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Application Instructions



DSB 800™ and 900™ SL Silicone

GENERAL: D.S. Brown Silicone sealants are uniquely formulated low modulus sealants produced for use in sealing joints in Portland cement concrete pavements. The sealants are supplied as single component moisture curing materials that provide lasting weather resistant flexible seals. The sealants are supplied in both non-sag and self-leveling (SL) application consistencies.

SEALANT PREPARATION: D.S. Brown Silicone sealants are supplied in a ready-to-use form, with no mixing or any other preparation required to prepare the sealant for use.

JOINT DESIGN AND PREPARATION FOR SEALING: After appropriate curing of the concrete (a minimum of 7 days is recommended) joint reservoirs for the sealant can be cut into the concrete using appropriate concrete sawing procedures and equipment. In "fast track" or high-early-strength concrete mixes, it may be possible to saw and seal the joints sooner than the recommended 7-day minimum for standard concrete mixes. Contact D.S. Brown or your representative for further details.

Reservoir depth for various joint widths is shown in *Table 1*. Joint width should be selected to limit movement due to expansion and contraction to no more than 25% of the joint width. After sawing, immediately flush the joints with water to remove a majority of the saw slurry. After the joints have dried, just prior to applying sealant the remaining residue must be removed by sandblasting. Both joint faces must be adequately sandblasted to remove remaining traces of sawing residue. For effective sandblasting, the nozzle should be positioned within 2 inches (5cm) of the surface being cleaned.

Table 1: Joint Design Recommendations for DSB Silicone Sealants in PCC Pavements Joints

*Joint Width	1/4"	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"
Minimum Sealant Recess	1/4"	1/4"	5/16"	5/16"	3/8"	3/8"	3/8"	1/2"	1/2"	1/2"	1/2"
Backer Rod Diameter ¹	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1-1/4"	1-1/2"	1-1/2"	1-3/4"	2"
Sealant Bead Thickness ^{2,3}	1/4"	1/4"	1/4"	5/16"	3/8"	7/16"	1/2"	1/2"	1/2"	1/2"	1/2"
Minimum Joint Saw/Reservoir Depth	1-1/8"	1-1/4"	1-1/2"	1-3/4"	1-7/8"	2"	2-3/8"	2"	2-7/8"	3-1/8"	3-3/8"
Minimum Backer Rod Depth	1/2"	1/2"	5/8"	11/16"	3/4"	13/16"	7/8"	1"	1"	1"	1"
Estimated Usage Non-Sag	245	149	112	70	51	35	26	23	18	16	15
Estimated Usage Self-leveling (ft/gal)	273	172	130	82	58	41	31	27	22	20	19

1. Backer rod diameter should not be varied from specified dimensions. If larger sizes are used, increased saw depth is needed.

2. Sealant bead thickness can vary ± 25% of design value.

3. Never install DSB Silicone to a depth greater than the joint width (1 to 1).

* Please contact D.S. Brown for additional joint size design recommendations.

After sandblasting, the joint should be thoroughly cleaned using clean compressed air with a minimum pressure of 90 psi. Moisture and oil traps are required on the compressor unit. The object of the above cleaning operations is to provide vertical, intact, and clean bonding surfaces which are free from all contaminants and are dry. Joints should be carefully inspected to assure that an appropriate level of cleanliness has been achieved. This can be accomplished by rubbing your finger along each joint face. If any evidence of dust and contaminants occur, additional sandblasting should be performed until all dust and contaminants are removed. Alternate cleaning methods that accomplish the same level of cleaning as sandblasting may be considered. Contact D.S. Brown for approval of alternate cleaning methods. Non-water absorptive backer rod of the size specified in *Table 1* shall be placed in the joint to the depth listed in *Table 1*. Do not puncture backer rod during installation because damage can create bubbling in sealant.

SEALANT APPLICATION: DSB 900™ SL Silicone sealant is applied to pavement joints using air powered bulk dispensing systems or standard caulking guns. The applicator unit must be free of all residue left from other brands or types of materials to eliminate contamination and assure proper sealant performance. During application, the sealant is dispensed directly from its container through the applicator hose, wand and nozzle and into the prepared joint. The joint should be filled from the bottom up. DSB 900™ SL Silicones are self-leveling and do not require tooling.

DSB 800™ Silicone NS sealants are not self-leveling, and must be tooled to the proper geometry. Tooling must be accomplished before the sealant forms a surface skin of cured material (Tool preferably within 5 minutes after application). Tooling may be accomplished using a variety of tools including sections of baker rod, or other appropriately shaped objects. Tooling should be performed so that the



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sealant is forced against the joint sidewalls and backer rod and so that the sealant forms a recessed concave surface. Minimum recess depths are listed in *Table 1*. If insufficient recess is achieved, the sealant surface may be exposed to vehicle tire contact and abrasion that can cause loss of adhesion. For optimum performance, the width of the sealant bead should be approximately two times the depth. **Sealant bead should be a minimum ¼ inch (.6cm) thick but no greater than ½ inch (1.2cm) thick.**

APPLICATION TEMPERATURES AND WEATHER CONDITIONS: During application, pavement and ambient temperature should be a minimum of 40°F (4°C) and the joints must be completely clean and dry for adhesion to fully develop. Sealing should not occur at temperatures below the dew point due to an increased chance of having moist or damp joints.

SEALANT CURING: After application, DSB Silicone sealant will begin to cure and form a surface skin, generally within 30 minutes. Traffic should be kept off the sealed areas until the sealant is “tack free” as indicated by touching. DSB Silicone will cure approximately 14 days after application to form a strongly bonded, long lasting seal.

Note: Air voids may develop with self-leveling sealant if the moisture content of the pavement and ambient temperature are high. This phenomenon generally occurs when the sealant has been applied to joints in green concrete during hot and humid conditions. Warm ambient temperatures accelerate pavement hydration and the release of moisture vapors. These moisture vapors will migrate through partially cured sealant creating air pockets. When the sealant has obtained a full cure no bubbles will develop. A test section should be performed to determine if conditions are adequate so air voids do not develop. Using a non-sag silicone sealant will greatly reduce the risk of air pocket formation. Contact D.S. Brown for further information.

RESEALING JOINT DESIGN AND PREPARATION FOR SEALING: Old sealant should be removed by any appropriate method. After removal of old sealant, the joint is to be saw cut to an appropriate width to provide clean vertical bonding surfaces which are free from contamination by old sealant. As a general rule, the joint should be sawn to a width that is between 1/8 inch and ¼ inch (3-6mm) wider than the original joint. The recess, sealant bead thickness, backer size, and sawed joint depth shall meet requirements shown in *Table 1* for the joint width used. The sandblasting, cleaning and sealing operations above shall then be followed.

CLEAN UP: Uncured sealant can be removed from equipment and tools with solvents such as naphtha or mineral spirits. All hoses and lines in the application equipment should be flushed immediately after use. Extra DSB Silicone in drums should be covered with the plastic liner to prevent exposure to air and the drums should be closed before storing until the next use.

STORAGE LIFE: Store D.S. Brown Silicone Sealant out of direct sunlight, in a cool, dry location. Sealant should not exceed 90°F (32°C), or be exposed to excessive humidity. Storage life is approximately six months from date of shipment.

SAFETY PRECAUTIONS: Prior to use, please read the D.S. Brown Silicone sealant Material Safety Data Sheet for establishing appropriate practices during use and application.

ADDITIONAL INFORMATION: Additional information regarding these products is available by contacting your distributor or D.S. Brown. This information includes 1) *Product Data Sheets*, 2) *Material Safety Data Sheets*.

* TYPICAL JOINT DESIGNS:



* Drawings Not to Scale