

Casico™ FR4803

Crosslinked Polyethylene

Borealis AG

Message:

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.

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.

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

BS 7655 LTS1-4

EN 50173

EN 50288

EN 50290-2-27

EN 50363-8 TM7

IEC 60227

VDE 0207 Teil 24 (HM2, HM4 & HM5)

VDE 0250 Teil 215

General Information	
Filler / Reinforcement	Filler
Additive	Flame Retardant
	UV Stabilizer
Features	Flame Retardant
	Good Colorability
	Good Corrosion Resistance
	Good Processability
	Good UV Resistance
	Halogen Free
	Low Smoke Emission
	Low Toxicity
	Moisture Resistant
Uses	Building Wire Insulation
	Building Wire Jacketing
	Cable Jacketing
	Low Voltage Insulation
	Power Cable Jacketing
	Wire & Cable Applications
Agency Ratings	EN 50173
	EN 50288
	IEC 60227

Appearance	Natural Color		
Forms	Granules		
Processing Method	Extrusion		
Physical	Nominal Value	Unit	Test Method
Density ¹	1.15	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) ² (190°C/2.16 kg)	0.40	g/10 min	ISO 1133
Water Absorption (70°C) ³	0.110	mg/cm ²	IEC 60811-1-3
Cold Bend (-40°C) ⁴	Pass		IEC 60811-1-4
Cold Impact (-40°C) ⁵	Pass		IEC 60811-1-4
Breakdown Duration ⁶	Pass		IEC 60227-2/2.3
Breakdown Voltage ⁷	40000	V	ISO 6722
Cone Calorimeter			ISO 5660
Average Heat Release ⁸	175	kW/m ²	
CO ⁹	0.0140	kg/m ³	
CO ₂ ¹⁰	1.85	kg/m ³	
Heat Combustion ¹¹	29.0		
Ignition time ¹²	2.6	min	
Max Heat Release ¹³	282	kW/m ²	
Smoke Obscuration ¹⁴	506		
Corrosion - of Combustion Fumes ¹⁵	1.50	µS/cm	IEC 60754-2
Pressure Test (90°C) ¹⁶	9.0	%	IEC 60811-3-1
Hardness	Nominal Value	Unit	Test Method
Shore Hardness ¹⁷ (Shore D, 15 sec)	39		ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress (Yield)	11.0	MPa	IEC 60811-1-1
Tensile Strain ¹⁸ (Break)	400	%	IEC 60811-1-1
Flexural Modulus ¹⁹	205	MPa	ISO 178
Aging	Nominal Value	Unit	Test Method
Change in Tensile Stress			
-- ²⁰	> -80	%	ISO 1817
100°C, 240 hr ²¹	> -80	%	IEC 60811-1-2
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity ²²	4.5E+16	ohms · cm	IEC 60093
Electric Strength	20	kV/mm	IEC 60243-1
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	31	%	ISO 4589-2
Extrusion	Nominal Value	Unit	
Cylinder Zone 1 Temp.	130	°C	
Cylinder Zone 2 Temp.	150	°C	

Cylinder Zone 3 Temp.	170	°C
Cylinder Zone 4 Temp.	180	°C
Die Temperature	180	°C

NOTE		
1.	Compound, ISO 1872-2	
2.	Compound	
3.	4 days, Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
4.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
5.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
6.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
7.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
8.	heat flux 35 kW/m ² , 3 mm plaque	
9.	heat flux 35 kW/m ² , 3 mm plaque	
10.	heat flux 35 kW/m ²	
11.	heat flux 35 kW/m ² , 3 mm plaque, MJ/dm ³	
12.	heat flux 35 kW/m ² , 3 mm plaque	
13.	heat flux 35 kW/m ² , 3 mm plaque	
14.	heat flux 35 kW/m ² , 3 mm plaque, m ² /dm ³	
15.	Compound, 5.3	
16.	at high temperature, 4 hrs, Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
17.	Compound	
18.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
19.	Compound	
20.	After UV ageing, Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
21.	Cable (0.7 mm insulation over 1.5 mm ² solid Cu)	
22.	Compound	

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