Technical Data Sheet

DOWSIL™ 790 Silicone Building Sealant

Ultra-low-modulus sealant for sensitive natural stone, porous stone, masonry and concrete façades

Features & Benefits

- Low-staining and plasticizer free, suitable for porous substrates
- Excellent performance even in building joints that experience extreme movement
- Extension/compression capability of +100/-50 percent
- Conforms to ISO 11600F-25LM
- Excellent weathering properties and resistance to sunlight, rain, snow, and temperature extremes
- Excellent unprimed adhesion to masonry, concrete and natural stone substrates
- Easy application over a wide temperature range

Composition

- One-part, neutral-cure silicone sealant

Applications

- Sealing of joints between natural stone
- Sealing of curtainwall joints and mullion joints
- Sealing of expansion and control joints
- Sealing of precast concrete panel joints and many other construction joints

Typical Properties

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

Test	Property	Unit	Result
	As Supplied		
CTM[1] 98	Skin-over Time (23°C, 50% R.H.)	min	9
CTM 95	Tack-Free Time (23°C, 50% R.H.)	min	31
CTM 663	Cure Rate (23°C, 50% R.H.) 1 Day 3 Days	 mm mm	 2.8 5.8
	As Cured – After 28 Days at 23°C and 50% RH		
CTM 99	Durometer Hardness, Shore A		11
ISO[2] 8339	Modulus 100%	MPa	0.08
ISO 8339	Elongation at Break	%	840

1. CTMs: Corporate Test Methods. Copies of CTMs are available upon request.
2. ISO: International Standardization Organization

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Typical Properties (Cont.)

Test	Property	Unit	Result
ISO 7389	Elastic Recovery	%	78
ASTM[3] C 719	Joint Movement Capabilities According to ASTM Standard Extension/Compression	%	+100/-50
ISO 9047	Joint Movement Capability According to ISO Standard	%	±25 (highest category)
ASTM C 1248	Staining, Various Substrates		None

3. ASTM: American Society for Testing and Materials.

Description

Ultra-low-modulus sealant for masonry, concrete and natural stone façades. DOWSIL™ 790 Silicone Building Sealant provides excellent performance, even in building joints that experience extreme movement. It places a low stress on the sealant/substrate bond line to minimize failures in moving joints.

DOWSIL™ 790 Silicone Building Sealant is available in black and gray.

Approvals/ Specifications

This sealant meets or exceeds the requirements of:

- ISO 11600F 25LM
- EN15651 – CE MARK
- ASTM Specification C 920, Type S, Grade NS, Class 100/50, Use T, NT, M, G, A, and O

How to Use

Surface Preparation
Ensure that surfaces to be sealed are clean, dry, sound and grease-free. Porous substrates such as concrete, brickwork, mortar, etc. must be mechanically cleaned of loose particles using a steel brush, sanding disc or any similar means. Clean non-porous surface with DOWSIL™ R-40 Universal Cleaner, dry thoroughly with a clean, lint-free cloth and wait for at least half an hour before application of sealant.

Note: When using any solvent, always provide adequate ventilation. Avoid heat, sparks and open flames. Use solvent resistant gloves. Observe and follow all precautions listed on solvent container label.

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.

Priming
Primers are not usually required on stone, concrete and masonry substrates. On non-porous substrates such as anodized aluminum, priming might be needed. It is recommended to carry out test on such substrates to assess the need for priming. A suitable primer on non-porous substrates is DOWSIL™ 1200 OS Primer. Allow at least half an hour between priming and sealant application. Please contact Dow's technical service in case of doubt.

How to Use (Cont.)

Back-up Materials
Where back-up material is required, open cell backer rod is recommended. Back-up materials provide back pressure and avoid three sided adhesion that limits sealant movement capability.

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
If sealant is misapplied to porous substrates, it should be left until it is just cured and then removed by peeling, cutting or other mechanical means. Care should be taken not to damage plastic or coated surfaces.

Joint Design

The sealant joint width should be designed to accommodate the movement capability of the sealant. When designing joints using DOWSIL™ 790 Silicone Building Sealant, the minimum width should be 6 mm. For joints between 6–12 mm wide, a seal depth of 6 mm is required. For joints above 12 mm wide, a width to depth ratio of 2:1 should be used. As the sealant joint width becomes larger than 25 mm, the depth should be held at approximately 9 mm to 12 mm. In situations where fillet joints are needed, a minimum of 6 mm sealant bite to each substrate is recommended. For joint dimensions with a width greater than 25 mm or a depth greater than 15 mm, please contact your regional service centers for technical assistance.

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 at or below 32°C, DOWSIL™ 790 Silicone Building Sealant has a shelf life of 12 months from date of manufacture. Refer to product packaging for “Use By” date.

Limitations

DOWSIL™ 790 Silicone Building Sealant should not be applied:

- In structural applications.
- Below grade or to materials that outgas, which can cause bubbling in curing sealant.
- On brass or copper or other similar material that can be corroded.
- To surfaces that are continuously immersed in water.
- For use as an interior penetration firestop sealing system.
- To building materials that bleed oils, plasticizers, or solvents – materials such as impregnated wood, oil based caulks, green or partially vulcanized rubber gaskets, or tapes or bituminous below-grade waterproofing and asphalt-impregnated fiberboard.
- In totally confined spaces because the sealant requires atmospheric moisture for cure.
- To surfaces that will be painted after application. The paint film will not stretch with the extension of the sealant and may crack and peel and most likely will not adhere to the sealant.
- To surfaces in direct or indirect contact with food.

Limitations (Cont.)

- To wet or frost-laden surfaces.
- In applications where solvents or primers are not fully dried prior to sealant application. Uncured sealant is very sensitive to many solvents, primers, and cleaning agents; these may cause the sealant to remain uncured or tacky.

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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