



Polyethylene Casico™ FR4802

Reduced Fire Hazard Jacketing Compound for Energy Cables

Description

Casico FR4802 is a thermoplastic, low smoke zero halogen (LSZH) flame retardant, natural jacketing insulation compound combining with excellent extrusion properties. The composition is based on the elements Carbon, Hydrogen, Oxygen, Silicon and Calcium. Compounds based on these elements will therefore be the only significant constituents of the combustion fumes. Other elements may be present in concentrations less than 0.1%.

Specifications

Casico FR4802 meets the applicable requirements below using sound commercial extrusion practice and testing procedures:

ASTM D 1248 Type I, Class A, Category 4

ISO 1872-PE KGHN-23D006

The following cable material standards are met by Casico FR4802:

EN 50290-2-27
EN 50290-2-26
EN 50363-8 TM7
BS 7655 LTS2

EN 50363-7 TI6 & TI7
VDE 0207 Teil 23 (HI2) and Teil (HM2, HM4 & HM5)

Cables manufactured with Casico FR4802 using sound extrusion practice normally comply with the following cable product standards:

BS 7211

IEC 60502 Part 1 ST3

Physical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Density 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	220 MPa	ISO 178
Tensile Strain at Break ²	550 %	IEC 60811-1-1
Tensile Strength (50 mm/min) ²	13 MPa	IEC 60811-1-1
Change of Tensile Properties After Ageing (10 h, 100 °C) ²	< 20 %	IEC 60811-1-2
Brittleness temperature ¹	< -60 °C	ISO 974
Hardness, Shore D (15 s) ¹	40	ISO 868
Pressure Test at High Temperature (90 °C, 4 h) ²	< 50 %	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,14 Days) ²	0,1 mg/cm ²	IEC 60811-1-3

¹ Compound

² Cable (0.7 mm insulation over 1.5 mm² solid Cu)

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Electrical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Volume Resistivity ¹	10 POhm.cm	IEC 60093
Dielectric Strength ¹	> 20 kV/mm	IEC 60243
Breakdown Voltage ²	36 kV	ISO 6722
Breakdown Duration ²	Pass	IEC 60227-2/2.3

¹ Compound

² 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		
Temperature index	200 °C	ISO 4589-3
Limited Oxygen Index ¹	32 %	
NBS Smoke Data (76x76x0.7 mm plaque)	Optical Smoke Density Dmax Time to Dmax	49 6 min
Flaming mode		
NBS Smoke Data (76x76x0.7 mm plaque) Non Flaming mode	Optical Smoke Density Dmax Time to Dmax	104 20 min
Cone Calorimeter (heat flux 35 kW/m ² , 3 mm plaque)	Ignition time Average Heat Release Max Heat Release Heat Combustion Smoke Obscuration	125 s 244 kW/m ² 400 kW/m ² 29 MJ/dm ³ 520 m ² /dm ³
	CO CO ₂	0,023 kg/dm ³ 1,7 kg/dm ³
Corrosivity of Combustion Fumes ¹	1,5 µS/cm 5,6	IEC 60754-2

¹ Compound

Processing Techniques

The actual conditions will depend on the type of equipment used.

Most equipment designed for PVC/ PE extrusion is equally suitable for this product.

Barrel 1	130 °C
Barrel 2	160 °C
Barrel 3	180 °C
Barrel 4	190 °C
Die	190 °C
Screw speed	100 RPM
Line speed	185 m/min

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Packaging

Package: Octabins

Storage

Casico FR4802 normally does not need pre-drying unless the material has been stored in a moist environment for 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 dangerous.

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

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.

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