Technical Data Sheet

Isover Protect Graphite

General Product Description

Isover Protect Graphite is a high specification formulation designed to prevent the spread of fire, smoke and gases through openings in fire rated walls and floors. Isover Protect Graphite expands when it is subjected to fire and closes openings around penetrations when any combustible or low temperature melting materials have burnt away.

Isover Protect Graphite is designed to fire seal difficult services which traditional fire rated mastics do not achieve such as large plastic pipes.

Isover Protect Graphite can be used with a suitable filling material, i.e. stone wool backing material in order to ensure correct width to depth ratio and to reduce the shrinking of the sealant during curing. Minimum depth and maximum width of the joints are included in the installation instructions. Thermal activation takes place at 150 °C when the material will expand (intumesce) to prevent the passage of fire and smoke for periods up to 4 hours.

Properties & Precautions

- Classified in most constructions for plastic pipes, cables, conduits and combustible pipe insulations
- May be used in combination with Isover Protect Coated Board; see the board's installation instructions for details
- Easy to apply
- High sound insulation
- Low emissions - environmentally and user friendly
- Permanently flexible – will accommodate movement up to 12.5%
- No priming necessary for application to most materials; see the installation instructions for further details
- Suitable for most surfaces, included concrete, bricks, Leca, steel, wood, gypsum, glass, plastics and most non-porous surfaces
- Hardens quickly, tack free after 1 hour
- The fire performance specification of the joint filler has been derived when the joint filler has been allowed to cure for 30 days
- Minimum 18 months storage time (under correct conditions)
- 30 years working life
- Available in the Eco-Foil system

Emissions Data (Indoor Air Quality)

Regulation or Protocol	Conclusion
French VOC Regulation	Pass/A+
Italian Regulation (public procurement)	Pass
German AgBB (2021)/ABG (2022)	Pass
Belgian Regulation	Pass
EMICODE	Pass/EC 1 PLUS
Blue Angel (DE-UZ 123)	Pass
BREEAM-International	Pass/Exemplary Level
BREEAM UK	Pass/Exemplary Level
BREEEAM NL	Pass/Exemplary Level
BREEAM-NOR	Pass/Exemplary Level
Finnish M1 Classification	Pass/M1
SINTEF	Pass
Byggvarubedömningen	Pass
DICL	Pass/Emission Class 1
ECOproduct	Pass/Very Low Emitting
WELL (EU)	Pass
LEED-EU (v4.1) BETA	Pass

Sound Insulation

Description	Sound reduction
Single sided seal ≥ 25mm depth	Rw 53 dB
Double sided seal ≥ 25mm depth	Rw > 53 dB

Tested according to EN ISO 10140-2:2010. Usage of any backing material is optional, due to the tests being conducted with sealant only.

Pipe End Configurations

When testing pipes, one can choose not to cap (or close) the pipe, or cap the pipe inside the furnace, or outside the furnace, or on both sides. The configuration chosen depends on the intended application of the pipe and/or the installation environment.

The code defining if a pipe is capped is stated after the fire classification. For instance, EI 60 C/U which means the pipe was capped inside the furnace, and uncapped outside the furnace. The test configuration defines the approvals possible.

The producer's engineering judgement based on EN 1366-3:2022 is:

Intended use of pipe		Pipe end condition [3]
Rainwater pipe, plastic	At drainage	U/U [1]
	Not at drainage	C/C [2]
Drainage or sewage pipe, plastic	Ventilated drain	C/U [1]
	Unventilated drain	U/C [2]
	Drain w/water trap	U/C [1]
	Not at drainage	C/C [2]
Metal or plastic pipe in closed system (water, gas, air etc.)		C/C [1]
Metal pipe in ventilated system (sewage etc.)		U/C [1]
Flue gas recovery system pipe, plastic		U/C [1]
Pipe with open ends and ≥ 50cm length on both sides, plastic		U/U [2]
Waste disposal shaft pipe, metal		U/C [2]

1) Suggested in EN 1366-3:2022. 2) Producer's judgement based on tests. 3) U/U classified fire seals cover C/U, U/C and C/C. C/U classified fire seals cover U/C and C/C. U/C classified fire seals cover C/C.

Air Permeability

Positive Pressure (Pa)	Leakage ($m^3/h/m^2$)	Negative Pressure (Pa)	Leakage ($m^3/h/m^2$)
25	0.00	25	0.00
50	0.00	50	0.00
100	0.00	100	0.00
200	0.00	200	0.00
300	0.00	300	0.02
450	0.03	450	0.06
600	0.13	600	0.12

Tested according to EN 1026: 2016.

Technical Data

Condition	Ready for use, water based graphite sealant
Specific gravity	1.48 – 1.55
pH	8.00 – 9.50
Reaction To Fire	B – s1 , d0
Flash point	None
Expansion rate	Approx. 1 : 25
Non-sticky	60 minutes
Film forming	30 minutes
Totally hardened	3 to 5 days depending on thickness and temperature, full cure may take up to 30 days
Flexibility	Low to medium 12.5% according to ISO 11600
Durability/service	Class Z_2 - intended for internal conditions with humidity classes other than Z_1 excluding temperatures below O °C
Thermal conduct.	0.85 W/mK (+/- 3%) @ 20mm depth
Storage	18 months stored in unopened cartridges. To be stored in temperatures between 5 °C and 30 °C
Working life	30 years
Service temp.	-15 °C to +75 °C
Application temp.	+4 °C to +30 °C
Compatibility	Suitable for use with most materials, but should not be used In direct contact with bituminous materials
Limitations	Should not be used in permanently damp areas or in joints with excessive movement, joints at floor level or joints below the ground
Classification	CE-marked - Sealant for fire rated penetrations class EI 240
Standard Colours	Dark grey (may grow darker during curing)
Packaging	Box containing 25 foils/cartridges each 300/310 ml Pallets 310 ml cartridges: 80 boxes per pallet equals 2000 pcs Pallets 300 ml foils: 60 boxes per pallet equals 1500 pcs

Test Standards

This Technical Data Sheet and the Installation Instructions are based on the product's ETA issued in accordance with regulation (EU) No 305/2011 on the basis of EAD 350454-00-1104, September 2017, tested to EN 1366-3 in conjunction with EN 1363-1. The product hold the following approval marks; CE-mark for Europe.

Quality Assurance

As a part of our policy of on-going product development and testing, we reserve the right to modify, alter or change product specifications without giving notice. All information contained in this document is given in good faith and is provided for guidance only. Any drawings provided are for illustrative purposes only.
As Saint-Gobain Isover has no control over the methods or competence of installation and of prevailing site conditions, no warranties, expressed or implied, are intended to be given as to the actual performance of the product mentioned or referred to herein and no liability whatsoever will be accepted for any loss, damage or injury arising from the use of the information given.

Technical data sheet to ETA 24/0366

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