



TECHNICAL DATA SHEET

FIRE STOP NEUTRAL SILICONE

Description

ALCOLIN FIRE STOP NEUTRAL SILICONE is a high-quality silicone designed for applications requiring a flame-resistant sealant, offering up to 4 hours of fire resistance with regular backing material in the joint. It has excellent adhesion to the majority of building materials, i.e. concrete, cement, metal and glass. It has a high degree of flexibility, making it ideal for application on expansion joints.

Features & Benefits

- Fire rated
 - Up to 4 hours' fire resistance with regular backing material in the joint.
- Heat resistance
 - can go up to +150°C.
- Movement accommodation of 25%
 - excellent for sealing flexible joints.
- Non-sag
 - can apply on vertical surfaces.
- Versatile
 - bonds and seals a wide variety of substrates.
- Waterproof and abrasion resistant
 - long lasting bond durability.
- UV resistant
 - non-yellowing.
- Low shrinking on curing
 - will not pull away from joints.
- Low odour
 - ideal for use in areas with poor ventilation.
- Chemical resistant
 - Unaffected by alcohols, dilute acids and alkalis, soap and household detergents.
- Neutral curing
 - not corrosive to metals and suitable for alkaline surfaces.
- Flexible at low temperatures
 - as low as -50°C.



Fire Standards

- EI 240 and RF 240 (EN 13501-2) flame resistance able to withstand flame exposure on one side only, without the transmission of the flame to the unexposed side, also able to restrict the temperature rise of the unexposed face for a period of 4 hours.
- Smoke classification NF F16101 (F1) – low toxicity and opacity of smoke.

Other Standards

- CE Mark: EN15651-1FExt-Int (European standard for non-structural façade sealants for sealing exterior wall joints, window and door perimeter joints in building construction.
- ISO 11600 F+G 25LM.

Applications

- Sealant for expansion joints in firewalls and floors.
- Sealant for connections, pipes, cable transits, etc. where fire protection is required.
- Sealant for doors with fire resistance.
- In general, a sealant wherever flame resistance is required.
- Suitable for internal and external sealing applications, waterproofing and weatherproofing.
- Perimeter sealing of doors, windows and cladding panels.
- Sealing of double-glazed units and joints between glazing and supporting structures.
- Industrial sealant for the automotive, aircraft and ship-building industries.
- Sealant for the electrical and electronics industries e.g. encapsulation of wires, insulating appliances.

Adhesion

ALCOLIN FIRE STOP NEUTRAL SILICONE exhibits excellent primerless adhesion on alkaline surfaces such as concrete, fibrous cement, mortar, and plaster. It bonds strongly to many non-porous materials e.g. ceramics, glass, enamel, porcelain, coated wood, painted surfaces, epoxide, canvas, rubber, most metals (mild steel, aluminium, lead, copper, tin, galvanized iron, brass or zinc) and some plastics (acrylics, polyester, polyacrylate, polycarbonates, polystyrene, fiberglass, formica, and rigid PVC).

Limitations

- ALCOLIN FIRE STOP NEUTRAL SILICONE used in contact with marble, granite, quartzite, and similar natural stone, may cause staining.
- May become discoloured in contact with some organic elastomers, which tend to bleed oil or solvents into the silicone, e.g. EPDM, APTK, Neoprene and Bituminous surfaces.
- Will not adhere to some plastics such as polyethylene, polypropylene and Teflon.
- Width of the joint must be at least 4 x greater than maximum expected joint movement.
- CANNOT be over-painted.
- Do not apply sealant when relative humidity is below 10% - cure rate will be affected.

Safety instructions

ALCOLIN FIRE STOP NEUTRAL SILICONE is nontoxic however, it is advisable to wear gloves to avoid direct skin contact. In the event of skin or eye contact, rinse thoroughly and immediately with water. Seek medical assistance if irritation or discomfort persists. Avoid breathing in vapours such as ketoxime. Always work in a well-ventilated area. Keep out of reach of children! Cured silicone rubber can be handled without any health risk. Refer to our Safety Data Sheets for further toxicological information and comprehensive handling instructions.

Surface preparation

Ensure surfaces are clean, dry and free of loose materials, dust, grease, rust and other contaminants. Surfaces such as metals and glass should be degreased with a solvent e.g. acetone. Plastics should be lightly abraded with emery paper. Soaps or detergents used to clean the surface must be rinsed away thoroughly with clean water to ensure that all traces of the soaps are removed before sealing. Use backing material when sealing deep cavities. If the area being sealed needs to be painted, ensure that the paint has dried before applying sealant. You cannot paint over silicone sealant! Poor surface preparation may result in the delamination of the silicone.

Directions for use

1. Refer to the sections 'Dimensions of Joints' and 'Formation of joints' before starting the job.
2. Ensure surfaces are prepared as above.
3. Use masking tape to get a clean, even sealant line and to eliminate cleaning difficulties on porous surfaces. Be sure to remove the tape before sealant begins to skin.
4. Cut tip off cartridge and screw the nozzle onto the cartridge. Cut the tip of nozzle at an angle to achieve the desired bead size. Apply silicone with a caulking gun in a continuous bead to the prepared joint.
5. Smooth down after application within 3- 5 minutes before skin formation occurs, by using a flat or rounded tool.

6. Remove unwanted silicone immediately.
7. Sealant dries to touch in 1 hour and reaches full cure after approximately 24 hours.
8. If the area being sealed needs to be painted, ensure that the paint has dried completely before sealing.

a. Dimensions of joints

1. Width must be at least 4 times greater than the maximum foreseen movement.
2. Depth of sealant is chosen on the basis of the joint's width, according to the following table (in mm).

WIDTH	5/6	7/9	10/12	12/15
DEPTH	5	6	7	8

3. For joint widths greater than 16mm, depth must be one half of width.

b. Formation of joints

1. A back-up or filler material should be used control the depth of the sealant and to act as a bond breaker to prevent adhesion to the bottom of the joint thereby preventing uneven stresses that would reduce the sealant performance.
2. The material used must be inert, mechanically stable, homogeneous, corrosion-resistant, and must not adhere to the sealant or adjacent material.
3. Suitable back-up materials include closed cell PVC foam, polyurethane foam, polyethylene foam and polyethylene tape. In order to obtain the best results of fire resistance, it is necessary to use mineral wool (density 100kg/m³).

c. Number of cartridges required per 100m of joint

Depth of joint in mm	Width of joint in mm								
		6	8	10	12	15	20	25	30
6		12	16	19	23	29	38	48	58
8		16	21	26	31	38	51	64	77
10		19	26	32	38	48	64	80	96
12		23	31	38	46	58	77	96	115
15		29	38	48	58	72	96	119	143
20		38	51	64	77	96	127	159	191
25		48	64	80	96	120	159	199	239

The following formulation can also be used:

$$\text{Number of cartridges} = \frac{\text{length (m)} \times \text{width (mm)} \times \text{depth (mm)}}{300 \text{ (cartridge volume in ml)}}$$

Cleaning

- Uncured silicone can easily be removed from the hands or tools using a clean solvent-soaked cloth, e.g. turpentine or paraffin. If removing uncured silicone from clothing, check fabric colour fastness before applying the above-mentioned solvents.
- Fully cured sealant can be removed by mechanical means, i.e. with a sharp knife or chemically using a Silicone stripper.

Storage stability

ALCOLIN FIRE STOP NEUTRAL SILICONE has a shelf life of at least 18 months if stored in a cool (below 25°C), dry place in its original moisture-tight container. If the material is kept beyond the recommended shelf life, it is not necessarily unusable, but a check should be performed to observe whether the product is still workable, applicable and uncured. To maximize the shelf life of the opened cartridge, it would be advisable to create an airtight environment. This can be achieved by removing the nozzle and wiping down the opening, placing a piece of plastic over it, and finally screwing the nozzle back on. A large screw inserted into the nozzle tip also helps.

Product packaging

- 300ml cartridge

Product data

i. Physical data – Uncured Silicone

Appearance		Homogenous creamy paste - Grey
Application temperature		+5°C to +50°C
Coverage – 300ml cartridge		12 meters (5mm x 5mm joint)
Curing time (23°C/55% RH)		Approx. 2mm / 24hrs
Skin over time (23°C/55% RH)	BS 5889	Approx. 35 min
Slump	ISO 7390	0mm
Volume loss	ISO 10563	Approx 5%

ii. Performance data – Cured Silicone (4 weeks @ 23°C, 55% RH)

Appearance		Similar to rubber
Shore A Hardness	ISO 868	22
Chemical resistance		Water, soap, brine – excellent Inorganic dilute acids, alkalis, mineral oils, grease, oil, fuel, hydrocarbons – very good
Elastic recovery (%)	ISO 7389	Approx 90
Elongation at break (%)	ISO 37	600
Modulus at 100% elongation (MPa)	ISO 37	0.36
Movement accommodation factor (%)		25
Service temperature range		Min.-50°C to Max.+150°C
Tensile strength (MPa)	ISO 37	1.1