K-FLEX K-FIRE COATING

General Product Description

K-FLEX K-FIRE Coating spray grade, is an ablative sealant coating designed to enhance, seal and fire protect mineral fibres. It is based on a durable polymer system with inert fillers, non-halogenated fire retardants and a preservative to resist microbial attack.

K-FLEX K-FIRE Coating is designed to be applied via spraying directly onto mineral fibres. The coating dries to give a sound, flexible white surface finish. During installation of mineral fibres, the cured seal- ant coating reduces de-lamination and increases surface stability for adhesive and fixing sealant application.

The ablative property of the coating resists flame spread and protects the mineral fibres against fire penetration by significantly reducing the permeability of the mineral fibre core and prevents the passage of hot gases, thus reducing the temperature rise on the unexposed side and reducing heat conduction through the building services.

Mineral fibres coated with K-FLEX K-FIRE Coating are designed to prevent the spread of fire and smoke through openings in fire rated walls and floors, also where openings are formed to allow the installation of multiple building services. The system will also maintain the acoustic design performance.

Properties & Precautions

- The coating applied on mineral fibres is classified for all types of constructions with or without building service penetrations.
- Simple and very quick to install.
- Easy to retrofit additional building services after installation.
- Permanently flexible - will accommodate movements during fire and smaller movements in the construction it has been fitted within.
- Suitable for most surfaces, including concrete, bricks, masonry, steel, wood, gypsum, glass, plastics and most non-porous surfaces.
- May be used in unlimited lengths in walls with heights up to 1200 mm and in floors with widths up to 120 mm.
- May be installed in gypsum walls without framing around the open- ing.
- Halogen free with added fungicides.
- Once fully cured, the coated board resists water and frost.
- The fire performance specification of the coating has been derived when the seal has been let to cure for a month.
- Precautions are required to be taken to prevent a person stepping onto a blank horizontal penetration seal.
- On site, the coating must be used together with K-FLEX K-FIRE Acrylic when sealing around building services.
- The coating is not intended for application on bituminous substrates or substrates that can extrude certain oils and plasticizers or solvents.
- The coating is not recommended for use in submerged joints or areas exposed to high abrasion.
- The coating should not come into contact with food or medical applications.

Sound Insulation

Description	Sound reduction
K-FLEX K-FIRE Coating 1.0mm WFT on both sides of minimum 50mm thick stone wool with density minimum 160kg/m3	Rw 55 dB

K-FLEX K-FIRE Coating has been tested at BM Trada (UKAS accredited); according to EN ISO 10140-2:2010.

Resistance to Fire – Blank Seals

Construction	Description	Classification
Flexible & rigid walls comprise gypsum, masonry, aerated concrete or concrete	Unlimited width by 1200mm high seal with double 50mm thick stonewool at density minimum 160kg/m3 coated on both outer faces with 1.0mm WFT of K-FLEX K-FIRE Coating	EI 120 (E 120)
Rigid walls comprise masonry, aerated concrete or concrete, within walls or between the head of walls and the soffit of floor slabs	Unlimited width by 1200mm high seal with single 60mm thick stonewool at density minimum 160kg/m3 coated on both faces with 1.0mm WFT of K-FLEX K-FIRE Coating	EI 90 (E 240)
	Unlimited width by 1200mm high seal with double 60mm thick stonewool at density minimum 160kg/m3 coated on both sides with 1.0mm WFT of K-FLEX K-FIRE Coating	EI 180 (E 240)
	Unlimited width by 120mm high seal with single 100mm thick stonewool at density minimum 35kg/m3 compressed into gap by 40% and coated on both faces with 1.2mm WFT of K-FLEX K-FIRE Coating overlapped by 15mm onto wall surface	EI 180 (E 240)
Rigid floors comprise aerated concrete or concrete within floors or between floors and walls	Up to 2400mm by 1200mm seal with single 60mm thick stonewool at density minimum 160kg/m3 coated on both faces with 1.0mm WFT of K-FLEX K-FIRE Coating	EI 90 (E 120)
	Unlimited length by 120mm wide seal with single 60mm thick stonewool at density minimum 160kg/m3 coated on both faces with 1.0mm WFT of K-FLEX K-FIRE Coating	EI 180 (E 240)
	Unlimited length by 120mm wide seal with top flush sin- gle 100mm thick stonewool at density minimum 33kg/m3 coated on top face with 1.0mm WFT of K-FLEX K-FIRE Coating	EI 180 (E 240)

NB. For penetration seals, please see the Installation Instructions for K-FLEX K-FIRE Board.

Installation Instructions

1. Before installing the stonewool core, please ensure that the surface of all surrounding constructions is free from all loose contaminants, dust and grease. The stonewool should be dry and sound, and any large loose pieces should be brushed off before spraying.
2. K-FLEX K-FIRE Coating is water based, so in cases where corrosion protection is a problem, some metals may require a barrier between the seal and the surface prior to this installation.
3. Select the type of stonewool core and friction fit into the seal according to the fire resistance table on page 1. To secure high density stonewool boards, please seal between the stonewool and the surface of all surrounding constructions on both sides with K-FLEX K-FIRE Coating Acrylic which will act as an adhesive.
4. When fitting stonewool boards into gypsum walls the side of the boards should be flush with the surface of the gypsum on both sides.
5. When fitting double layer stonewool boards in masonry or concrete constructions, the boards should be flush with the surface of the construction on both sides to maximize the fire resistance. If this is not possible, there should be an air gap of at least 30mm between the boards.
6. When fitting single layer stonewool in masonry or concrete constructions, it can be positioned to either side of the construction or anywhere in between.
7. When installing stonewool in hollow floor slabs, fire seals should be installed from the soffit side of the floor assuming there is sufficient thickness of concrete below the void. Where this is not the case, tubular voids should be filled with stone wool normally the same thickness as the depth of the floor slab.
8. Spray apply K-FLEX K-FIRE Coating to the stonewool according to the fire resistance table on page 1. Spraying pressures will depend on the type of pump and nozzle used approximately 1700 to 2300 psi using a 25 to 35 thou' tip. Apply the coating in smooth strokes and with the minimum of overspray to achieve an even film thickness and consistent drying across the stonewool.
9. The required wet film thickness (WFT) is usually achieved when the surface is to a satisfactory proper white finish when dry.
10. Overspray can increase drying times. Drying times will be dependent on film thickness, ambient temperature and humidity and may be reduced by using drying ovens and/or fans.
11. K-FLEX K-FIRE Coating can be over-painted with most emulsion or alkyd (gloss) paints.

Supporting Constructions

Flexible walls must have a minimum thickness of 100mm and comprise steel studs or timber studs*) lined on both faces with minimum 2 layers of 12.5mm thick boards. Rigid walls must have a minimum thickness of 150mm and comprise concrete, aerated concrete or masonry, with a minimum density of 650 kg/m3. Rigid floors must have a minimum thickness of 150mm and comprise aerated concrete or concrete with a minimum density of 650 kg/m3.

*)Timber studs: no part of the penetration seal may be closer than 100mm to a stud, and minimum 100mm of insulation of class A1 or A2 according to EN 13501-1 must be provided within the cavity between the penetration seal and the stud.

Emission data (indoor air quality)

K-FLEX K-FIRE Coating complies with the requirements of BREEAM according to the M1 Protocol for Chemical and Sensory Testing of Building Materials as published by RTS version 15.12.2004 which is the best possible environmental and indoor hygiene health protection mark for coatings.

Compound	Emission rate after 4 weeks
TVOC	0.20 mg/m2h
Formaldehyde	n.d.
Ammonia	n.d.
Carcinogenic	n.d.
n.d. means not detected	

Tested by Eurofins Product Testing, report number 392-2014-00000407B.

Packaging

K-FLEX K-FIRE Coating FR Coating spray grade is available in 200 litre plastic lined smooth sided steel drums or in 8 litre plastic pails.

Technical Data

Form	Ready to use viscous paste
Cure system	Water loss
Colour	White
Non-sticky	Max. 75 minutes
Totally hardened	3 to 5 days depending on thickness and temperature
Flexibility	Low to medium, 12.5%
Specific Gravity	1.3 – 1.4
pH	8.5 - 9.2
Flash point	None
Solids Content	> 58 %
Temperature range	-30°C to +80°C (when hardened)
Application temp.	+10°C to +30°C
Shelf life	Up to 12 months when stored in unopened containers under cool dry conditions. AVOID FROST and extremes of temperature. Stored in temperatures between 5°C and 30°C
Durability	Up to 25 years when used as recommended

Health and Safety

Wash the material from the skin while still wet. Material in contact with eyes should be washed out immediately with water.

Seek medical advice if discomfort persists. More detailed information can be found in the relevant K-FLEX K-FIRE Coating Safety Data Sheet.