

Flamex S

constructive solutions

One-part low modulus neutral cure fire rated silicone sealant

Uses

For fire protection of curtain walling, building façades, expansion joints and penetration seals, where pipes and cables pass through fire rated structures.

Advantages

- Tested to BS 476 Part 22:1987 (ISO 834)
- Up to a 4 hour fire rating in specified joint and penetration configurations
- Excellent adhesion
- 50% MAF allowing structural movement
- Meets BS 5889 Type A
- Prevents the passage of smoke through joints in fire conditions
- Acts as an acoustic sealant

Standards compliance

Flamex S has been tested to the following standards:

BS 476 Part 22: 1987 (ISO 834) in expansion joints achieving up to a 4 hour fire rating (fire rating table A).

BS 476 Part 22: 1987 (ISO 834) in pipe and cable penetration systems achieving up to a 4 hour fire rating (fire rating table B).

ISO 834 achieving over 1 hour (A - 60) fire resistance in joints, pipe and power cable penetrations (fire rating table C).

Centre Scientifique que du Bâtiment (CSTB) Test achieving 1 hour fire rating in pipe and power cable penetrations (fire rating table D).

Description

Flamex S is a fire rated silicone sealant which cures quickly and gives excellent adhesion to most building materials. The minimum width for joints when using Flamex S should be 6 mm. For joints between 6 and 12 mm wide a seal depth of 10 mm is recommended.

Attainment of a specific fire rating is dependent on the joint configuration. For detailed information see fire rating table A.

Attainment of a specific fire rating is dependent on penetration configurations. For detailed information see fire rating tables B, C and D.

Properties

| | |
|---------|-------------------|
| Form: | Thixotropic paste |
| Colour: | White/Grey |

Movement accommodation factor(MAF):

50% butt joints
100% lap joints

Physical or chemical cure:

Chemical cure

Skinning time (23°C at 50% RH):

2 hours

Cure rate (23°C at 50% RH):

2 mm per day

Application temperature:

5°C to 30°C

Typical Shore 'A' hardness: 20

Fire ratings

The fire rating tables give times for insulation and integrity ratings, These are defined as:

Insulation: The ability to restrict excessive heat transfer through the joint, preventing ignition from conduction on the cold side.

Integrity: The ability to remain intact during the test, thereby withstanding the pressures and stresses developed during a fire situation.

Fire rating table A

Method: BS 476 Part 22: 1987

| Joint size width x depth | Joint configuration | Integrity mins | Insulation mins |
|---|---------------------|----------------|-----------------|
| Polyethylene backed seal | | | |
| single sided - on fire side of test furnace | | | |
| 10 x 10 mm | A | 120 | n/a |
| 15 x 10 mm | A | 90 | 30 |
| 20 x 10 mm | A | 60 | 30 |
| 25 x 20 mm | A | 120 | 60 |

Polyethylene backed seal
single sided - on non-fire side of test furnace

| | | | |
|------------|---|-----|-----|
| 10 x 10 mm | A | 240 | 240 |
| 15 x 15 mm | A | 240 | 240 |
| 20 x 20 mm | A | 240 | 240 |
| 25 x 25 mm | A | 240 | 240 |

Polyethylene backed seal
double sided

| | | | |
|------------|---|-----|-----|
| 10 x 10 mm | B | 240 | 240 |
| 15 x 10 mm | B | 240 | 240 |
| 25 x 20 mm | B | 240 | 240 |

Flamex S

Rock fibre backed seal

single sided - on fire side of test furnace

| | | | |
|------------|---|-----|----|
| 25 x 10 mm | A | 120 | 30 |
|------------|---|-----|----|

Rock fibre backed seal

single sided - on non-fire side of test furnace

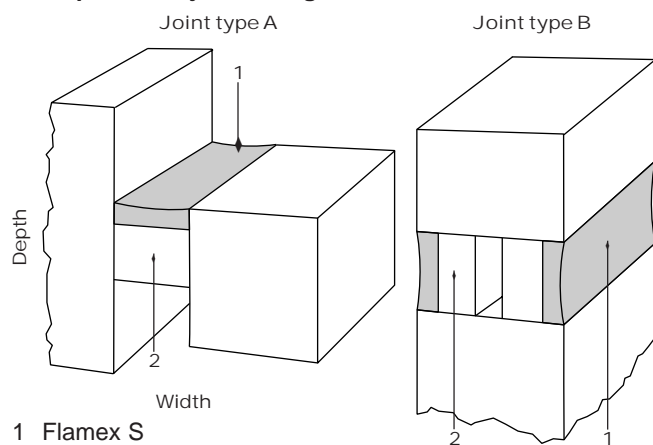
| | | | |
|------------|---|-----|-----|
| 25 x 10 mm | A | 240 | 240 |
|------------|---|-----|-----|

Rock fibre backed seal

double sided

| | | | |
|------------|---|-----|-----|
| 25 x 10 mm | A | 240 | 240 |
|------------|---|-----|-----|

Example of test joint configurations



- 1 Flamex S
- 2 Backing material

Fire rating table B
Method: BS 476 Part 22 : 1987

| Services | Insulation rating | Integrity rating |
|--|-------------------|------------------|
| 10 mm Flamex S and 75 mm mineral wool | | |
| 150 x 150 mm penetration | | |
| 100 mm diameter steel pipe | 1 hr | 4 hrs |
| 25 mm diameter cable | 2.5 hrs | 4 hrs |
| 1 x 25 mm cable; 4 x 12.5 mm cable | 1.5 hrs | 4 hrs |
| None | 1.5 hrs | 4 hrs |
| 20 mm Flamex S and 25 mm mineral wool | | |
| 150 x 150 mm penetration | | |
| 25 mm diameter cable | 1 hr | 2 hrs |
| 20 mm Flamex S and 75 mm mineral wool | | |
| 150 x 150 mm penetration | | |
| 25 mm diameter steel pipe | 4 hrs | 4 hrs |
| 1 x 25 mm cable; 4 x 12.5 mm cable | 4 hrs | 4 hrs |
| 20 mm Flamex S and 50 mm mineral wool | | |
| 150 x 150 mm penetration | | |
| None | 1.5 hrs | 4 hrs |

20 mm Flamex S and 25 mm mineral wool

| | | |
|-------------|-------|-------|
| 25 mm cable | 4 hrs | 4 hrs |
| None | 4 hrs | 4 hrs |

Fire rating table C
Method: ISO 834

| Penetration size | Penetrant | Backing material | Fire rating |
|------------------|-----------|------------------|-------------|
|------------------|-----------|------------------|-------------|

Gypsum board, lightweight wall: Flamex S depth of 12 mm, ceramic fibre backing

Tested non-fireside of test furnace

| | | | |
|--|---|--------|---------|
| Sleeve 160 mm diameter galvanised steel 0.8 mm thick | 2 cables EKKJ 3 x 10 x 10 mm ² 1KV Cu Core | 114 mm | 60 mins |
|--|---|--------|---------|

Gypsum board, lightweight wall: Flamex S depth of 2 x 12 mm, ceramic fibre backing

Tested fireside and non-fireside of test furnace

| | | | |
|--|--|--------|---------|
| Sleeve 160 mm diameter galvanised steel 0.8 mm thick | 2 cables EKKJ 3 x 10 x 10 mm ² 1KV Cu Core | 102 mm | 60 mins |
| 450 mm diameter | Ventilation duct 400 mm diameter galvanised steel 0.8 mm thick | 98 mm | 60 mins |

| Penetration size | Penetrant | Backing material | Fire rating |
|------------------|-----------|------------------|-------------|
|------------------|-----------|------------------|-------------|

Gypsum board to concrete: Flamex S depth of 12 mm, ceramic fibre backing

Tested fireside or non-fireside of test furnace

| | | | |
|------------------|------|--------|---------|
| 30 mm wide joint | None | 110 mm | 60 mins |
|------------------|------|--------|---------|

Concrete floor: Flamex S depth of 12 mm, ceramic fibre backing

Tested non-fireside of test furnace

| | | | |
|--------------|---|--------|---------|
| 400 x 400 mm | 48.3 mm o.d. mild steel pipe 2.6 mm thick | 138 mm | 60 mins |
|--------------|---|--------|---------|

Flamex S

Fire rating table D

Method: Centre Scientifique que du Bâtiment

| Penetration size | Penetrant | Insulation rating | Integrity rating |
|--|---|-------------------|------------------|
| Concrete substrate: Flamex S depth of 12 mm, 110 mm ceramic fibre backing | | | |
| Tested non-fireside of test furnace | | | |
| 333 x 200 mm | Cables — 2 x type 88-448/88 Cu 1 x type 88-224/4 Cu | 60 mins | > 120 mins |
| 330 x 200 mm | Cables — 1 x type 88-448/88 Cu 1 x type 88-224/4 Cu | 60 mins | > 120 mins |
| 200 mm diameter | NB80 mild steel pipe 60 mm o.d. | 60 mins | > 120 mins |

The fire ratings given are specific to the conditions of the test and provide a good indication of the expected performance of the sealant in a fire situation. Users should satisfy themselves that the test results are applicable to their own installations. Testing of a particular system may be required. To achieve any specific fire rating, all substrates being used must have at least an equivalent fire rating.

Application instructions

Joint preparation

Joint surfaces must be thoroughly dry, clean, and free from frost and contamination. Remove all laitance by rigorous wire brushing, grinding or grit blasting. Remove all rust, scale and protective lacquers. Any oil or grease should be removed with Fosroc Equipment Cleaner.

Application

Flamex S should be backed or supported with a closed cell polyethylene foam of nominal density 35 kg/m³, a ceramic fibre blanket of nominal density 128 kg/m³, or mineral wool of nominal density 100 kg/m³. The choice is dependent upon the performance level required and the type of joint being sealed. Contact the local Fosroc office for details.

Where using a closed cell polyethylene foam ensure the diameter cord selected will give sufficient compression and support to the sealant. In construction or contraction joints a bond breaker tape should be used.

Extrude sealant firmly into the joint ensuring complete contact with joint faces.

Mask the face edges of the joint with masking tape before

sealing to prevent contamination of the substrate and remove the masking tape immediately after tooling.

Priming

On cement and concrete, priming with Flamex S Primer is recommended.

Sufficient primer should be transferred to the working container. Do not decant more primer than can be used in 1 hour. Apply by brush to give a thin uniform layer. Flamex S should be applied after 30 minutes. The maximum sealant application time is 3 hours. Application temperatures for the primer are 5°C to 30°C.

Any unused decanted primer should not be returned to the original container but disposed of in the appropriate manner. Any brushes and containers should be cleaned with Fosroc Equipment Cleaner.

Finishing

Flamex S should be tooled within 5 minutes of sealing to ensure good contact between the sealant and the substrate.

Cleaning

Uncured Flamex S can be removed from tools and non-porous surfaces using Fosroc Equipment Cleaner. Sealant adhering to porous surfaces should be left to cure and then removed by abrasion.

Limitations

Flamex S should not be applied to surfaces that are below 5°C.

Flamex S should not be used against substrates that bleed oils, plasticisers or solvent.

Flamex S is not intended for use as the structural seal in any application.

Estimating

Guide to Flamex S quantities

| Joint size in mm | Litres per metre run | Metre run per 380 ml cartridge |
|------------------|----------------------|--------------------------------|
| 10 x 15 | 0.150 | 2.5 |
| 15 x 15 | 0.225 | 1.7 |
| 20 x 15 | 0.300 | 1.3 |

Packaging

Flamex S is supplied in 380 ml plastic cartridges packed in cartons of 20.



Flamex S

Storage

Flamex S has a storage life of 9 months if kept in a dry store in the original, unopened container, at between 5°C and 25°C.

Flamex S Primer should be stored in accordance with the UK Highly Flammable Liquids and Liquefied Petroleum Gases Regulations 1972.

Precautions

Health and safety

For further information refer to appropriate Product Safety Data Sheet.

Fire

Flamex S is non-flammable.

Flamex S Primer: Highly flammable liquid. Keep away from all sources of ignition — No Smoking. Avoid contact with skin and eyes and inhalation of vapours. Wear suitable gloves and eye/face protection. Use only in well-ventilated areas.



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Important note

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