



Polyethylene Casico™ FR4803

Low Smoke Zero Halogen Flame Retardant Natural Jacketing Compound for Building and 1 kV Cables

Description

Casico FR4803 is a thermoplastic, low smoke zero halogen (LSZH) flame retardant, UV stabilised, natural jacketing compound combining with excellent extrusion properties.

It is based on the novel technology, Casico, containing inorganic filler and a novel char-forming additive which confer flame retardancy with very limited smoke generation.

Applications

Casico FR4803 is designed for:

Jacket for 90°C rated building wires (installation cables) and 1 kV low voltage cables

It can be used in areas sensitive to smoke or corrosive and toxic combustion products. For most cable constructions, Casico FR4803 has sufficient flame retardancy to satisfy single wire vertical burning tests.

Specifications

Casico FR4803 meets the applicable requirements below using sound commercial extrusion practice and testing procedures:

EN 50173	IEC 60227
EN 50288	VDE 0207 Teil 24 (HM2 & HM5)
EN 50290-2-27	VDE 0250 Teil 215

Special features

Casico FR4803 consists of specially selected components to offer:

Low smoke and reduced toxic or corrosive gas emissions	UV stabilised and suitable for colouring
Excellent processing properties	Possibility for cable downsizing
Superb system ageing compatibility	Processability on most PVC/PE extrusion equipment
Low water permeability	No need for pre-drying normally

Physical Properties

Property	Typical Value	Test Method
<small>Data should not be used for specification work</small>		
Density (Compound) ¹	1150 kg/m ³	ISO 1872-2/ISO 1183
Melt Flow Rate (190 °C/2,16 kg) ¹	0,4 g/10min	ISO 1133
Flexural Modulus ¹	205 MPa	ISO 178
Tensile Strain at Break ²	400 %	IEC 60811-1-1
Tensile Strength (50 mm/min) ²	11 MPa	IEC 60811-1-1
Retention of Tensile Properties After Ageing (240 h, 100 °C)	< 20 %	IEC 60811-1-2

Casico is a trademark of Borealis A/S, Denmark.

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°C) ²		
Retention of Tensile Properties After UV Ageing ²	< 20 %	
Hardness, Shore D (15 s) ¹	39	ISO 868
Pressure Test at High Temperature (90 °C, 4 h) ²	9 %	IEC 60811-3-1
Cold Bend (-40 °C) ²	Pass	IEC 60811-1-4
Cold Impact (-40 °C) ²	Pass	IEC 60811-1-4
Water absorption (70 °C,4 Days) ²	0,11 mg/cm ²	IEC 60811-1-3

¹ Compound² Cable (0.7 mm insulation over 1.5 mm² solid Cu)

Electrical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Volume Resistivity ¹	45 POhm.cm	IEC 60093
Dielectric Strength ¹	> 20 kV/mm	IEC 60243
Breakdown Voltage ²	40 kV	ISO 6722
Breakdown Duration ²	Pass	IEC 60227-2/2.3

¹ Compound² Cable (0.7 mm insulation over 1.5 mm² solid Cu)

Combustion Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Limited Oxygen Index ¹	31 %	ISO 4589A
Cone Calorimeter (heat flux 35 kW/m ² , 3 mm plaque)	Ignition time	157 s
	Average Heat Release	175 kW/m ²
	Max Heat Release	282 kW/m ²
	Heat Combustion	29 MJ/dm ³
	Smoke Obscuration	506 m ² /dm ³
	CO	0,014 kg/dm ³
	CO ₂	1,85 kg/dm ³
Corrosivity of Combustion Fumes ¹	1,5 µS/cm	IEC 60754-2
	5,3	

¹ Compound

Processing Techniques

are suitable for most equipment designed for PVC/PE extrusion.

Using the above set temperatures a stable extrusion process and a cable having a smooth glossy appearance can be achieved. On-size pressure or low draw down tube-on tolling is preferred. Whichever type of tooling is used, the



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die should preferably have a parallel land of length approximately twice the final cable diameter. Homo or Copolymer based masterbatches are suitable for colouring Casico FR4803.

Barrel 1	130 °C
Barrel 2	150 °C
Barrel 3	170 °C
Barrel 4	180 °C
Die	180 °C

Packaging

Package: Bulk
 Octabins
 Bags

Storage

Casico FR4803 normally does not need pre-drying unless the material has been stored in a moist environment over a long period. In such cases drying in dehumidified air for 4 hours at 70°C will normally reduce the moisture content to an acceptable value.

Safety

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

Please see our Safety Data Sheet for details on various aspects of safety of the product, for more information contact your Borealis representative.



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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.

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