SIMSEAL®

*think* **SILICONE,** *think* **SIMSEAL**

# ROADBOND® SL

## HIGH PERFORMANCE SELF-LEVELING SILICONE CONCRETE JOINT SEALANT

### Description

**Simseal RoadBond® SL** is a high performance self-leveling one-part, moisture curing, and room temperature vulcanising (RTV) 100% silicone sealant that cures to a low durometer. It has ultra-high elongation and remains very durable. It has good flexibility and a low modulus, so it will maintain its integrity in joints with movement. Roadbond® SL exhibits excellent unprimed adhesion to concrete, steel and most other construction substrates, provided they are clean, dry and free of dust and frost. It is unaffected by sunlight (ultraviolet rays), ozone, temperature extremes, rain and snow. It has a long service life, under normal conditions it will maintain its physical properties between -60°C to 200°C (-76°F to 392°F).

### Features

- Easy application
- 100% silicone, one-part RTV
- Smooth, non-slump paste
- Can be extruded from -60°C to 200°C
- May be used in joints that are not uniform in width.
- Weather and UV resistant.
- Fuel resistant-short term exposure.
- One-part, cold applied, ready-to-use as supplied; dispensed directly from the bulk container into the joint by hand or with an air-powered pump.
- Unprimed adhesion – primer is not required for bonding to General Purpose Cement concrete.
- For optimum adhesion, the surface must be clean, dry and frost-free.
- Cure time – typically, the sealant will have a skin-over time of one hour or less at standard conditions.

### Aplications

Simseal RoadBond® SL is ideally suited for:

- Horizontal joints in concrete (concrete highways, airport runways, bridges, parking garages and sidewalks).
- Extreme joint movement
- Concrete, steel, most construction substrates
- Complies with ASTM D5893 Type SL.

### Storage

Simseal Roadbond® SL when stored in original, unopened container in dry, shaded conditions, away from sources of heat or ignition, and stored below 32°C (90°F), has a shelf life of 12 months from date of manufacture.

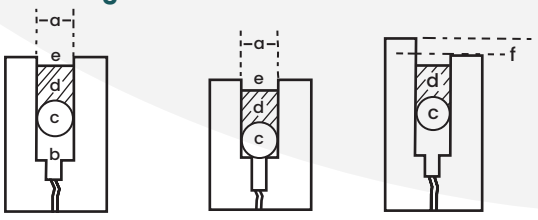
### Standards Compliance

- Complies with Transport for NSW Bridge Decks QA Specification B312 – Type GN and Type GT
- Complies with Transport for NSW Rigid Pavements Specification R83
- Complies with Queensland Department of Transport and Main Roads MRTS77 (July 2019) – Rigid Concrete Pavement Joint Sealing
- Suitable for horizontal joint systems in concrete roads and bridge decks requiring specification aligned sealants

## Technical Data

| PROPERTY | VALUE |
|---|---|
| **Chemical Base** | 100% silicone, one-part RTV |
| **Appearance** | Smooth, thick liquid |
| **Cure System** | Neutral (Oxime), Moisture Cure |
| **Tack-free / Skin-form time** | 90 minutes |
| **Tooling/Skin-Over Time** | 22 minutes |
| **Cure Time** | 48 hours |
| **Full Physical Characteristics** | 7 days |
| **Specific Gravity** | 1.11 |
| **Slump/Sag** | Flowable |
| **Tensile Strength at 150% Elongation (ASTM D412)** | 100 psi |
| **Durometer Hardness (ASTM D2240, Shore A)** | 10 points |
| **Tensile Strength (ASTM D412)** | 220 psi (15.5 kg/cm² ) |
| **Elongation at Break (ASTM D412)** | 1000% |
| **Joint Movement Capability (ASTM C719)** | +100% / -50% |
| **Application Temperature** | Ambient to 50°C (120°F) |
| **Temperature Resistance** | -60°C to 200°C (-76°F to 392°F) |
| **Accelerated Weathering (ASTM C793-91)** | Effects of Accelerated Weathering (5000 hours) |

## Joint Design




Typical Joint Configuration | Low Cut Joint Configuration | Joint Design when Grinded

a. The joint width must be sufficiently wide to accommodate movement*.
b. The joint should be sawed to an adequate depth to allow the placement of backer rods and sealant, and to provide space for the removal of old sealant compounds through pumping. Please note that this pertains to standard joints exclusively, as no void space beneath the backer rod is necessary in new construction.
c. Ensure proper placement of backer rods to prevent adhesion on three sides.
d. The sealant should be installed at the appropriate depth and width.
e. The sealant must be recessed to a minimum of 9.53 mm to 12.7 mm (3/8 inch to 1/2 inch) below the pavement surface.
f. The depth of the lowest slab determines the necessary recess if grinding is anticipated; post-grinding, the sealant will attain the correct recess below the pavement surface.
* For further insights on joint width, please refer to the publications "Silicone Sealants for Application in Concrete Construction," by Spells and Klosowski, Vol. 1, N° 1, published by the American Concrete Institute, SP-70, 1981; "Construction Sealants and Adhesives", by J.B. Cook, published by Wiley-Interscience in 1970; and J.M. Klosowski's "Sealants in Construction", published by Marcel Dekker in 1989.

## Surface Preparation

New concrete must undergo a curing and drying period of a minimum of 7 days.
Prior to the installation of the backer rod and the application of Roadbond® SL, it is essential that all joints are thoroughly cleaned, made dry, and cleared of any contaminants.
If it becomes necessary to flush a joint with water, this should be done in a unidirectional manner to minimize the risk of contamination.
After drying, a separate sandblasting pass should be executed for the top inch (25mm) of each surface. The nozzle must be held at an angle of no more than two inches (50mm) from the face.
Dust and loose particles within the joint should be removed using oil-free compressed air, while ensuring movement in only one direction. The presence of an oily residue may impede adhesion.

## Aplication

To ensure proper application, it is essential to install the backer rod at the appropriate depth, achieving the prescribed thickness of Roadbond® SL. This installation should also create the necessary recess below the surface, as outlined in the provided table.
When applying the sealant, a continuous motion is required, directing the nozzle from the bottom upwards to prevent the formation of air voids. Furthermore, it is crucial to properly tool the sealant, pressing it against the joint faces to maximize adhesion and establish the intended recess below the surface, as illustrated below.
Any surplus sealant should be diligently removed. Following the correct recessing of the joints, the roadway can promptly be reopened to traffic upon the completion of the installation and cleanup process.

ROADBOND® SL

## Caution

Roadbond® SL uses a neutral cure system, so no acetic acid or objectionable byproducts are evolved during cure.
Adequate ventilation should be provided with extensive use of this sealant. On direct contact, uncured sealant may irritate eyes. Flush well with water and call a physician.
Avoid prolonged contact with skin. See Safety Data Sheet available on this product. This product is intended for use only by professional applicators in accordance with the advice given in this document, the Safety Data Sheet (SDS) and the container(s), and should not be used without reference to the SDS that Simseal® has provided to its customers. KEEP OUT OF REACH OF CHILDREN.
All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards & regulations. If in doubt regarding the suitability of use of this product, consult Simseal® for further advice.

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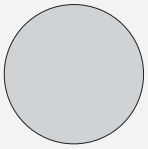
## Recommended Joint Dimensions & Estimated Sealant Consumption*

| Joint Width (mm) | 6 | 10 | 12 | 20 | 25 |
|---|---|---|---|---|---|
| Backer Rod diameter | 10 | 13 | 16 | 25 | 30 |
| Backer Rod recess below surface | 12 | 12 | 12 | 16 | 24 |
| Sealant Thickness | 6 | 6 | 6 | 10 | 12 |
| Sealant recess below surface | 6 | 6 | 6 | 6 | 12 |
| Est. linear meter/liter | 24 | 16 | 12 | 5 | 3 |
| **Joint Width (inches)** | **1/4** | **3/8** | **1/2** | **3/4** | **1** |
| Backer Rod diameter | 3/8 | 1/2 | 3/8 | 1 | 1¼ |
| Backer Rod recess below surface | 1/2 | 1/2 | 1/2 | 3/8 | 1 |
| Sealant Thickness | 1/4 | 1/4 | 1/4 | 3/8 | 1/2 |
| Sealant recess below surface | 1/4 | 1/4 | 1/4 | 1/4 | 1/2 |
| Est. linear feet/US gallon | 275 | 185 | 140 | 60 | 35 |

* For road surfaces scheduled for future grinding, it is imperative that the sealant and backer rod installation accommodates a final sealant depth of approximately 9.35 mm (equivalent to 3/8 inch) below the road surface post-grinding. An extra margin is advised to account for minor surface irregularities at the base and to create space for potential upward displacement of old sealant during summer rehabilitation efforts.

**COLOURS**



Light Grey

1300 SILICONE
info@simseal.com.au
www.simseal.com.au



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