and allows a broad processing window. For extrusion standard PE-screws are recommended, but also screws designed for PVC can be used with good result. To minimise shrink back gradient cooling with hot water, minimum 60°C in the first part of the cooling trough, is strongly recommended.

If preheating and/or drying is used, the maximum temperature should be 90°C.

Preheating	90 °C	Maximum recommended temperature
Melt temperature	180 - 190 °C	
Cooling water	60 °C	First part of cooling trough Minimum Temperature

Packaging

Package:	Bulk
	Octabins
	Bags

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Safety

The product is not classified as dangerous and is intended for industrial use only. Check and follow local codes and regulations!

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety of the product. 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.

Borealis makes no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.

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.