Technical Data Sheet

# DOWSIL™ 787P Modified Silicone Sealant

Neutral cure, one-component, modified silicone weatherproofing sealant

## Features & Benefits

- Low modules, good movement capability, can accommodate ±25% movement in a properly designed joint
- Good adhesion (recommend to use DOWSIL™ Primer M): most of the building materials such as stone, aluminum, ceramics, precast concrete components (PC board), cement fiber board; formulate to prevent staining of porous substrates and reduce streaking
- Surface paint-ability: compatible with most waterborne architectural paints, coating can be sprayed onto the surface-cured sealant which does not negatively impact the curing of the sealant bulk
- Ease of application – ready to use, excellent rheology, low string upon gunning and wide temperature
- Excellent weather resistance, aging properties, long-term superior tensile, compressive and shear stress follow-up, the good weatherability to ensure the durability of the seal and excellent water resistance

## Applications

- DOWSIL™ 787P Modified Silicone Sealant, is a low modulus, one-component, neutral curing, no ISO contained chemicals added and low VOC construction sealant, is recommended for sealing and assembly applications in general construction and pre-casting concrete construction to provide long-term waterproof seal effect

## Typical Properties

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

| Test | Property | Unit | Result |
|---|---|---|---|
| **As supplied – Test at room temperature of 23 ± 2°C and relative humidity of 50%** | | | |
| GB13477[1] | Flowing, sag (slump) | mm | ≤ 2 |
| GB13477 | Working time | minutes | Approx. 60 |
| GB13477 | Tack free time | minutes | Approx. 100 |
| | Deep section curing[2] | mm/day | 3 |

1. GB13477: National standard of China test method for building sealants.
2. Curing speed and operation time can vary with atmospheric temperature and humidity levels. High temperature and humidity results in higher curing speeds, while low atmospheric temperature and humidity results in slower curing speeds.

## Typical Properties (Cont.)

| Test | Property | Unit | Result |
|---|---|---|---|
| **As cured - After 7 days at atmospheric temperature of 23 ± 2°C and relative humidity of 50%** | | | |
| GB13477 | Hardness, Shore A | | 18 |
| GB13477 | Ultimate tensile strength | MPa | 0.6 |
| GB13477 | Elongation | 100% | 350 |
| | Temperature durability | °C | -40 to +100 |
| GB13477 | Movement capability | % | ± 25 |
| GB13477 | Adhesion at 100% elongation | | No break |
| GB23261[3] | Staining | | None |

3. GB23261: Building sealants for stone

## 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. (See Figure 1, and refer to guidelines 1 and 2 above.)
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. (See Figure 1.)

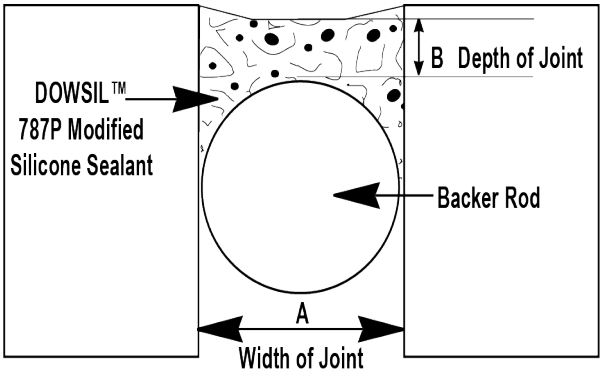


**Figure 1: Recommended joint design.**

## 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 DOWSIL™ Primer M is recommended. The Dow adhesion test report can be requested from your Dow Technical Representative.

### 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.

### 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.

## How to Use (Cont.)

**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.

**Paintable Property**

DOWSIL™ 787P Modified Silicone Sealant could be painted over after curing or dried with coating materials like epoxy or acrylic paints. Please test the coating if it involves solvent contents like enamel or oil base paints. Coating should have similar tensile strength compared with adhesive in order to get best appearance and property.

Painting could be processed after 24 hours if thickness of adhesive is less than 3 mm and 48 hours if thickness more than 3 mm.

### Table 1: Estimated sealant consumption[1] for joints of various dimensions.

Application length per piece of (590 ml) DOWSIL™ 787P Modified Silicone Sealant (m).

| Depth of joint (mm) | Width of joint (mm) | | | | | |
|---|---|---|---|---|---|---|
| | **6** | **8** | **10** | **12** | **15** | **20** |
| **6** | 16.6 | 12.6 | 10.0 | 8.4 | 6.6 | 5.0 |
| **8** | N/O | 9.4 | 7.6 | 6.2 | 5.0 | 3.8 |
| **10** | N/O | N/O | 6.0 | 5.0 | 4.0 | 3.0 |
| **12** | N/O | N/O | N/O | 4.2 | 3.4 | 2.6 |

1. The actual consumption of sealant varies depending on the joint design, position of backing material, tooling technology and building site wastage.

## 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 CONSUMER.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™ 787P Modified Silicone 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, consumer.dow.com or consult your local Dow representative.

consumer.dow.com

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