

## Polyethylene

## HE1355

## Description

HE1355 is a fully formulated, high density polyethylene compound, containing an Azodicarbonamide (ADCA)-free chemical blowing agent, for telesingles.

## Typical characteristics

HE1355 can be described with following typical characteristics:

ADCA-free	Good surface finish
Consistent cell structure	Good extrusion stability

## Applications

HE1355 is intended for following applications:

Dry core and petroleum jelly filled cables	Foam or foam-skin insulation for telephone singles and data cable with typical expansion of 35-40%.
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## Specifications

HE1355 is expected to meet the applicable requirements included in the below mentioned standards provided it is processed using sound material handling and processing practices as well as appropriate testing procedures.

EN 60811-408  
EN 50290 -2-23

## Physical properties

Property	Typical value *	Unit	Test method
Density <sup>1</sup>	950	kg/m <sup>3</sup>	ISO 1183-1
Melt flow rate ( 140 °C/5 kg)	1.35	g/10min	ISO 1133-1
Bulk density	500-600	kg/m <sup>3</sup>	ASTM D1895
Tensile strain at break ( 25 mm/min)	690	%	ISO 527-2
Tensile strength ( 25 mm/min)	19	MPa	ISO 527-2
Oxidation induction time ( 200 °C)	> 200	min	ISO 11357-6
Hardness, Shore D	63	-	ISO 868

\* Data should not be used for specification work

<sup>2</sup> Method A, Compound

## Electrical properties

Property	Typical value *	Unit	Test method
Dissipation factor (1 MHz)	0.0007	-	ASTM D150
Dielectric constant (1 MHz)	2.32	-	ASTM D150

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### Other properties

Property	Typical value *	Unit	Test method
Tensile strength (25 mm/min) <sup>3</sup>	12	MPa	IEC 60811-408
Tensile strain at break (25 mm/min) <sup>3</sup>	570	%	IEC 60811-408

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<sup>4</sup> Physical Properties of expanded ( 38 %) insulation;

### Processing techniques

HE1355 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.

#### Tooling

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 5-10% below the nominal insulation outer diameter are used.

Processing setting	Typical value/range
Barrel temperature 1	130 °C
Barrel temperature 2	170 °C
Barrel temperature 3	185 °C
Barrel temperature 4	210 °C
Barrel temperature 5	215 °C
Conductor preheating temperature	100 °C

Please contact your local Borealis representative for specific extruder assistance.

### Packaging and storage

Package: Bulk, Octabins, Bags

HE1355 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.

### Product compliance documents

Latest versions of product safety information sheets (PSIS), product safety data sheets (SDS) and other product liability documents are available in our website [www.borealisgroup.com](http://www.borealisgroup.com).

### Sustainability aspects

Borealis is ever mindful of the impact of our products on the planet. We promote Design for Circularity (DfC) and Design for Recycling (DfR) to conserve natural resources and to reduce the environmental impact of products over their entire lifetime (including production, use phase and after phase). DfR helps ensure that material can be effectively recycled while maximizing the material performance efficiency. Further information on sustainability and Design for Recycling (DfR) can be found from our websites [www.borealisgroup.com](http://www.borealisgroup.com) and [www.borealiseverminds.com](http://www.borealiseverminds.com).

### Disclaimer

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