



Technical Data Sheet

DOWSIL™ FIRESTOP 700 Sealant

One-part silicone rubber

Features & Benefits

- Meets BS 476 Part 22
- Excellent unprimed adhesion to most porous and non-porous construction substrates
- Non-slump
- Joint movement capability $\pm 50\%$
- Neutral cure
- Halogen-free
- Conforms to ISO 11600-F&G-25LM
- A fire rating of up to 4 hours can be achieved
- Widely tested to many European specifications
- Tack-free in 1.5 hours
- Excellent weathering characteristics, including resistance to ozone, UV radiation and temperature extremes
- Long service life
- CE marked as a fire resistant according to ETAG 026
- Approved for railway standard EN 45545-2, R22/R23/R24-HL2

Applications

- The sealing of expansion joints and pipe and cable penetrations in fire rated structures.
- The provision of fire rated systems where expansion joints or penetration seals are required in curtain walling, building facades or partition walls.

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Property	Unit	Result
As Supplied		
Slump	mm	Max. 1
Working Time	minutes	15
Application Temperature	°C	+5 to +40
	°F	+41 to +104
Tack-free Time (23°C, 50% R.H.)	hours	1.5
Cure Rate (23°C, 50% R.H.) 1 Day	mm	After 1 day: 2
Joint Movement Capability	%	± 50

Description

DOWSIL™ FIRESTOP 700 Sealant is a low modulus, one-part, neutral curing, fire-rated silicone sealant. It has excellent unprimed adhesion to a range of common construction substrates including stone, steel, masonry, brick, wood, etc. It is ideal for weather-sealing of curtain walling, building facades and expansion joints where a fire rating is required. It is also suitable for use in penetration sealing systems where pipes and cables pass through fire rated structures.

Technical Specifications and Standards

DOWSIL™ FIRESTOP 700 Sealant has been tested to BS 476 Part 22/1987 in expansion joint configurations, Fulmer Yarsley Test Report No. J82973/1 and SGS Test Report No. J86464/1. It also has been tested to BS.476 Part22/1987 (ISO 834) in pipe and cable penetration systems, Fulmer Yarsley Test Report No. J82973/2. It meets ISO 11600-F&G-25LM.

In compliance with the fire resistance requirement according to ETAG 026

- Euroclass B according to EN 13501-1 (Reaction to fire)
- 2 to 4 hours fire resistance according to EN 1366-4 (Resistance to fire)

It meets the requirements of SNJF category 1 sealants.



It meets the requirements of DIN 18545, T2 and Class E of DIN 18540, T2, ISO 11600-F&G-25LM.

Fire Ratings

Fire test data is available illustrating that DOWSIL™ FIRESTOP 700 Sealant can achieve up to a 4 hour fire rating at specified joint and penetration configurations.

The test data provides a good indication of the expected performance of the sealant in fire situations. Users should satisfy themselves that specific applications for which DOWSIL™ FIRESTOP 700 Sealant is proposed are suitable and testing of a particular system may be required.

To achieve any specific fire rating, all substrates being used in the system must have at least an equivalent fire rating.

Substrate Preparation

Cleaning

Ensure that all surfaces are clean, dry, sound and free from frost. Clean all joints of release agents, water repellents, laitance, dust, dirt, old sealants and other contaminants which could impair adhesion. Metal surfaces should be cleaned and degreased by wiping with a suitable solvent using an oil- and lint-free cloth. For further advice on cleaning specific substrates please contact technical services department.

Note: When using any solvent, always provide adequate ventilation. Avoid heat, sparks and open flames. Observe and follow all precautions listed on solvent container label or Product Safety Data Sheet.

DOWSIL™ FIRESTOP 700 Sealant should not be applied to surfaces that are below 5°C (41°F) as it is impossible to guarantee a dry, frost-free surface at these temperatures.

Substrate Preparation (Cont.)

Adhesion

DOWSIL™ FIRESTOP 700 Sealant has excellent adhesion to most common construction substrates.

If in doubt, or if unusual substrates are involved, please contact the technical services department.

Cement or concrete should be primed with DOWSIL™ P Primer for optimum adhesion.

Dow will carry out specific adhesion and compatibility testing on individual substrates to ensure that correct recommendations can be made. If there is any doubt concerning any aspect of the use of DOWSIL™ FIRESTOP 700 Sealant, users are strongly advised to contact technical services department.

Back-up Materials

Backer materials have been evaluated in various joint designs, these being closed-cell polyethylene foam backer rod, ceramic fiber and mineral wool. In penetration sealing applications, mineral wool has been evaluated. Depending on the fire rating required and the joint/penetration design, the most suitable system can be selected by referring to the rating tables (see Table 1).

Table 1: Estimating sealant requirements

Linear meters per 310 ml cartridge						
Width		6 mm	10 mm	15 mm	20 mm	25 mm
Depth	10 mm	5.2	3.1	2.1	1.0	
	15 mm		2.1	1.4	1.0	0.8
	20 mm			1.6	1.0	0.8

Masking

Areas adjacent to the joints should be masked with tape to prevent contamination of the substrates and to ensure a neat sealant line. Masking tape should be removed immediately after tooling.

Finishing

The joint should be tooled within 5 minutes of application to ensure good contact between the sealant and the substrate. Tooling of the sealant also gives a smooth, professional finish.

Clean-up

Excess sealant should be cleaned off tools and non-porous surfaces whilst in an uncured state using a suitable solvent, such as DOWSIL™ R-40 Universal Cleaner. Sealant adhering to porous surfaces should be left until just cured and then removed by abrasion or other mechanical means.

Joint Design

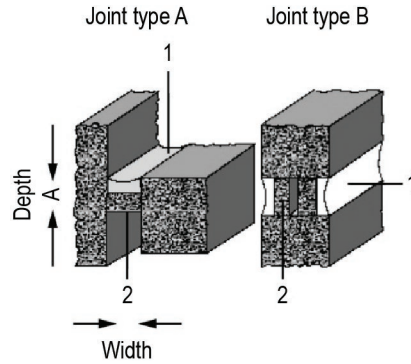


Figure 1: Typical joint configurations.

Legend

1. DOWSIL™ FIRESTOP 700 Sealant
2. Backing material

When designing joints using DOWSIL™ FIRESTOP 700 Sealant, the minimum width should be 6 mm. For joints between 6–12 mm wide, a seal depth of 10 mm is recommended.

Attainment of specific fire ratings is dependent on the joint configuration. Detailed information is given in Table 2.

Expansion joint types that have been tested are shown in Figure 1. The type of joint selected will depend on fire requirements for the project and aesthetics of the building.

For additional information or assistance, please contact the technical services department.

Table 2: Fire rating test reports J82973/1 and J86464/1

Width		Depth	Backer		Joint configuration	Rating	Sealant position
6 mm	x	10 mm	25 mm	CF	A	2 hours	NFS
10 mm	x	10 mm		PE	A	1 hour	NFS
10 mm	x	10 mm	25 mm	MW	A	2 hours	NFS
10 mm	x	10 mm (Double joint)		PE	B	3 hours	FS + NFS
10 mm	x	10 mm (Double joint)	25 mm	MW	B	4 hours	FS + NFS
10 mm	x	15 mm	25 mm	MW	A	3 hours	NFS
10 mm	x	20 mm	25 mm	CF	A	4 hours	NFS
15 mm	x	10 mm	25 mm	MW	A	2 hours	NFS
15 mm	x	15 mm	25 mm	CF	A	3 hours	NFS
15 mm	x	15 mm (Double joint)	25 mm	CF	B	4 hours	FS + NFS
15 mm	x	20 mm	25 mm	CF	A	4 hours	NFS
20 mm	x	10 mm	25 mm	MW	A	2 hours	NFS
20 mm	x	15 mm	25 mm	CF	A	3 hours	NFS

Table 2: Fire rating test reports J82973/1 and J86464/1 (Cont.)

Width		Depth	Backer	Joint configuration		Rating	Sealant position
20 mm	x	20 mm		PE	A	2 hours	NFS
20 mm	x	20 mm	25 mm	CF	A	4 hours	NFS
20 mm	x	20 mm (Double joint)		PE	B	4 hours	FS + NFS
25 mm	x	15 mm	25 mm	CF	A	3 hours	NFS
25 mm	x	20 mm	25 mm	CF	A	4 hours	NFS
10 mm	x	10 mm		PE	A	2 hours	FS
10 mm	x	10 mm	25 mm	MW	A	2 hours	FS
20 mm	x	10 mm		PE	A	1 hour	FS
25 mm	x	10 mm	25 mm	MW	A	2 hours	FS
25 mm	x	20 mm		PE	A	2 hours	FS

Penetration Design

DOWSIL™ FIRESTOP 700 Sealant has been developed for use in small penetration seal applications where it should be used in conjunction with specified backing material. DOWSIL™ FIRESTOP 700 Sealant can also be used in conjunction with other Firestop products such as DOWSIL™ FIRESTOP 800 Self Leveling Silicone. Please consult the relevant data sheets for further information.

For larger penetrations, DOWSIL™ 3-6548 RTV Silicone Foam should be used.

Attainment of specific fire ratings is dependent on the joint configuration. Detailed information is given in the Fire rating Tables 3 and 4.

Table 3: Fire rating test report J82973/2

Penetration size			Services	Penetration design	Insulating	Integrity
150 mm	x	150 mm	100 mm O steel pipe	10 mm FS 700 + 75 mm mineral wool	1 hour	4 hours
150 mm	x	150 mm	25 mm O steel pipe	10 mm FS 700 + 75 mm mineral wool	2.5 hours	4 hours
150 mm	x	150 mm	25 mm O cable	20 mm FS 700 + 25 mm mineral wool	1 hour	2 hours
150 mm	x	150 mm	25 mm O steel pipe	20 mm FS 700 + 75 mm mineral wool	4 hours	4 hours
150 mm	x	150 mm	1x25 mm cable, 4x12.5 mm	10 mm FS 700 + 75 mm mineral wool	1.5 hours	4 hours
150 mm	x	150 mm	1x25 mm cable, 4x12.5 mm	20 mm FS 700 + 75 mm mineral wool	4 hours	4 hours
150 mm	x	150 mm	None	10 mm FS 700 + 75 mm mineral wool	1.5 hours	4 hours
150 mm	x	150 mm	None	20 mm FS 700 + 50 mm mineral wool	1.5 hours	4 hours
50 mm	O		25 mm cable	20 mm FS 700 + 25 mm mineral wool	4 hours	4 hours
50 mm	O		None	20 mm FS 700 + 25 mm mineral wool	4 hours	4 hours

Table 4: Fire rating test report 86K40074B

Substrate	Penetration size	Penetrant	DOWSIL™ FIRESTOP 700 Sealant depth	Backing material	DOWSIL™ FIRESTOP 700 Sealant position	Fire rating
Gypsum board lightweight wall	Sleeve 160 mm O, galvanized steel 0.8 mm thick	Two cables EKKJ 3x10x10 mm ² 1KV Cu Core	12 mm	114 mm CF	NFS	60 minutes
Gypsum board lightweight wall	Sleeve 160 mm O, galvanized steel 0.8 mm thick	Two cables EKKJ 3x10x10 mm ² 1KV Cu Core	2x12 mm	102 mm CF	FS + NFS	60 minutes
Gypsum board lightweight wall	450 mm O, galvanized steel 0.8 mm thick	Ventilation Duct 400 mm O	2x12 mm	98 mm CF	FS + NFS	60 minutes
Gypsum board lightweight wall	300 mm wide joint	None	12 mm	110 mm	FS + NFS	60 minutes
Concrete floor	400x400 mm	48.3 mm O Mild steel pip 2.6 mm thick	12 mm	138 mm CF	NFS	60 minutes

Legend

FS: Fireside of test furnace.

NFS: Non-fireside of test furnace.

CF: Ceramic fiber, aluminum silicate blanket of 128 kg/m³ nominal density.

MW: Mineral wool of 100 kg/m³ nominal density.

PE: Closed-cell polyethylene foam of 35 kg/m³ nominal density.

O: Outside diameter.

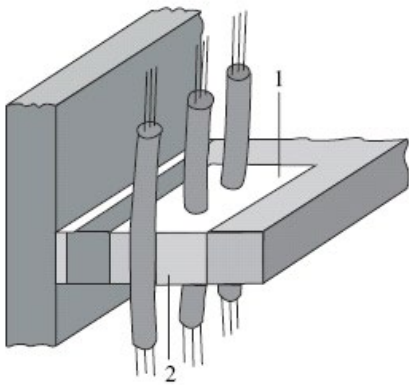


Figure 2: Typical service penetration. Cable penetration.

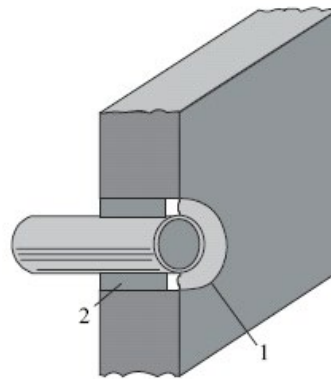


Figure 3: Pipe penetration.

Legend

- 1. DOWSIL™ FIRESTOP 700 Sealant
- 2. Backing material

**Handling
Precautions**

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

**Usable Life and
Storage**

When stored in cool, dry conditions below 30°C in the original unopened containers DOWSIL™ FIRESTOP 700 Sealant has a usable life of 12 months from the date of production.

**Packaging
Information**

DOWSIL™ FIRESTOP 700 Sealant is available in 310 ml cartridges packed in boxes of 12 and 20 liter pails.

Limitations

DOWSIL™ FIRESTOP 700 Sealant should not be used against substrates that bleed oils, plasticizers or solvent. Consult the technical service department for further advice in specific applications.

DOWSIL™ FIRESTOP 700 Sealant is not intended for use as the structural seal in any application.

DOWSIL™ FIRESTOP 700 Sealant is not intended to be commercialized in the United States.

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

**Health and
Environmental
Information**

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.

**Disposal
Considerations**

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

**Product
Stewardship**

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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