

Product Information
High
Performance
Building

DOW CORNING

Dow Corning® 3-6548 Silicone
RTV Foam

FEATURES & BENEFITS

- Room-temperature cure
- Reversion resistance
- Noncorrosive
- Fire resistance

COMPOSITION

- Medium-density, two-component silicone

Silicone RTV foam for fire-resistant penetration seals

APPLICATIONS

Dow Corning® 3-6548 Silicone RTV Foam is formulated to have fire resistance properties and can be used for preparing fire-resistant penetration seals as evidenced by the results of fire endurance testing as defined in ASTM E 814 “Standard Method of Fire Test for Through-Penetration Firestops”.

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

Test*	Property	Unit	Result
As Supplied – Physical, Part A			
~CTM 0176	Appearance		Black liquid
~CTM 0097	Specific Gravity at 25°C (77°F)		1.05–1.11
~CTM 0050	Viscosity, Brookfield Model HAF spindle No. 3 at 10 rpm	poise	40–60
†CTM 0052	Flash Point	°C (°F)	> 243 (> 470)
†CTM 0052	Fire Point	°C (°F)	> 344 (> 650)
As Supplied – Physical, Part B			
~CTM 0176	Appearance		Off-white liquid
~CTM 0097	Specific Gravity at 25°C (77°F)		1.05–1.11
~CTM 0050	Viscosity, Brookfield Model HAF spindle No. 3 at 10 rpm	poise	50–75
†CTM 0006	Flash Point	°C (°F)	> 133 (> 271)
†CTM 0006	Fire Point	°C (°F)	> 199 (> 390)
As Cured – Physical¹			
†CTM 0176	Appearance		Dark gray-black elastomeric film
~CTM 092A	Snap Time ²	percent	1–2

*CTM: Corporate Test Method, copies of CTM’s are available on request.

ASTM: American Society for Testing and Materials

~Sales specifications: Dow Corning performs acceptance testing on lot of material and certifies that this product will meet the above specification requirements for 12 months from date of shipment when properly stored in the original, unopened container.

†Other: Testing on what we believe to be a representative lot of material. Testing is not done on a lot-by-lot basis. If property is critical for your application, you should test on a lot-by-lot basis prior to use.

Note: Some properties will vary depending on the cured density of the foam.

¹One part A thoroughly mixed with one part B and cured at 25°C (77°F) for 24 hours.

²Time to nonpour condition. Also, time to begin foam rise.

DESCRIPTION

Dow Corning® 3-6548 Silicone RTV Foam is a medium-density, two-part product supplied as A and B liquid components. The A component is black and the B component is off-white for easy identification and inspection of mix. When the A and B components are thoroughly mixed in a 1:1 ratio by either weight or volume, the product will expand and cure to a foamed elastomer at room temperature. A mild exotherm is exhibited during the curing reaction.

Note: Various silicone foams have different fire resistance properties. The use of the generic term “silicone foam” should be avoided when referencing this product or this data. This test data pertains to this product by its specific name and number designation (*Dow Corning 3-6548 Silicone RTV Foam*).

APPROVALS/ SPECIFICATIONS

- Listed in UL’s Fire Resistance Directory for use in Through-Penetration Firestop Systems

HOW TO USE

Preparatory Work

The penetration opening and all related surfaces must be clean of dirt, dust and loose impediments. Surfaces must also be free of water, oil or other free liquids.

Damming the Penetration

Damming the penetration is required to prevent the liquid foam mixture from running out before it foams. Damming materials may also contribute to the fire resistant properties of particular system configurations. Check system design to ensure that proper damming materials and techniques are used.

TYPICAL PROPERTIES (Continued)

Test	Property	Unit	Result
~CTM 0812	Density ³	g/cm ³ (lb/ft ³)	0.22–0.32 (14–20)
†CTM 0826	Cell Structure ⁴ , closed cell	percent	50
†ASTM D 3574	Tensile Strength	N/m ² (psi)	2.28 x 10 ⁵ (33.0)
†CTM 0525 Compression Deflection			
	at 20% compression	N/m ² (psi)	3.59 x 10 ⁴ (5.2)
	at 40% compression	N/m ² (psi)	6.96 x 10 ⁴ (10.1)
	at 60% compression	N/m ² (psi)	1.46 x 10 ⁵ (21.2)
†CTM 069	Thermal Conductivity ⁵	cal/sec cm·°C	9.8 x 10 ⁻⁴
†ASTM C 518	k ⁶ , 0.27 g/cm ² (17 lb/ft ²) foam	W/(m·K) (BTU/hr·ft·°F)	0.1338 (0.0773)
†CTM 0585 Linear Coefficient of Thermal Expansion,			
	-25 to 150°C (-13 to 302°F)	cm/cm·°C (in/in·°F)	3.2 x 10 ⁻⁴ (1.78 x 10 ⁻⁴)
As Cured – Flammability⁷			
†CTM 0316A Flammability, vertical burn			
	Time in Flame	seconds	15 60
	Average Time Flame-Glow Out	seconds	7.2 15.6
	Average Weight Loss	percent	1.3 13.5
†CTM 0780	Limiting Oxygen Index	LOI rating	39
†ASTM E 84-79A	Flame Spread Rating ⁸		6.7
As Cured – Electrical⁹			
†CTM 0114	Dielectric Strength	volts/mil	165
†CTM 0112	Dielectric Constant, 100 Hz		1.95
†CTM 0112	Dissipation Factor, 100 Hz		0.00505
†CTM 0249	Volume Resistivity	ohm-cm	2.24 x 10 ¹⁵

³Power mixed for 30 seconds and cured in nonconfined condition.

⁴Breathability method

⁵Cenco Fitch method

⁶Cured foam sample thickness of 2.54 cm (1 inch).

⁷Tests, claims, representations and descriptions regarding flammability are based on standard small-scale laboratory tests. Such tests may not be reliable for determining, evaluating, predicting or describing the flammability or burning characteristics of the product under actual fire conditions, whether the product is used alone or in combination with other products.

⁸Test report available upon request.

⁹Cured foam sample thickness of 0.317 cm (0.125 inch).

Caution: When components A and B of *Dow Corning* 3-6548 Silicone RTV Foam are mixed, the foam generates hydrogen gas during cure. Forced air ventilation is necessary if the work area has less than two cubic feet of free air space for each pound of liquid mixture being foamed.

Additional information is provided in the section entitled “Handling Precautions”.

Mixing the Components

Prior to use, Part A and Part B components must be thoroughly stirred in their original containers to uniformly disperse any fillers or pigments that may have settled. When mixing, use clean containers and mixing equipment. If stirred containers stand for more than four hours, re-stir.

At time of installation, material temperature should be between 18 and 27°C (65 and 81°F).

(Materials can be warmed by placing them in a room at these temperatures for 12 hours.) Please check material temperature prior to use if there is a possibility it is outside this range.

To properly catalyze *Dow Corning* 3-6548 Silicone RTV Foam, add Part A to Part B in a 1:1 ratio (by weight or volume). Mix vigorously and thoroughly for 30 to 60 seconds by hand or with power mixing. The mixed product will begin to foam shortly after mixing; therefore, it should be dispensed in the penetration as soon as mixing is completed. For large-volume applications, the use of suitable automatic mixing, metering and dispensing equipment is recommended. A list of equipment manufacturers is available from Dow Corning.

The type and degree of mixing can significantly affect the cell structure and density of the final foam product. Mixing with a

198-g (7-oz) Semco® cartridge will generally result in a slightly higher density than mixing by hand. Hand mixing, in turn, will result in a higher density than power mixing by automatic mixing, metering and dispensing equipment.

Likewise, the expansion ratios of foam volume to liquid volume can vary from 2:1 to 4:1, depending on the type and degree of mixing and degree of confinement. If foam rise is restricted or confined during foam cure, densities as high as 0.48 g/cm³ (30 lb/ft³) can result.

Working Time

As supplied and properly mixed, *Dow Corning* 3-6548 Silicone RTV Foam has a snap time (working time) of one to two minutes at 25°C (77°F). The snap time is dependent upon the temperature of the A and B components just before and after they are mixed.

Installation

Dow Corning 3-6548 Silicone RTV Foam typically expands from two to four times its liquid volume during cure. *Dow Corning* 3-6548 Silicone RTV Foam should not be dispensed in liquid layers thicker than 2.54 cm (1 inch) at any given spot. Allow at least 15 minutes between applications of each foam layer. If the opening is not filled to the desirable level when the cured foam has completed its expansion, repeat the injection and cure procedure until the desired fill rate is attained.

To permit a clear view when filling a wall cavity, damming materials are built up gradually. The top of the opening is dammed for the final shot

of foam.

After the foam is installed, damming materials are left in place 24 hours to allow the penetration seal to cure fully.

Inspection

After 24 hours, the penetration seal must be completely inspected by removing the damming materials. Curing foam should completely fill the penetration, providing a tight, compressive fit. The seal should then be reinspected after an additional 24 hours. Damming materials that are part of a specific system design must be replaced and properly secured in their appropriate positions.

Quality Control

Dow Corning has a two-step quality control check that can be performed on the site quickly and easily. It should be performed at least once daily and upon changing to a new lot of material to ensure the performance of both dispensing equipment and foam product prior to installing least once daily and upon changing to a new lot of material to ensure the performance easily. It should be performed at least once daily and upon changing to a new lot of material to ensure the performance of both dispensing equipment and foam product prior to installing penetration seals. (The quality control check is shown in Table 1.)

Follow the equipment manufacturer’s instructions for maintaining product component ratios.

Table 1: Quality Control Requirements for Checking *Dow Corning* 3-6548 Silicone RTV Foam and Dispensing Equipment

Test	Unit	Result
Snap Time ¹	minutes	1–2
Free Foam Density ¹	g/cm (lb/ft ³)	0.22–0.32 (14–20)

¹Standard procedures for measuring snap time and free foam density are available from Dow Corning. Totally unconfined, density values as low as 0.22 g/cm³ (14 lb/ft³) may be obtained. Values shown are typical for field installation.

Cleanup

Excess cured foam around the penetration seal can be removed with a sharp knife or blade. Spills of Part A and Part B liquid components can be removed with high-flash-point mineral spirit solvent.

Caution: Consult solvent material data sheet for safe handling information. Follow state, federal and local environmental regulations.

Repairability

Once cured in place, *Dow Corning 3-6548 Silicone RTV Foam* can be removed, repaired or changed, and the repaired area reformed in place with additional product. Because this product develops good adhesion to itself, the repaired region will become an integral part of the original foam.

Adhesion

Maximum adhesion is obtained when foaming against a freshly exposed foam surface, free of dust, dirt, moisture and other contaminants.

HANDLING PRECAUTIONS

Immediately upon mixing the A and B components of *Dow Corning 3-6548 Silicone RTV Foam*, a chemical reaction takes place that results in the generation of hydrogen gas. Appropriate caution should be exercised. Keep away from sparks and open flame.

When using *Dow Corning 3-6548 Silicone RTV Foam* to seal large penetration openings, exercise care to avoid gas entrapment. Provide adequate ventilation to prevent hydrogen gas build-up. Forced air ventilation is necessary if the work area has less than two cubic feet of free air space for each pound of liquid mixture being foamed. Adequate ventilation must be provided to prevent build-up of hydrogen at explosive levels.

While the gas generation is essentially completed during the first three minutes after the A and B components are mixed, hydrogen gas will continue to be released from the foam for at least 24 hours. Most of the evolved gas is initially retained in each foam cell and is not immediately released to the surrounding atmosphere, because the foam is 50 percent closed cell. The gas is released over time by diffusion. The rate of release is dependent on penetration sizes, sealing designs and ambient temperatures. The amount of gas generated is dependent on the amount of foam used.

Waste materials must be considered with regard to these precautionary measures during disposal and storage. Waste materials should not be sealed in such things as plastic bags or similar containers that could trap hydrogen gas.

The liquid Part B components of *Dow Corning 3-6548 Silicone RTV Foam* in contact with bases or catalytic oxidizing materials could generate hydrogen gas. A bulged Part B component container may indicate hydrogen gas pressurization, and appropriate caution should be exercised. If this occurs, contact your *Dow Corning* representative.

**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 CORNING WEBSITE
AT DOWCORNING.COM, OR
FROM YOUR DOW CORNING
SALES APPLICATION
ENGINEER, OR DISTRIBUTOR,
OR BY CALLING
DOW CORNING CUSTOMER
SERVICE.**

USABLE LIFE AND STORAGE

The Part A and Part B components of *Dow Corning 3-6548 Silicone RTV Foam* are delivered in separate containers. When stored in unopened containers at or below 32°C (90°F), *Dow Corning 3-6548 Silicone RTV Foam* has a shelf life of 12 months from date of shipment from *Dow Corning*. Refer to product packaging for "Use By" date.

Partially used containers should be sealed tightly and stored in a similar manner.

PACKAGING INFORMATION

Dow Corning 3-6548 Silicone RTV Foam is supplied in 198-g, 0.9-, 7.25-, 36.3- and 409-kg (7-oz, 2-, 16-, 80- and 900-lb) kits, net weight.

LIMITATIONS

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

Inhibition of Cure¹

Certain materials, chemicals, curing agents and plasticizers can inhibit the cure of *Dow Corning 3-6548 Silicone RTV Foam*. The most notable include:

- Organotin and other organometallic compounds
- Silicone rubber containing organotin catalyst
- Sulfur, polysulfides, polysulfones and other sulfur-containing materials
- Amines, urethanes and aminecontaining materials
- Unsaturated hydrocarbon plasticizers

¹If a substrate or material is questionable with regard to causing potential inhibition of cure, it is recommended that a small scale compatibility test be run to ascertain suitability in a given application. The presence of liquid or uncured product at the interface between the questionable substrate and the cured *Dow Corning 3-6548 Silicone RTV Foam* would indicate incompatibility and inhibition of cure. Please contact *Dow Corning* for more information.

Painting or Coating

Most coatings/paints do not adhere to this product. Contact Dow Corning prior to painting or coating.

DISPOSAL INFORMATION

Please review and analyze the appropriate disposal requirements (local, state and federal) for waste streams, used product, etc. Should you have specific questions about the waste characteristics of this Dow Corning product, contact your Dow Corning representative.

SHIPPING LIMITATIONS

Dow Corning 3-6548 Silicone RTV Foam Part B cannot be shipped by air.

HEALTH AND ENVIRONMENTAL INFORMATION

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

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

LIMITED WARRANTY INFORMATION – PLEASE READ CAREFULLY

Some of the information and data provided herein are based on testing of specific designs at independent test laboratories per ASTM E 814/UL 1479 “Method of Fire Tests of Through-Penetration Firestops” and some are based on testing at Dow Corning per Dow Corning corporate test methods. Test conditions may not be representative of actual fire conditions. Variation from tested designs can also alter system performance. For these reasons, it is the user’s responsibility to determine that the designs used are suitable for the application and will provide the level of protection required. Because application of the products, conditions of their use, and the intensity and duration of actual fires are beyond any manufacturer’s control, Dow Corning shall not be held liable for damages, direct or consequential, resulting from the use of its products or tested designs.

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer’s tests to ensure that our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning’s sole warranty is that our products will meet the sales specifications in effect at the time of shipment.

Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DOW CORNING SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY.

DOW CORNING DISCLAIMS LIABILITY FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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