Technical Data Sheet

DOWSIL™ SL Parking Structure Sealant

Ultra-low-modulus, self-leveling silicone sealant for parking structure applications

Features & Benefits

- Good weatherability
- Long-life reliability
- Ultra-low modulus
- High movement capability
- Resilient
- Ideal for maintenance crews
- Seals irregular surfaces
- Easy to use
- Unprimed adhesion
- All-temperature gunnability

Composition

- One-part, neutral-cure, RTV silicone sealant

Applications

- Parking structures, parking lots, sidewalks, loading/material transfer docks and pedestrian bridges and plazas
- New construction or as a remedial or repair sealant in existing construction
- Irregular surfaces benefiting from self-leveling characteristics for horizontal or slightly sloped joints (no more than 6 percent slope from horizontal)

Typical Properties

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

Test	Property	Unit	Result
	As Supplied		
	Color		Dark gray
	Flow, Sag or Slump		Self-leveling
	Skin-over Time at 25°C (77°F), Maximum	minutes	60
	Full Adhesion	days	14 – 21
	VOC Content[1]	g/L	30

1. Based on South Coast Air Quality Management District of California. Maximum VOC is listed both inclusive and exclusive of water and exempt compounds.

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Typical Properties (Cont.)

Test	Property	Unit	Result
	As Cured — After 21 days at 25°C (77°F) and 50 percent RH		
ASTM[2] D 2240	Durometer, Shore 00		50
ASTM D 412	Tensile	psi	42
ASTM D 412	Elongation	percent	1500
ASTM D 412	Modulus, at 150% Elongation	psi	15
ASTM C 1135	Modulus		
	at 25% Elongation	psi	7
	at 50% Elongation	psi	8
ASTM C 1135	Ultimate Elongation (Concrete)	percent	> 800
ASTM C 719	Movement Capability	percent	+100/-50

2. ASTM: American Society for Testing and Materials.

Description

DOWSIL™ SL Parking Structure Sealant is a one-part, cold-applied, self-leveling silicone material that cures to an ultra-low-modulus silicone rubber upon exposure to atmospheric moisture. The cured silicone rubber remains flexible over the entire temperature range expected in construction applications

Because of its ultra-low-modulus characteristics and good extension/ compression recovery (+100/-50 percent of original joint width), DOWSIL™ SL Parking Structure Sealant provides outstanding performance where joint movement occurs.

Features of DOWSIL™ SL Parking Structure Sealant include:

- Good weatherability — the sealant's 100 percent silicone rubber is virtually unaffected by sunlight, rain, snow, ozone or temperature extremes
- Long-life reliability — under normal conditions, cured sealant stays rubbery from -45 to 149°C (-49 to 300°F) without tearing, cracking or becoming brittle
- Ultra-low modulus — the sealant stretches 100 percent in the joint with very little force. This places minimal strain on the bond line or joint wall, maximizing the probability of a successful seal with continuous joint movement. Joint movements caused by temperature, traffic or shear require a sealant that does not strongly resist stress and/or shear
- High movement capability — the sealant will perform in a continuous joint movement of +100/-50 percent of original joint width
- Resilient — once cured, the sealant rejects stones and other debris, permitting unrestricted joint movement with temperature changes
- Ideal for maintenance crews — the one-part formulation will easily bond to damaged silicone sealant provided the damaged area is clean, dry and frost-free
- Seals irregular surfaces — the self-leveling characteristics make the sealant ideal for sealing irregular joint surfaces by providing adequate contact to the substrate without the need for tooling
- Easy to use — self-leveling (no tooling step required), one component, cold applied, ready-to-use as supplied; dispensed directly from cartridges or pails into the joint by hand or with an air-powered gun

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Description (Cont.)

- Unprimed adhesion — no primer is required for bonding to most concrete and asphalt surfaces. For optimum adhesion, the surface must be clean, dry and frost-free at the time of sealant application
- All-temperature gunnability — consistency and self-leveling characteristics are relatively unchanged over normal installation temperature range

Installation

Refer to the Parking Structure Installation Guide, Form No. 62-481, for further information on joint preparation and sealant application.

Joint Design

Low-modulus DOWSIL™ SL Parking Structure Sealant easily withstands extreme joint movement when properly applied. The sealant will withstand 100 percent extension and 50 percent compression of the original joint width; however, the recommended joint movement design is for ±25 percent and not at the sealant limits. This difference ensures a successful seal job when job site joint widths are different than the design widths.

A thin bead of silicone sealant will accommodate more movement than a thick bead. DOWSIL™ SL Parking Structure Sealant should be no thicker than 1/2 inch and no thinner than 1/4 inch at the crown of the backer rod. (See Table I and Figure 1.) For joints 1 inch or less in width, the sealant width to depth ratio should be 2:1. For joints greater than 1 inch in width, a 1/2-inch thickness at the crown of the backer rod should be maintained.

Table I: Estimating Requirements[1]

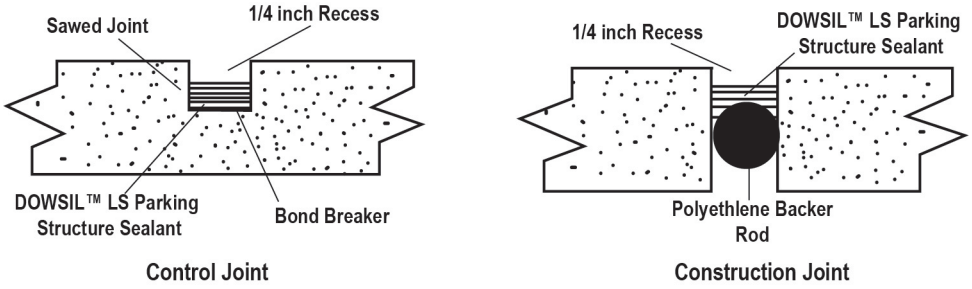
Thickness, inches	Linear Feet per Gallon of DOWSIL SL Parking Structure Sealant for Various Joint Sizes Width, inches					
	1/4	3/8	1/2	5/8	3/4	1
1/4	275	173	123			
3/8				8	60	45
1/2						35

[1]Installation yields (linear feet/gallon) are based on calculations for an exact sealant bead shape-factor. Actual yield will vary depending on deviation from calculated bead shape, tooling techniques, backer material placement, waste, and applicator experience.

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Installation (Cont.)



1. Joint width wide enough to accommodate movement.
2. Joint deep enough to allow for recess, sealant placement and backer rod/bond breaker.
3. Proper backer rod/bond breaker tape placement.
4. Sealant installed to proper depth and width.
5. Sealant recessed 1/4 inch to 3/8 inch below pavement surface.

Figure 1. Good Joint Designs

In all cases where sealant is placed in horizontal joints that will come in contact with vehicular or pedestrian traffic, the sealant should be recessed in the joint a minimum of 1/4 to 3/8 inch with a 1/2- to 5/8-inch recess recommended in wider joints (see Table II).

Table II: Recommendations for Sealant Placement in Joint

Joint Width[1], Inches	Recess, Inches
1/4 to 1	1/4–3/8
1–2	1/2–5/8

[1]Applies to horizontal joints where pedestrian or vehicular traffic is anticipated

Joint designers should consider the potential of heel penetration in pedestrian traffic areas, and in those areas, consider using a stiffer or higher density backer material.

Preparation

Clean all concrete, masonry and stone joints of all contaminants and impurities. Porous substrates should be cleaned where necessary by grinding, saw cutting, blast cleaning (sand or water), mechanical abrading or a combination of these methods as required to provide a sound, clean, dry surface for sealant application. Dust, loose particles, etc., should be blown out of joints with dry, oil-free compressed air or be vacuum cleaned.

Metal and glass surfaces adjacent to masonry should be cleaned by wiping with an oil-free absorbent cloth saturated with solvent such as xylene or toluene. Do not use alcohols as they inhibit the cure.

Priming

Standard substrates that normally allow unprimed adhesion of the sealant include: mortar, cement block, portland cement concrete and asphalt. Nonporous substrates, such as aluminum, steel or plastics, may require use of a primer for optimal adhesion.

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Installation (Cont.)

Backer Rod

DOWSIL™ SL Parking Structure Sealant is part of a system that must include the proper backer rod and proper installation procedures. The backer rod must be expanded, closed cell polyethylene foam. Where irregularly shaped joints exist, backer rod that is open-cell with an impervious skin is acceptable to ensure a tight fit against the irregular joint wall faces. Several other back-up materials (paper, fibrous ropes and open-cell foams) are available, but have proven to be unacceptable. There are several manufacturers of closed-cell polyethylene foam and any may be used.

When using DOWSIL™ SL Parking Structure Sealant with other DOWSIL™ parking structure sealants, please note that these materials are all compatible with one another in either the cured or uncured state, may come in contact with one another, and will bond to one another provided no debris or other contaminants interfere with the bond.

Maintenance

Damaged sealant can easily be repaired by cleaning the surrounding area with an appropriate solvent (do not use alcohol), cutting the damaged area out with a knife, and resealing with DOWSIL™ SL Parking Structure Sealant. Do not overfill the joint.

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 the original, unopened container at or below 32°C (90°F), DOWSIL™ SL Parking Structure Sealant has a shelf life of 12 months from date of manufacture. Refer to product packaging for “Use By Date.” Keep containers tightly closed.

Packaging Information

DOWSIL™ SL Parking Structure Sealant is supplied in a bulk 4.5 gallon pail.

Limitations

DOWSIL™ SL Parking Structure Sealant should not be applied:

- In projects requiring material approval with state departments of transportation for highway pavements, or Federal Aviation Administration approval for use in airfield pavement joints (runways, taxiways, aprons)
- To surfaces that have prolonged or continuous immersion in water
- In below-grade applications
- In totally confined spaces where the sealant is not exposed to atmospheric moisture
- In joints greater than 2 inches in width (such applications should be reviewed with a Dow sales application engineer for alternative product recommendations)
- To surfaces that will be painted — most paint films will not stretch with extension of the sealant and may crack or peel
- To surfaces that either were or will be treated with a silane waterproofing material within 14 days
- In applications using natural stone pavers, because fluids in the sealant may stain the stone
- To surfaces coated with bitumen-based waterproofing coatings

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Limitations (Cont.)

Do not apply deck coatings over uncured sealants as cure retardation or inhibition may occur.

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

Shipping Limitations

None.

Availability

DOWSIL™ SL Parking Structure Sealant is available from your local distributor.

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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