



DOWSIL™ 680 Sanitary Sealant

Features & Benefits

- Contains a fungicide to inhibit the growth of mold and mildew.
- Adheres to a wide range of building materials and finishes including plastics.
- Neutral cure; will not corrode galvanized/zinc-coated steel or attack concrete.
- Excellent resistance to weathering, ultra-violet radiation, vibration, moisture, ozone, temperature extremes, airborne pollutants, cleaning detergents and many solvents.
- Long life reliability; cured sealant stays rubbery from -50°C to +150°C without tearing, cracking, drying out or becoming brittle.
- Capable of withstanding movements up to $\pm 25\%$ of original joint width.
- Non-slumping; can be used in vertical and overhead joints.
- Easy to use – one part, no mixing required.
- Can be applied in any season.
- Choice of colors:
 - Translucent
 - White
 - Pale beige
 - Alabaster
 - Dark beige
 - Grey
 - Slate grey
 - Tile grey

Due to variations in local demand certain colors may not be held in stock in all countries. Please refer to Dow for color availability and lead times.

Dow reserves the right to change colors without notice.

Applications

Suitable for sealing:

- Glass
- Aluminium
- Brick
- Cement
- Grout
- Ceramic tiles
- Fibreglass
- Baked enamel surfaces
- Painted finishes

Typical Properties

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

Property	Unit	Result
As Supplied – Tested at 25°C, 50% Relative Humidity		
Flow, Sag or Slump		Nil
Approximate Working Time	minutes	10
Tack Free Time	minutes	20
In-depth Cure at 25°C	mm depth/day	2
As Cured – After 7 Days at 25°C, 50% Relative Humidity		
Durometer Hardness, Shore A	points	28
Ultimate Tensile Strength,	MPa	1.5
Temperature Stability	°C	-50 to +150
Movement Capability	%	±25

Description

DOWSIL™ 680 Sanitary Sealant is a high performance neutral cure silicone sealant designed to resist the growth of mold and mildew where conditions of high humidity and temperature exist. It is ideal for use in and around:

- Bathrooms
- Laundry sinks
- Ceramic tiles
- Vitreous china
- Enamel painted surfaces
- Fibreglass spa units

Six Steps to Sure Sealing

Step 1: Correct Joint Design

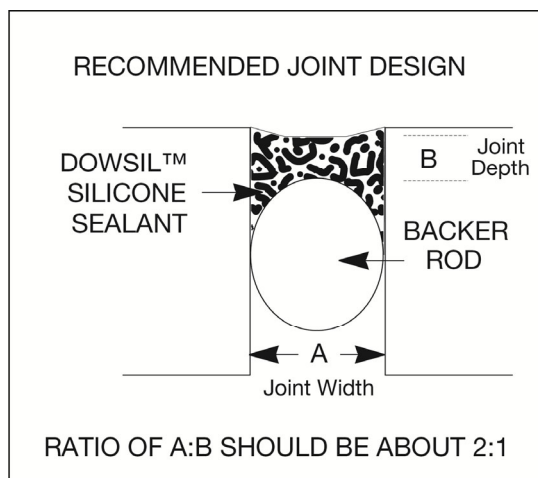
Correct joint design minimizes stresses on the sealant, enables optimum sealant movement capability, facilitates sealant application and minimizes the potential for sealant splitting and voiding by enabling cure by-products to exit from the joint.

Guidelines are:

1. Minimum joint width of 6 mm
2. Minimum joint depth of 6 mm
3. For larger joints the width of the joint should be greater than the sealant depth (Refer Figure 1, Refer point 2. above)
4. Avoid 3 sided adhesion; apply backer rod or bond breaker tape in the base of the joint to ensure the sealant is only bonded to the sides of the joint and is free to move to its full capacity under joint movement (Refer Figure 1).

Six Steps to Sure Sealing (Cont.)

Step 1: Correct Joint Design (Cont.)



Step 2: Clean All Joint Surfaces

Substrate surfaces must be completely clean, dry and sound. Completely remove any loose debris and/or old sealant.

General recommendations are:

- a) For non-porous surfaces such as glass and painted aluminium:
 - Solvent wipe the joint surfaces using a non-oily solvent such as methyl ethyl ketone, white spirits or mineral turpentine on a clean white lint-free cloth to remove any oils and contaminants.
 - Immediately wipe with a second dry cloth to remove any traces of solvent and contamination.
- b) For porous surfaces such as concrete:
 - Wire brush or abrade the surfaces to remove loose debris, old paint and other contaminants.
 - Remove dust with an oil-free compressed air blast and/or high pressure water blast.
 - Allow to dry before sealing. If necessary solvent wash and allow to dry.
- c) Priming:
 - A DOWSIL™ primer may be needed for optimum adhesion to some substrates based on testing conducted by the end user. (Refer Section: Required Testing in the Application). Information on Dow Primers is available on request from Dow.

Step 3: Install Backing Material

Backer rod (eg. closed cell polyethylene type or open cell polyurethane foam type) or similar material (eg. low tack polyethylene tape for shallow joints) can be used in the base of the joint to control sealant depth and avoid 3 sided adhesion by preventing adhesion to the base of the joint.

Step 4: Mask Adjacent Surfaces with Masking Tape

Masking will ensure a clean, neat appearance and reduce clean up by protecting surrounding areas from excess sealant.

Six Steps to Sure Sealing (Cont.)

Step 5: Applying Sealant

- Cut tip off the cartridge.
- Cut nozzle at 45° angle to the desired shape and size.
- Screw nozzle onto cartridge.
- Place cartridge in caulking gun. Air-operated or hand-operated caulking guns can be used.
- Apply sealant into the base of the joint so that it completely fills the joint, wetting both sides. Do not simply lay a bead on the surface as the sealant will not penetrate the joint under its own weight.

Step 6: Tool Joint and Remove Masking Tape

- Tool the surface of the joint immediately after sealant application to provide a smooth even finish and to ensure the sealant wets the sides of the joint.
- Tooling should be completed in one continuous stroke before the sealant forms a skin (ie; within the working time). A tool with a convex profile is recommended to keep the sealant within the joint. When sealing horizontal joints tool the sealant so that any liquids (eg. rain water, cleaning solutions) do not collect and pool on top of the sealant.
- Do not use soap or water as tooling aids.
- Remove masking tape immediately after tooling and before the sealant skins.
- After a skin has formed, do not disturb the joint for 48 hours. Avoid contact with various cleaning agents or solvents (eg. bleach) whilst sealant is curing.
- Uncured sealant can best be cleaned from tools using commercial solvents such as xylene, toluene or methyl ethyl ketone. Mineral turpentine will suffice if available. Observe proper precautions when using flammable solvents. On porous surfaces allow sealant to cure before removing by abrasion. Cured sealant is not soluble and must be trimmed with a blade, avoid undercutting the seal.
- Sealant releases methanol vapor during cure. Once cured this odor disappears.

Required Testing in the Application

It is the responsibility of the end user to thoroughly test any proposed use of the sealant and independently conclude satisfactory performance in the application.

Maintenance

Whilst mold growth will initially be inhibited on this sealant, it is recommended that the applied sealant be cleaned regularly to remove any build up of soap residue or grime. Ultimately under constant or long term use the fungicide effectiveness will diminish. A regular clean of the sealant with a solvent is then recommended to minimize mold growth. If cured sealant becomes damaged, replace required portion. DOWSIL™ 680 Sanitary Sealant will adhere to cured silicone. Ensure cured sealant is clean.

Usage Rate Table

The table below provides a guide to the linear meters per cartridge for various joint sizes. NOTE: actual sealant usage will vary depending on such factors as joint geometry, backer rod placement, tooling and wastage at the job site.

Joint Depth (mm)	Joint (Width)						
	6	8	10	12	15	20	25
6	8.3	6.2	5	4.1	3.3	2.5	2.0
8	N/O	4.6	3.7	3.1	2.5	1.8	1.5
10	N/O	N/O	3	2.5	2.0	1.5	1.2
12	N/O	N/O	N/O	2.0	1.6	1.2	1.0

N/O: Not optimum joint design for best sealant performance. (Refer section: Six Steps to Sure Sealing, Step 1).

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

Store in original unopened containers in a dry place. Temperature should not exceed 30°C for prolonged periods. Use sealant before stated 'Use By' date printed on the packaging. Previously opened cartridges may be used, provided still within the 'Use By' date, by simply removing any cured sealant from the nozzle.

Packaging Information

Supplied in standard size 300 mL plastic cartridges which fit ordinary caulking guns.

Limitations

- Do not use for structural glazing.
- Not recommended for continuous water immersion applications.
- Not recommended for use with marble and similar highly porous stone finishes where sealant may affect their appearance.
- Sealant may discolor copper and brass.
- Not recommended for joints exceeding $\pm 25\%$ movement.
- Not recommended for use in below ground joints or trafficable joints where abrasion and physical abuse are encountered.
- Not recommended for use in the construction or sealing of aquariums.
- Cannot be painted as paint will not adhere to sealant.
- Not recommended for use on polycarbonate plastic sheeting, suitability for use on other types of plastic should be tested prior to application.
- Not for use on freshly painted surfaces (enamel or solvent containing types).
- Should not be applied to materials that bleed plasticizers or solvents or release by-products that may inhibit its cure, affect adhesion or discolor the sealant (eg. bituminous based adhesives and coatings).

Limitations (Cont.)

- Do not clean or treat the sealant with materials, solvents or cleaning agents that may affect or discolor the sealant, particularly during sealant cure (Refer to Typical Properties table.).
- Do not apply when substrate surface temperatures exceed +50°C.
- Should not be used as an interior penetration firestop sealing system.
- Should not be applied to surfaces in direct contact with food or drinking water. This sealant has not been tested to determine status under U.S. Food and Drug Administration regulations.
- Not recommended for direct contact on the reflective coatings on mirrors.
- Polyester powder coat paint exhibits a highly variable wax content on the surface. Ensure thorough solvent cleaning.
- Sealant cures by contact with moisture vapor in the air.
- Not recommended for use in closed or confined areas where sealant cure may be inhibited by lack of air.

NOTE: Refer to Six Steps to Sure Sealing and Required Testing in the Application prior to use.

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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