BUILDING TRUST

PRODUCT DATA SHEET

Sikasil®-403 Fire

Fire-rated silicone joint sealant

DESCRIPTION

Sikasil®-403 Fire is a fire rated, silicone based, 1-component, UV-resistant, moisture-curing, low-modulus elastic joint sealant for external and internal applications.
Suitable for use in hot and tropical climatic conditions.

USES

Sikasil®-403 Fire is designed for weather proofing and sealing applications where durability under severe conditions is required.
Sikasil®-403 Fire is used as a fire-rated weather sealant for:
- Curtain wall and metal cladding facades
- Concrete, brickwork, precast and GRC façade joints

FEATURES

- Up to 4 hours fire resistance according to EN 1366-4
- Fire resistance tests passed according to EN 1363-1
- Particularly good resistance to weathering
- Movement capability of ± 50 % (ASTM C 719)
- Good adhesion to various substrates
- Neutral curing
- Low VOC

SUSTAINABILITY

- Certified according to "Low Emitting Materials as per Al Sa'fat - Dubai Green Building Evaluation System" by Dubai Central Laboratory (DCL)

CERTIFICATES AND TEST REPORTS

- Tested acc. to EN 1366-4
- Tested acc. to EN 1363-1
- Tested acc. to ASTM E84 and UL 723
- Tested acc. to ASTM C920 (class 50)
- Tested acc. to ASTM D412
- VOC test report (US EPA Method 24)
- VOC Emission Test Report (CDPH)

PRODUCT INFORMATION

Composition	Neutral cure silicone
Packaging	600 ml foil pack, 20 foil packs per box 300 ml cartridge, 12 cartridges per box
Colour	White, grey, concrete grey, black (other colors on request)
Shelf life	Sikasil®-403 Fire has a shelf life of 12 months from the date of production, if it is stored in undamaged, original, sealed packaging, and if the storage conditions are met.
Storage conditions	Sikasil®-403 Fire shall be stored in dry conditions, where it is protected from direct sunlight and at temperatures between +5 °C and +25 °C.
Density	~1.22 kg/l

TECHNICAL INFORMATION

Shore A hardness	~30 (28 d)	(CQP023-1 / ISO 868)
Tensile strength	~1.2 MPa	(CQP036-1 / ISO 527)
	~1.7 N/mm²	(ASTM D412)
Movement capability	±50 %	(ASTM C 719)
Service temperature	–40 °C min. / 150 °C max.	

Joint design

The joint width must be designed to suit the joint movement required and the movement capability of the sealant. The joint width shall be ≥ 10 mm and ≤ 45 mm. The joint depth shall be ≤ 15 mm.
A width to depth ratio of 2 : 1 must be maintained (for exceptions, see table below).

Standard joint widths for joints between concrete elements: (Movement Capability: ±50 % (ASTM C719) and ΔT: 80 °C)

Joint distance [m]	Min. joint width [mm]	Min. joint depth [mm]
2	10	10
4	12	10
6	18	10
8	22	11
10	28	14

For larger joints following depth should be maintained:

Joint width [mm]	Joint depth [mm]
30	15
35	18
40	20
45	20

All joints must be correctly designed and dimensioned in accordance with the relevant standards before their construction. The basis for calculation of the necessary joint widths are the type of structure and its dimensions, the technical values of the adjacent building materials and the joint sealing material, as well as the specific exposure of the building and the joints. For more detailed advice and instructions please contact our Technical Department.

Elongation at break	~500 %	(CQP036-1 / ISO 527)
	~900 %	(ASTM D412)

Consumption

Joint length [m] per 600 mL foil pack	Joint width [mm]	Joint depth [mm]
6	10	10
4	15	10
3	20	10
2	25	12
1.3	30	15
1	35	15
0.8	40	15
0.7	45	15

Ambient air temperature	5 °C min. / 40 °C max. (min. 3 °C above dew point temperature)	
Substrate temperature	5 °C min. / 40 °C max.	
Curing rate	~2 mm / 24 hours (23 °C / 50 % r.h.)	(CQP 049-2)
Skinning time	~35 min (23 °C / 50 % r.h.)	(CQP 019-1)

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Sikasil®-403 Fire cannot be overpainted.
- Do not use Sikasil®-403 Fire on natural stone.
- Do not use Sikasil®-403 Fire on bituminous substrates, natural rubber or on any building materials which might bleed oils, plasticizers or solvents that could attack the sealant. EPDM rubber in direct contact with Sikasil®-403 Fire have to be tested for compatibility prior to application. For specific advice contact Sika technical service.
- Do not use Sikasil®-403 Fire to seal joints in and around swimming pools.
- Do not use Sikasil®-403 Fire for joints under water pressure or for permanent water immersion.
- Colour variations may occur due to exposure to chemicals, high temperatures and/or UV-radiation (especially with the colour shade white). However, a change in colour is purely an aesthetic nature and does not adversely influence the technical performance or durability of the product.
- Do not expose uncured Sikasil®-403 Fire to alcohol containing products as this may interfere with the curing reaction.
- Use closed cell, polyethylene foam backing rods.

ECOLOGY, HEALTH AND SAFETY

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION

The substrate must be clean, dry, sound and homogeneous, free from oils, grease, dust and loose or friable particles. The following priming and/or pre-treatment procedures shall be followed:

Non-porous substrates

Anodised aluminium and stainless steel have to be pre-treated using Sika® Aktivator-205, Sika® Aktivator-100 or Sika® Cleaner P. Powder coated and PVDF coated metals have to be pre-treated using Sika® Aktivator-205. For details like application and flash-off times refer to the most recent Product Data Sheet of the respective pre-treatment product.

Porous substrates

Concrete, aerated concrete and cement-based renders, mortars and bricks shall be primed using Sika® Primer-3 N or Sika® Primer-210. For details like application and flash-off times refer to the most recent Product Data Sheet of the respective pre-treatment product.

Adhesion tests on project specific substrates must be performed prior to application. For more detailed advice and instructions please contact our Technical Department.

Note: Primers are adhesion promoters. They are neither a substitute for the correct cleaning of a surface, nor do they improve the strength of the surface significantly.

APPLICATION METHOD / TOOLS

Sikasil®-403 Fire is supplied ready to use. After the necessary substrate preparation, insert a suitable backing rod to the required depth and apply any primer if necessary. Insert a foil pack or cartridge into the sealant gun and extrude Sikasil®-403 Fire into the joint making sure that it comes into full contact with the sides of the joint and avoids any air entrapment. Sikasil®-403 Fire sealant must be firmly tooled against the joint sides to ensure adequate adhesion. It is recommended to use masking tape where exact joint lines or neat lines are required. Remove the tape within the skin time. Do not use tooling products containing solvents.

CLEANING OF EQUIPMENT

Clean all tools and application equipment immediately after use with Sika® Remover-208. Once cured, residual material can only be removed mechanically.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The information, and, in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

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All products are supplied under a management system certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and ISO 45001.