



DOWSIL™ 791 Silicone Weatherproofing Sealant

Description

Neutral cure, one-part, silicone weatherproofing sealant

Sustainability Attribute:

This datasheet is especially for DOWSIL™ 791 Silicone Weatherproofing Sealant, which is produced in China.



Uses / Applications

- DOWSIL™ 791 Silicone Weatherproofing Sealant is a one-part, neutral curing construction sealant which can provide a long-term, elastic, water-proof rubber seal design for normal building facade and glazing applications.

Benefits

- Ease of application. Ready to use as supplied; one-part, moisture cure, no need for mixing.
- Weatherability; offers resistance to sunlight, rainwater, snow, ozone and extreme temperatures.
- Durability; the cured sealant can maintain its elasticity in temperatures of -50°C to 150°C without hardening, cracking or degrading.
- Reasonable operation time; allows operators greater control of application and tooling time.
- No slumping; can be used for the sealing of vertical and wide joints.
- Suitable for weatherproofing applications such as glass, aluminum extrusion and composite panels.
- Cures to a durable, flexible, elastic silicone rubber seal.

Typical Properties

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

Test ¹	Property	Unit	Result
Uncured – As Tested at 50% RH and 23°C (73°F)			
ASTM C639	Flow (Sag or Slump)	inches (mm)	0
	Working Time	minutes	20
ASTM C679	Tack-free Time, 77°F, 50% RH	minutes	45–50
	Specific Gravity	g/cm ³	1.45

1. ASTM: American Society for Testing and Materials.

Typical Properties (Cont.)

Test	Property	Unit	Result
As Cured – After 21 Days at 50% RH and 25°C (77°F)			
ASTM C661	Durometer Hardness, Shore A	points	25–30
ASTM C794	Peel Strength	lb/in (kg/cm)	30 (5.4)
ASTM D624	Tear Strength Die B	KN/m	6.8
ASTM C719	Joint Movement Capability	%	±50
ASTM C1135	Tensile Adhesion Strength		
	At 100% Extension	psi (MPa)	58 (0.40)
	Elongation at Break	%	420
	Ultimate Tensile Strength	psi (MPa)	120 (0.83)

Design of Weatherproof Joint

Proper joint design can reduce the stress on the sealant and help obtain optimal sealant movement capability, improve the ease of application, reduce cohesive failure, and minimize the effects of curing byproducts.

Design guidelines:

1. Minimum joint width: 6 mm
2. Minimum joint depth: 6 mm
3. For larger joints, the width of the joint shall be larger than the depth of sealant.
4. To avoid 3-sided adhesion, backer rod or non-adhesion tape should be used at the bottom of the joint to ensure that the sealant is only adhering to the edge of the joint and to ensure flexible movement in the joint.

How to Use

Surface Cleaning

The surface of the substrate should be sufficiently clean, dry, flat and free of foreign matter. Completely remove any existing sealant.

For non-porous surfaces such as glass and coated aluminum extrusion, remove any grease, oil or dust using a clean cotton cloth and a solvent such as ketone, ethyl carbinol or 75% alcohol. With a dry cloth, remove any residual solvent or dust.

For the selection of solvent, please refer to the Dow adhesion test report.

Use of Primer

Consult the Dow adhesion test report to determine if the use of a Dow primer is recommended. The Dow adhesion test report can be requested from the Dow.

Backing Material

At the bottom of the joint, use backer rod (e.g. closed-cell type polyethylene or open-cell polyurethane foams) or equivalent material (e.g. low-viscosity polyethylene tape) to control the depth of sealant. Avoid 3-sided adhesion by preventing the sealant from adhering to the bottom of the joint.

How to Use (Cont.)

Masking and Tooling

Masking tape can be used in the area adjacent to the joint to ensure a neat sealant line, preventing the surrounding surplus sealant from contaminating the substrate surface.

- Tool the joint surface as soon as the sealant is applied, keeping the surface smooth and flat, and ensuring that the edge of the joint is full of sealant.
- Complete the tooling before the sealant skin forms (e.g. in working time). Convex-surface tools are recommended for tooling to allow the joint to remain full of sealant. Tooling must be performed when sealing the horizontal joint to prevent any liquid (e.g. rainwater and cleaner) from staying on the sealant surface.
- Do not use soap or water as tooling assistants.
- After the tooling and before the sealant cures, remove masking tape.
- Do not touch the surface of the sealant within the 48 hours following its cure. Avoid sealant contact with cleaner or solvent (e.g. bleaching agent) during this period.
- When a flammable solvent is used, proper precautions should be applied. For porous material surfaces, allow the sealant to cure completely before removing the masking tape. Cured sealant can be removed with a knife.
- The sealant releases gas during curing; the odor disappears after it is cured. The completely cured sealant is harmless.

Sealant Filling

- Cut the nozzle at an angle of 45° depending on the shape and specification needed.
- Tighten the nozzle onto the sealant tube.
- Put the sealant tube into the cartridge gun. Use pneumatic or manual cartridge gun.
- Apply sealant to the bottom of the joint to fill the joint completely and to ensure adhesion to both sides of the joint. Do not apply the sealant simply on the surface as the sealant cannot fully fill the joint by gravity.

Approvals/ Specifications

Meets the requirements of:

- ASTM C920 Type S, Grade NS, Class 50, Use NT, M, G, A
- GB/T14683-2017
- EN15651-1/2:2012
- CNCA-CGP-13:2020 and CTC-TVe-OP03001 three stars, The Implementation Rules for Green Building Materials Product Classification Certification of Building sealants.
- CNCA-CGP-08:2021 The Implementation Rules for Green Building Materials Product Classification Certification



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 below 32°C in the original unopened containers, this product has a usable life of 12 months from the date of production.

Packaging Information

DOWSIL™ 791 Silicone Weatherproofing Sealant is available to customers in 590 ml foil sausage packages. Please contact your local Dow sales office to obtain the relevant information.

Limitations

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.

dow.com

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