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# Polyethylene HE1345

## Description

### HE1345

It is a fully formulated compound for chemical foamed telesingles which passes the Telcordia Pedestal test. HE1345 is a high-density polyethylene compound containing chemical blowing agent.

## Applications

HE1345 is intended for:

Foam or foam-skin insulation for telephone singles with typical expansion of 35-40%.

## Specifications

HE1345 meets the following material classification:

ISO 1872-PE, KEGHN, 45-D006 <sup>1</sup>

ASTM D1248 Type III, Class A, Category 4 <sup>1</sup>

<sup>1</sup> Refers to Base Resin

The following cable material standards are met by HE1345:

EN 50290-2-23

Cables manufactured with HE1345 using sound extrusion practice normally comply with the following cable product standards:

IEC 60708

EN 50407

## Special features

HE1345 consists of specially selected components to offer:

Consistent cell structure  
Excellent extrusion stability  
Good surface finish

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## Physical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Density (Base Resin)	942 kg/m <sup>3</sup>	ISO 1183
Density (Compound)	945 kg/m <sup>3</sup>	ISO 1183
Bulk density	500 - 600 kg/m <sup>3</sup>	
Tensile Strain at Break (50 mm/min)	600 %	ISO 527
Tensile Strength (50 mm/min)	23 MPa	ISO 527

For information on the influence of petroleum jelly please refer to the article published on borealisgroup.com : "Impact of Petroleum Jelly on the Ageing of Telephone Wire", by going to the following link  
[http://www.borealisgroup.com/pdf/literature/borealis/technical-article/1112Impact\\_of\\_Petroleum\\_Jelly\\_on\\_the\\_Ageing\\_of\\_Telephone\\_Wire\\_Final.pdf](http://www.borealisgroup.com/pdf/literature/borealis/technical-article/1112Impact_of_Petroleum_Jelly_on_the_Ageing_of_Telephone_Wire_Final.pdf)

## Physical Properties of expanded ( 40 %) insulation

Property	Typical Value	Test Method
Data should not be used for specification work		
Tensile Strength (50 mm/min),	13 MPa	IEC 60811-501
Tensile Strain (50 mm/min),	500 %	IEC 60811-501
Oxidation Induction Time (200 °C),	> 200 min	IEC 60811-410

## Electrical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Dielectric constant (1 MHz) <sup>1</sup>	2,33	IEC 60250
Dissipation Factor (1 MHz) <sup>1</sup>	0,0004	IEC 60250

<sup>1</sup> Measured on moulded plaques containing blowing agent but not expanded

## Processing Techniques

HE1345 can be processed over a wide range of conditions.

The adoption of correct processing conditions is important to obtain the optimum physical and electrical properties of the insulated wire. The melt temperature depends on the desired capacitance. The melt temperature should be kept within a close tolerance within +/- 1°C.

Conductor preheating is important for the insulation mechanical properties and to ensure good adhesion to the conductor. Heated water (up to 50°C) in the first cooling trough has been found beneficial to improve conductor adhesion.

## Tooling

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Pressure tooling is invariably required. The die diameter is a function of the level of expansion with a greater expansion requiring a smaller die. Typically die diameters 3 to 7% below the nominal insulation outer diameter are used.

## Extrusion

Adapter	195 °C
Barrel 1	155 °C
Barrel 2	170 °C
Barrel 3	185 °C
Barrel 4	195 °C
Die	195 °C
Melt temperature	195 - 200 °C
Conductor preheating temperature	100 - 120 °C

Please contact your local Borealis representative for specific assistance.

## Packaging

Package:	Bags
	Octabins
	Bulk

## Storage

**HE1345** should be stored in dry conditions at temperatures below 50°C and protected from UV-light.

## Safety

The product is not classified as dangerous. Check and follow local codes and regulations!

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety, recovery and disposal of the product. For more information, contact your Borealis representative.

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