



DOWSIL™ 3-6548 RTV Silicone Foam

Two-part silicone rubber foam

Features & Benefits

- A fire rating of up to 4 hours can be achieved
- Approved by Lloyds Register
- Prevents smoke and gas penetration through the seal
- Forms to complex, irregular shapes
- Blank penetrations can be filled for future cable installations
- Long life service
- Resistant to ozone, ultra-violet radiation and temperature extremes

Applications

- For sealing of fire rated penetrations containing pipes, cable or ductwork.

Typical Properties

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

Property	Unit	Result
As supplied		
Physical form		Flowable liquid
Color and consistency		Dark gray elastomeric foam
Snap time	minutes	1.5
Density	kg/m ³	300
Cell structure, closed cell	%	> 50
Tensile strength	MPa	0.23
Compression deflection		
40% compression	MPa	0.07
60% compression	MPa	0.15
Thermal conductivity	W/(m.K)	7.5x10 ⁻²
K factor, 270 kg/m ³ foam	W/(m.K)	7.8x10 ⁻²
Linear coefficient of thermal expansion (25°C to 150°C/13°F to 302°F)	1/°C	3.2x10 ⁻⁴
	1/°F	1.8x10 ⁻⁴
Volume coefficient of thermal expansion (25°C to 150°C/13°F to 302°F)	1/°C	9.26x10 ⁻⁴
	1/°F	5.1x10 ⁻⁴
Limiting oxygen index	% oxygen	35

Typical Properties (Cont.)

Property	Unit	Result
Dielectric strength	kV/mm	6.6
Dielectric constant at 100 Hz		1.95
Dissipation factor at 100 Hz		0.00505
Volume resistivity	ohm.cm	2.24x10 ¹⁵

Description

DOWSIL™ 3-6548 RTV Silicone Foam is a two-part silicone room temperature vulcanizing (RTV) foam that has been specially formulated to have fire resistant properties coupled with good flexibility under the most demanding conditions. It has been made to withstand high temperatures and to confine such hazards as smoke, fire and gases.

DOWSIL™ 3-6548 RTV Silicone Foam can also be used to seal buildings against damaging contaminants such as dirt, dust and water.

Technical Specifications and Standards

DOWSIL™ 3-6548 RTV Silicone Foam has been tested according to the following standards:

- BS 476 Part 22, 3 hour fire rating (SGS Test report FT/10492.1/MAW/94)
- BS 476 Part 22, 4 hour fire rating (Yarsley Test Report J82973/2)
- IMO-A517 (XIII) H0, H60, H120 ratings (Lloyds Register Certificate Numbers SVG/F93/468 and SVG/F93/469)
- IMO-A517 (XIII) A0, A15, A60 ratings (Lloyds Register Certificate Number SVG/F93/470)
- 148 kN/m² Blast resistance (BRE Test Report Number TCR 53/91)

Fire Ratings

Fire test data is available showing that DOWSIL™ 3-6548 RTV Silicone Foam can achieve up to a 4 hour fire rating at specified joint and penetration configurations. Fire rating Table 2 on page 6 shows the UK Test Reports held by DOWSIL™ 3-6548 RTV Silicone Foam.

Substrate Preparation

Cleaning

Ensure that all materials are compatible with DOWSIL™ 3-6548 RTV Silicone Foam. 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. Surfaces should be cleaned and degreased by wiping with a suitable solvent such as DOWSIL™ R-40 Universal Cleaner, on an oil- and lint-free cloth.

For further advice on cleaning specific substrates, please contact Dow's Technical Services Department.

Note: When using any cleaning 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.

It is recommended that DOWSIL™ 3-6548 RTV Silicone Foam is not applied to surfaces that are below 5°C (41°F) as it is impossible to guarantee a dry, frost free surface at these temperatures. Optimum temperature for application of the foam is 13°C (55°F) to 27°C (81°F).

Substrate Preparation (Cont.)

Adhesion

DOWSIL™ 3-6548 RTV Silicone Foam seals by compression rather than adhesion. However, if adhesion is required in a particular application, primers can be used. In these instances, contact technical support for further advice.

Damming Method

Damming materials are required to contain the liquid foam while it expands and cures. These may be formed from combustible or noncombustible materials. Combustible damming materials should be removed as soon as the foam is completely cured. Non-combustible damming materials may be used as an integral part of the fire seal, but materials used in this way must be as specified in the relevant fire test report.

Damming Procedures

- a) For the purpose of damming a penetration where the damming material is an integral part of the fire seal, aluminum silicate board, or other suitably approved material, can be used.
- b) The damming material should be cut so as to form a tight fit in the opening and around the penetration items. Any gaps should be plugged with, for example, ceramic fiber, to ensure that the foam is contained within the seal cavity.
- c) The damming material may be cut into two or more pieces to ensure ease of application and, if necessary, easy removal.
- d) In a wall or bulkhead situation, damming materials are required on both sides of the opening. In a floor or deck seal, damming material may only be required at the lower face of the seal.
- e) It is important to note DOWSIL™ 3-6548 RTV Silicone Foam exerts considerable pressure as it cures and expands. It may therefore be necessary to use additional supports to prevent deformation and damage of the damming material.

Quality Control

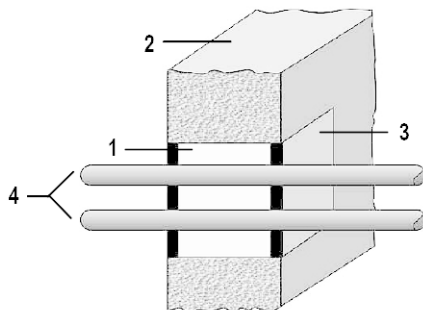
The following four point check should be performed at the start of each day's work, and on changing to new drums of foam.

Table 1: Four step quality control requirements for checking DOWSIL™ 3-6548 RTV Silicone Foam and dispensing equipment.

1.	Snap time	min.	1–3
2.	Free foam density	kg/m ³	220–320
3.	Color chart comparison		Pass
4.	Cell structure chart comparison		Pass

Approved applicators have quality control systems that follow these recommendations.

Typical Foam Installation



Legend

1. DOWSIL™ 3-6548 RTV Silicone Foam
2. Fire rated wall
3. Fire rated damming boards
4. Penetrating items

Clean-up

Excess foam should be cleaned off tools and non-porous surfaces while in an uncured state and using a suitable solvent.

Repair Procedures

Repair and modifications can easily be performed by using DOWSIL™ 3-6548 RTV Silicone Foam or any suitable fire stopping material. If necessary, the foam can be cut with a sharp knife to enable modification of the seal.

Protection of Penetration Seal

If the damming material is to be resistant to water, contact us for a recommendation of an appropriate water resistant material. SYLGARD™ 170 Silicone Elastomer may be used to give additional protection against mechanical abrasion. If protection against oil or solvents is required, DOWSIL™ 730 FS Solvent Resistant Sealant may be used.

Handling Precautions

Due to the evolution of hydrogen gas during foaming and curing, appropriate caution should be exercised. DOWSIL™ 3-6548 RTV Silicone Foam must be mixed and applied away from sparks or open flame. Special forced-air ventilation should be provided if areas of installation have less than 110 liters of free air space per 1 kg or liquid mixture being foamed.

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 at or below 32°C (90°F) in the original unopened containers, DOWSIL™ 3-6548 RTV Silicone Foam has a usable life of 24 months from the date of production for the 40 kg and 900 lb packaging sizes and 12 months for the 310 ml and 600 ml cartridges.

Optimum temperature for application of the foam is 13°C (55°F) to 27°C (81°F) and if possible the foam should be stored at this temperature. On storage, some settling of the contents may occur and the individual components will need to be thoroughly stirred so that an even consistency is obtained before use.

Note: A separate stirring device should be used for each component to avoid cross-contamination.

Packaging Information

DOWSIL™ 3-6548 RTV Silicone Foam is available in 310 ml and 600 ml easy to use cartridges for smaller applications, 40 kg and 900 lb kits for larger applications, in black and gray.

Limitations

Inhibition of Cure

Certain materials, chemicals, curing agents and plasticizers can inhibit the cure of DOWSIL™ 3-6548 RTV Silicone Foam. Most notable of those are:

- Organo-tin and other organo-metallic compounds
- Silicone rubber containing organotin catalyst
- Sulfur, polysulfides, polysulfones and other sulfur-containing materials
- Amines, urethanes and amine containing materials
- Unsaturated hydrocarbon plasticizers, moisture

If in doubt, run a small-scale compatibility test.

The presence of liquid or uncured product at the interface between the questionable substrate and the cured DOWSIL™ 3-6548 RTV Silicone Foam would normally indicate incompatibility and inhibition of cure.

DOWSIL™ 3-6548 RTV Silicone Foam 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.

Table 2: Fire Rating

Test Report	Test Standard	Penetrating Items	Fire Rating	
YARSLEY	J82973/2	BS 476 Part 22	None	4 hours
BRE	TCR 53/91	148 KN/m ² Blast Test	Multiple steel pipes	See below
LPC	04410/SW/MB TE 91471	FRS 14-84	Multiple steel pipes	2 hours following blast test
WFRC	WARRES 59652	IMO-A517 (XIII)	Multiple steel pipes	2 hours
WFRC	WARRES 596523	IMO-A517 (XIII)	Single steel pipe	2 hours
LLOYDS	SVC/F93/468	IMO-A517 (XIII)	Steel pipes	H0, H60, H120
LLOYDS	SVC/F93/469	IMO-A517 (XIII)	Cable trays	A0, A15, A60
LLOYDS	SVC/F93/470	IMO-A517 (XIII)	Steel pipes	A0, A15, A60
SGS	FT/10492.1/MAN/94	BS 475 Part 22	100 mm Ø, steel pipe, cable tray	3 hours

- Note: To achieve the correct fire rating, the penetration seal must be correctly designed. Full details of the penetration tested to the above standards are included in the individual reports and attention should be paid to the requirements for insulation materials on the penetrating items.
- In addition, a large amount of information is available from Dow, including fire testing to Underwriters Laboratories (UL) standards.
- For further information regarding the fire performance of DOWSIL™ 3-6548 RTV Silicone Foam, including the design of penetration seals, please contact the Technical Services Department.

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