



FireSeal S

Product

Simson FireSeal S(silicone) is a fire-retardant, neutral curing silicone sealant.

Applications

Suitable for both inside and outside applications in building construction, ship/yacht building and industry. For sealing (connection) joints, around window frames, outlets through walls and floors of pipes, cables, ventilation ducts etc. and as glazing sealant.

Features

- Solventfree and free of halogenated additives.
- Permanently elastic.
- Good UV- and weather resistance.
- Tested on fire resistance by a.o. TNO and Warrington.
- Complies to DIN 4102 class B1.
- Tested according to IMO-resolution A.687 (17).

Method of use

Substrates: Substrates must be solid, clean, dry and free of dust and grease/oil. On porous substrates such as concrete, cellular concrete, gypsum and fibre cement Simson Primer MSP is recommended. On bare metals such as anodised aluminium, stainless steel, galvanised steel, copper, lead and zinc the use of Simson Prep M is recommended.

Joint construction: Requirements to the joint construction should be at least the same - as far as fire resistance is concerned - as requirements to the total (wall)construction. The fire resistance of the joint construction can be increased considerably by sealing the joint both sides. To increase the fire resistance it is better to use non flammable materials such as mineral wool or ceramic cord or blanket instead of regular backing foam. The joint depth of expansion joints should be roughly $\frac{2}{3}$ of the joint width. Both depth and width should be at least 6 mm.

Application: Extrude FireSeal S to the backing material with a hand- or air pressure gun.

Tooling: Because of skin forming press the sealant to the sides of the joint within 10 minutes with a spatula or pointing trowel and smoothen immediately. A light soap solution prevents sticking of the sealant to the tool. Avoid penetration of soap solution between sealant and joint wall, because this can create loss of adhesion.

Cleaning: Cured sealant is not soluble and can only be removed mechanically (e.g. with a razor blade or by sanding).

Combustibility

Low flammable as per DIN 4102 Class B1 in applications in (max. 40 mm wide) joints between solid mineral building materials.



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Surface spread of flame

Tested according IMO-resolution A.687 (17) by the laboratory "Aanwending der Brandstoffen en Warmteoverdracht" – University of Gent, Belgium.

Fire resistance

Fire resistance is the time in minutes, during which a construction meets certain criteria regarding stability (may not collapse), flame penetration (integrity) and heat transfer (thermal insulation criterium). The thermal insulation criterium specifies that the temperature of the structure on the none-fire side may not increase by more than +180°C locally and maximum +140°C as an average. Fire resistance tests are based on the so-called Standard Heat Curve according to ISO 834.

TNO-Report 96-CVB-R0331

Determination of the fire resistance is according to NEN 6069:1991 (utilising the ISO 834 curve). For determining the fire resistance criteria the draft European standard "Fire resistance of service installations; part 4 linear joint seals" was used. The following tables are based on TNO-and Warrington reports and give information about details of joint constructions, based on fire resistance requirements. Basically this refers to vertical joints in a (at least 100 mm thick) wall in concrete or masonry.

Double-sided sealed with FireSeal S:

One-side sealed with FireSeal S:

| width mm | depth mm | backing material | FIRE RESISTANCE | | width mm | depth mm | backing material | FIRE RESISTANCE | |
|-------------|-------------|---------------------|--------------------------------|---------------------------------|-------------|-------------|---------------------|--------------------------------|---------------------------------|
| | | | flame resistance minutes | thermal isolation minutes | | | | flame resistance minutes | thermal isolation minutes |
| 10 | 10 | PE | 240 | 30 | 10 | 10 | PE | 240 | |
| 10 | 10 | MW | 240 | 120 | 10 | 10 | MW | 240 | 30 |
| 15 | 10 | PE | 240 | 30 | 15 | 10 | PE | 240 | |
| 15 | 10 | MW | 240 | 120 | 15 | 10 | MW | 240 | 30 |
| 20 | 15 | PE | 240 | 60 | 20 | 15 | PE | 240 | 30 |
| 20 | 15 | MW | 240 | 120 | 20 | 15 | MW | 240 | 60 |
| 25 | 20 | MW | 240 | 180 | 25 | 20 | MW | 240 | 120 |
| 30 | 20 | MW | 240 | 180 | 30 | 20 | MW | 240 | 120 |
| 40 | 20 | MW | 240 | 180 | 40 | 20 | MW | 240 | 120 |

MW: Mineral wool
PE: Polyethylene (standard backing foam)



FireSeal S

Technical data

| | | |
|-------------------------|---|-----------------|
| Components | 1 | |
| Curing system | moisture curing, ketoxime | |
| Specific gravity | 1.3 g/ml | (20°C) |
| Flow resistance (25 mm) | < 1 mm | (20°C) |
| Skinforming (start) | approx. 15 min. | (23°C/60% R.H.) |
| Tackfree | approx. 35 min. | (23°C/60% R.H.) |
| Tensile strength | approx. 0.6 N/mm ² | |
| Elongation at break | approx. 100% | |
| Shore A | ± 40 | (DIN 53505) |
| Movement accommodation | 20% | |
| Temperature resistance | from -40°C up till +90°C (long time exposure) | |
| Weathering resistance | no influence from weathering and temperature, ozone or UV-radiation | |
| Colour | white, grey and black on demand | |
| Packaging | 310 ml cartridge, other packaging on request | |

Storage stability

FireSeal S can be stored for 12 months in an original, unopened container under dry conditions at temperatures between +5°C and +30°C. Opened packaging has limited shelf life.

Further information

The following publication is available on request:

- Material Safety Data Sheets (MSDS)

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