Consumer Solutions

DOWSIL™ 758 Silicone Weather Barrier Sealant

Application Guidelines

Introduction

There are five basic steps for proper joint preparation and sealant application:

1. **Clean –** Joint surfaces must be clean, dry, dust-free and frost-free.
2. **Prime –** If required, primer is applied to the clean surfaces.
3. **Pack –** Backer rod or bond breaker is applied as required.
4. **Seal –** Sealant is applied to the substrate or into the sealant joint.
5. **Tool –** Dry tooling techniques are used to create a flush joint and to make certain the sealant has the proper configuration and fully contacts the joint walls.

The following sections are intended to provide detailed information in each of these areas.

1. Clean – Substrate Cleaning Procedure

This section provides information on cleaning solvents and general cleaning procedures for peel-and-stick and spunbond polyolefin flashing substrates. Please follow all Dow standard published guidelines (available in the Dow Americas Technical Manual, Form No. 62-1112) for cleaning of metal or cementitious substrates.

The key to good sealant adhesion is a clean surface. You should always check with the substrate supplier to ensure that the cleaning procedures and solvents are compatible with the substrate.

Flashing or membrane substrates

Peel-and-stick and spunbond polyolefin substrates are unique surfaces to which to bond, but must be clean to achieve sealant adhesion. However, adhesion to these substrates may be negatively affected if they are "overcleaned," burnished or polished. Dow recommends cleaning substrates using a light "two-cloth" wipe method, using an isopropanol alcohol (IPA) solvent wipe followed by a dry cloth. Use clean, soft, absorbent, lint-free cloths for the cleaning.

A. If there is significant dirt or debris visible on the membrane surface, lightly brush off using a soft brush.
B. Pour or dispense an acceptable cleaning-grade solvent onto the cloth. A plastic (solvent-resistant) squeeze bottle works best for organic cleaning solvents. Do not dip the cloth into the container of solvent, as this will contaminate the cleaning agent.
C. Lightly wipe the membrane surface to remove contaminants. Check the cloth to see if it has picked up contaminants. Rotate the cloth to a clean area and re-wipe until no additional dirt is picked up.
D. Immediately wipe the cleaned area with a separate clean, dry cloth.

The IPA must be removed with the dry cloth before the solvent evaporates or the cleaning will be less effective. Allow the IPA to "flash" or dry prior to applying primer or sealant. Drying time depends on environmental conditions, but allowing 5-10 minutes for the IPA to flash off a membrane substrate typically is sufficient.

2. Prime – Primer Application Procedure

Generally, DOWSIL™ 758 Weather Barrier Sealant does not require use of a primer. Should a primer be found to be necessary to enhance adhesion, please follow these procedures to apply DOWSIL™ brand primers:

A. Joint surfaces should be clean and dry.
B. Pour some primer into a small, clean container; be sure to replace and tighten the cap on the primer can. To prevent deterioration of the primer, do not pour more than a 10-minute supply into the container.

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C. Depending on the substrate and job conditions, two different methods can be used to apply the primer. Dip a clean, dry, lint-free cloth into the primer and gently wipe a thin film onto the surface. **Caution:** Overpriming can cause adhesion loss between the sealant and the primer. If too much primer has been applied, a powdery, chalky, dusty film will form on the surface. Excess primer should be removed by dusting the joint with a clean, dry, lint-free cloth or a non-metallic bristle brush. D. Allow the primer to dry until all the solvent evaporates. This typically takes 5 to 30 minutes, depending upon the temperature and humidity.

E. Inspect the surface for dryness. If too much primer has been applied, a powdery, chalky, dusty film will form on the surface. In this case, remove excess primer with a clean, dry, lint-free cloth or a non-metallic bristle brush before applying sealant.

F. The surface is now ready for application of the backer rod (if applicable) and sealant. Sealant must be applied the same day the surfaces are primed. Any surfaces primed but not sealed on the same day must be re-cleaned and re-primed before applying sealant.

Store primer with cap tightly closed, as DOWSIL™ primers will react quickly when exposed to moisture, reducing their adhesion-promoting capabilities.

3. Pack – Backer Rod Installation

Lap joints between flashings do not require backer rod.

Standard butt joints for internal seals may utilize backer rod. Install backer rod after any cleaning solvents and primers are completely dry. Backer rod is generally sized 25% greater than the joint width. Acceptable backer rod types for use with DOWSIL™ 758 Weather Barrier Sealant are open cell or non-gassing polyolefin, commonly referred to as SOF® ROD[1].

4. Seal – Sealant Application

It is critical that the sealant fills the entire joint or cavity and firmly contacts all surfaces intended to receive sealant. If the joint is improperly filled, good adhesion will not be achieved, and sealant performance will be weakened.

To obtain full adhesion, sealants require a clean, dry, frost-free surface. Although silicone sealants have excellent wide-temperature gunnability, the practical application temperature can be dictated by frost formation on the joint edges, which can begin to occur below 4°C (40°F). To assist in the drying of a frost-containing joint, a water-soluble solvent, such as IPA, should be used.

Sealant should be applied as follows:

Apply the sealant in a continuous operation using a caulking gun or pump. Use a positive pressure adequate to fill the entire joint width or across the entire lap joint. Push the sealant ahead of the application nozzle, taking care to ensure complete filling of the sealant cavity.

5. Tool – Tooling Procedure

Tool the sealant with a dry tool with light pressure before a skin begins to form (typically 10 to 20 minutes). Tooling forces the sealant against the back-up material and the joint surfaces. Do not use liquid tooling aids, such as water, soap or alcohols. These materials may interfere with sealant cure and adhesion and create aesthetic issues.

Joint Design

To achieve a sufficient durability of the seal, the sealant joint should be designed so that the maximum expected sealant movement, including thermal, settlement and live load, does not exceed 25%. Dow recommends consulting with the flashing manufacturer for details on the movement capability of flashing materials as used in your joint configuration.

When detailing the sealant joints using DOWSIL™ 758 Weather Barrier Sealant, the following should be considered:

- DOWSIL™ 758 Weather Barrier Sealant may be used to seal lap joints between two pieces of flashing or other materials. Please ensure a ¼" (6 mm) sealant-to-substrate contact ("bite") on each side of the lap joint and minimum 1/16" (1.5 mm) sealant depth.
- The minimum width of a perimeter or "hourglass" joint should be ¼" (6 mm). For joints between ¼" to ½" (6-12 mm) wide, a minimum seal depth of ¼" (6 mm) is required.
- For joints above ½" (12 mm wide), a width-to-depth ratio of 2:1 should be used up to a maximum depth of ½" (12 mm).
- Joints in excess of 1" (25 mm) wide are possible, but sealant depth should not exceed ½" (12 mm). Specific recommendations should be obtained from Dow for any joints in excess of 3" (75 mm).
- In applications where fillet-type joints are used, a minimum ¼" (6 mm) sealant bite is recommended for each substrate.

Contact Us

Dow has sales offices, manufacturing sites and science and technology laboratories around the globe. Learn more about DOWSIL™ 758 Silicone Weather Barrier Sealant and our full range of construction solutions, including service and support, at **consumer.dow.com/construction.**

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