Technical Data Sheet

# DOWSIL™ FC Parking Structure Sealant

Ultra-low modulus silicone sealant for parking structure joints that experience extreme movement

## Features & Benefits

- Good weatherability
- Resilient
- Long life reliability
- Fast cure
- Unaffected by flood coats of silane waterproofing materials after only six hours of cure
- Part of the Silspec®1 PDX high performance joint system
- Easy to use
- Convenient disposal pack
- High movement capability
- Ultra-low modulus
- Seals irregular surfaces
- All temperature gunnability
- Bonds to itself

## Composition

- Two part, ultra-low modulus, neutral cure, silicone sealant

## Applications

- Parking structures, parking lots, sidewalks, loading/material transfer docks and pedestrian bridges and plazas
- In situations where extreme joint movements occur within a short time after application
- For new construction or as a remedial or repair sealant in existing construction
- In horizontal or slightly sloped joints (up to 6 percent from horizontal)

## Typical Properties

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

| Test[1] | Property | Unit | Result |
|---|---|---|---|
| | **As Supplied** | | |
| | Type | | Ultra-low modulus silicone |
| | Cure | | Two part |
| | Color (Part A, Part B) | | Dark gray, white |

1. ASTM: American Society for Testing and Materials.

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Form No. 62-489-01-0126 S2D

## Typical Properties (Cont.)

| Test | Property | Unit | Result |
|---|---|---|---|
| | Flow, Sag or Slump | | Self-Leveling |
| | Skin Over Time at 25°C (77°F), Maximum | minutes | 20 |
| | Full Adhesion | days | 1 – 2 |
| | VOC Content[2] | | |
| | Part A | g/L | 30 |
| | Part B | g/L | 0 |
| | **As Cured — After 48 hours at 25°C (77°F) and 50 percent RH** | | |
| ASTM D 2240 | Durometer, Shore 00 | points | 60 |
| ASTM D 412 | Elongation | percent | 1600 |
| ASTM D 412 | Tensile | psi | 75 |
| ASTM D 412 | Modulus at 150% Elongation | psi | 23 |
| ASTM C 1135 | Modulus | | |
| | At 25% Elongation | psi | 8 |
| | At 50% Elongation | psi | 10 |
| ASTM C 1135 | Ultimate Elongation (Concrete) | percent | > 600 |
| ASTM C 719 | Movement Capability | percent | +100/-50 |

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

## Description

DOWSIL™ FC Parking Structure Sealant is a two part, cold applied, self-leveling, fast cure silicone material that cures to an ultra-low modulus silicone rubber designed for use in joints that experience thermal and/or vertical movements, especially during the early stages of sealant cure.

Because of its fast cure profile, ultra-low modulus characteristics and good extension/compression recovery (+100/-50 percent of original joint width), DOWSIL™ FC Parking Structure Sealant gives outstanding performance where extreme joint movements occur within a short time after application, such as in parking structures, parking lots, sidewalks, loading/material transfer docks and pedestrian bridges and plazas.

DOWSIL™ FC Parking Structure Sealant is intended for use with mortar, cement block, portland cement concrete, asphalt, carbon steel and concrete repair/patching materials. All surfaces, except asphalt, require the use of a primer prior to installing the sealant. Consult the Priming section or your representative for recommendations for specific substrate primer combinations.

DOWSIL™ FC Parking Structure Sealant is a self-leveling sealant primarily intended for use in horizontal or slightly sloped joints (up to 6 percent from horizontal) that vary in width from ½ to 3 inches at the time of sealing.

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## Description (Cont.)

Wider joints can be sealed, but require that you contact your representative to discuss the application. See Figure 1.

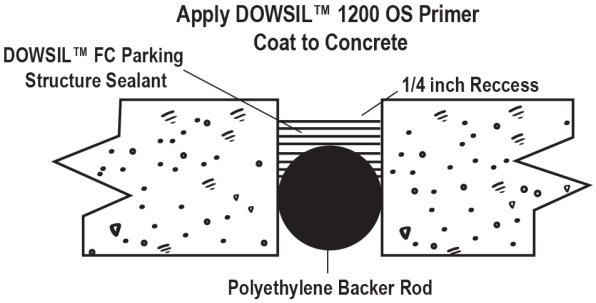



**Figure 1: Good Joint Design**

1. Joint width wide enough to accommodate movement.
2. Joint deep enough to allow for recess, sealer placement and backer rod.
3. Proper backer rod placement.
4. Sealant installed to proper depth and width.
5. Sealant recessed ¼ inch to ½ inch below pavement surface.

DOWSIL™ FC Parking Structure Sealant has the following features:

- Good weather ability — the sealant's 100 percent silicone rubber is virtually unaffected by sunlight, rain, snow, ozone or temperature extremes
- Resilient once cured, the sealant rejects stones and other debris, permitting unrestricted joint movement with temperature changes
- 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
- Fast cure cures fast enough to accommodate typical daily thermal or differential joint movements without being damaged. In comparison, single component sealants typically require 7 to 21 days to fully cure and often are prematurely damaged due to excessive movement prior to complete cure
- Unaffected by flood coats of silane waterproofing materials after only six hours of cure
- Is part of the Silspec® PDX high performance joint system, which combines a high strength, flexible polymer nosing with this fast cure silicone, and is specifically designed for restoration of failed expansion joint systems. Refer to the Parking Structure Installation Guide, Form No. 62-481
- Easy to use self-leveling (no tooling), a two part formulation with the ease of one part installation; no premixing or measuring required
- High movement capability once cured, the sealant will accommodate movements up to +100/-50 percent of original joint dimension at the time of sealant application
- Ultra-low modulus easily stretches in the joint with little stress on the bond line or joint wall, maximizing the probability of a successful seal with continuous or gradual joint movement
- Seals irregular surfaces self-leveling characteristic makes the sealant ideal for sealing irregular joint surfaces by providing adequate contact to the substrate with no tooling
- All temperature gunnability consistency and self-leveling characteristics are relatively unchanged over normal installation temperature range
- Bonds to itself ideal for maintenance applications where only one section at a time may be sealed, but a continuous seal is required

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DOWSIL™ FC Parking Structure Sealant

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## Installation

### Joint Design

Low modulus DOWSIL™ FC 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™ FC Parking Structure Sealant should be no thicker than ½ inch and no thinner than ¼ inch at the crown of the backer rod. See Table 1 for estimates of bead thickness, coverage rates and sealant recess below the joint surface.

### Table 1: Usage Rate and Sealant Recess Recommendations

| Joint Width, inches | Recommended Sealant Bead Thickness, inches[1] | Recess, inches | Kit Yield, linear feet[2] | Gallon Yield, linear feet[2] |
|---|---|---|---|---|
| ½ | ¼ | ¼-⅜ | 35 | 123 |
| 1 | ½ | ¼-⅜ | 9 | 35 |
| 1½ | ½ | ½-⅝ | 6 | 26 |
| 2 | ½ | ½-⅝ | 4.5 | 17 |
| 2½ | ½ | ½-⅝ | 3.8 | 12.7 |
| 3 | ½ | ½-⅝ | 2.3 | 8.5 |

[1]Bead thickness measured from high point of backer rod in the joint.
[2]Yield varies with joint design, backer placement, waste and experience.

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 ¼ to ⅜ inch with a ½ to ⅝ inch recess recommended in wider joints.

### Backer Rod

DOWSIL™ FC 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.

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.

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## Installation (Cont.)

### 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

For concrete surfaces and Silspec® 950 PDX, it is necessary to use DOWSIL™ 1200 OS Primer Coat. Uniformly coat the entire surface using a brush or clean cloth moistened with primer. Do not saturate the substrate, as this will increase drying time. Allow a minimum of 60 minutes for the prime coat to dry prior to sealant application.

For carbon steel surfaces, apply a thin coating of a recommended primer. The steel must be sandblasted (see Parking Structure Installation Guide, Form No. 62-481, for all preparation recommendations) prior to applying a uniform coating of primer to the entire surface. Allow the primer to “dry to the touch” prior to sealant application.

Contact your sales application engineer for further recommendations on substrates other than carbon steel, concrete, mortar, asphalt or brick.

### Application

When using DOWSIL™ FC Parking Structure Sealant with other Dow 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™ FC 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™ FC Parking Structure Sealant has a shelf life of 18 months from date of manufacture. Refer to product packaging for “Use By Date.” Keep containers tightly closed.

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## Packaging Information

DOWSIL™ FC Parking Structure Sealant is available in 9 gallon kits consisting of two 4.5 gal (17 L) bulk plastic pails, labeled Part A and Part B.

## Limitations

DOWSIL™ FC Parking Structure Sealant should not be applied:

- In applications using natural stone pavers, because fluids in the sealant may stain stone
- 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
- To surfaces that will be painted most paint films will not stretch with extension of the sealant, and may crack or peel
- To surfaces coated with bitumenbased waterproofing membranes
- By field mixing in an open bucket the proper application equipment must be utilized to ensure optimum performance
- Using an open cell backer rod without a totally impervious skin

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

## Shipping Limitations

None.

## 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.

## Availability

DOWSIL™ FC Parking Structure Sealant is available from Dow authorized distributors.

## 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.

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