



Polyethylene

Casico<sup>TM</sup> FR6082

Reduced Fire Hazard Jacketing Compound for Energy Cables

## Description

**Casico FR6082** is a thermoplastic, reduced fire hazard, zero halogen black jacketing compound combined with high mechanical strength, toughness and 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%.

Casico FR6082 contains 2,5% well dispersed furnace black of nominal particle size less than 25 nanometres in order to ensure excellent weathering resistance.

## Applications

**Casico FR6082** is designed for:

Jacket for energy cables

The principle feature of this compound is the high physical strength and toughness. It can be used in areas sensitive to smoke or corrosive and toxic combustion products. For most cable constructions, Casico FR6082 has sufficient flame retardancy to satisfy single wire vertical burning tests.

## Specifications

**Casico FR6082** meets the applicable requirements below using sound commercial extrusion practice and testing procedures:

ISO 1872-PE, KCGH, 33-D003

ASTM D1248 Type II Class C, Cat 4

The following cable material standards are met by Casico FR6082:

EN 50290-2-27  
EN 50363-8 TM7

VDE 0207 Teil 24 (HM2, HM4 & HM5)  
BS 7655 LTS1-4

Cables manufactured with Casico FR6082 using sound extrusion practice normally comply with the following cable product standards:

IEC 60502, Part 1, Type ST3, ST7  
IEC 60502, Part 2, Type ST3, ST7  
HD 620 S1, DMZ2

HD 632 S1, ST3, ST7  
HD 603 S1 DMO 1  
HD 620 S2 DMZ 2-5

## Special features

**Casico FR6082** consists of specially selected components to offer:

High mechanical strength and toughness  
Superb system ageing compatibility  
Low water permeability  
UV resistance

Possibility for cable downsizing  
Processability on most PVC/PE extrusion equipment  
No need for pre-drying normally  
Excellent processing properties

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### Physical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Density <sup>1</sup>	1175 kg/m <sup>3</sup>	ISO 1872-2/ISO 1183
Melt Flow Rate (190 °C/2,16 kg) <sup>1</sup>	0,6 g/10min	ISO 1133
Tensile Strain at Break <sup>2</sup>	> 450 %	IEC 60811-501
Tensile Strength (50 mm/min) <sup>2</sup>	15 MPa	IEC 60811-501
Retention of Tensile Properties After Ageing (7 d, 110 °C) <sup>2</sup>	> 85 %	IEC 60811-401
Hardness, Shore D ( 15 s) <sup>1</sup>	53	ISO 868
Pressure Test at High Temperature (105 °C, 6 h) <sup>2</sup>	6 %	IEC 60811-508
Pressure Test at High Temperature (110 °C, 6 h) <sup>2</sup>	8 %	IEC 60811-508
Cold Bend (-40 °C)	Pass	IEC 60811-504
Cold Impact (-40 °C)	Pass	IEC 60811-506
Water absorption (70 °C, 14 Days)	0,8 mg/cm <sup>2</sup>	IEC 60811-402

<sup>1</sup> Compound

<sup>2</sup> NHxMH; 0,7 mm insulation

### Electrical Properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Volume Resistivity <sup>1</sup>	17 PΩcm	IEC 60093
Dielectric Strength <sup>1</sup>	> 10 kV/mm	IEC 60243

<sup>1</sup> Compound

### Other properties

Property	Typical Value	Test Method
Data should not be used for specification work		
Limited Oxygen Index <sup>1</sup>	28 %	ISO 4589-2
Corrosivity of Combustion Fumes <sup>2</sup>	6,5 μS/cm	IEC 60754-2
	pH 5,6	
Single Vertical Flame Test	Pass	IEC 60332-1
Tear resistance	13 N/mm	HD 605 S2, Method 2

<sup>1</sup> Compound

<sup>2</sup> Acidity (pH)

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## Processing Techniques

Most equipment designed for PVC/PE extrusion is suitable.

Using the below 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 die should preferably have a parallel land of length equal to the final cable diameter.

Barrel 1	160 °C
Barrel 2	170 °C
Barrel 3	180 °C
Barrel 4	190 °C
Die	190 °C

## Packaging

Package: Octabins

## Storage

**Casico FR6082** 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 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 products. For more information, contact your Borealis representative.



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## Disclaimer

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