

Expansion Joint Systems

V-Seal Expansion Joint System Installation

Responsibility

- It is the responsibility of installer to understand all of the requirements of this document before attempting to install the V-SEAL system.
 - Failure to perform any of the steps outlined in this document will result in under performance or failure of the V-SEAL product.
 - Failure to perform any of the steps outlined in this document shall void any warranties, either expressed or implied, with regard to the V-SEAL system.
- It is the responsibility of The D.S. Brown Company to provide written instructions with regard to the proper installation and handling of the V-SEAL system.
- It is the responsibility of The D.S. Brown Company to provide technical support, training, and quality control testing as requested by the installer, contractor, or owner of the project.
 - Technical support, training, and quality control testing is available for a fee.

Product Description

- The seal component is an elastomeric diaphragm supplied in a continuous length. It is available for movements up to 5 inches.
- The conditioning agent is a solvent based conditioner that activates the surface of the seal to create a bond with the epoxy bonding agent. It is supplied in 1-quart bottles.

- The epoxy bonding agent is supplied in 600mL dual cartridges. One cartridge of epoxy is capable of bonding 6 joint feet of seal.
 - Mixing tip for dual cartridges is included with the shipment.
- Closed cell polyethylene backer rod is included for setting proper joint depth for the V-SEAL system. For V-300 Seal, 2" backer rod and for V-400 seal, 3" backer rod is to be used.
 - Backer rod diameter should be slightly larger than joint opening.

Product Safety

- The epoxy bonding agent is corrosive. Please review each component's SDS before installation to fully understand the safety concerns related to this system. Failure to do so could result in serious injury or death.
- The following guidelines are recommendations consistent with the SDS literature. These recommendations are not intended to supersede or replace any existing requirements set forth by local laws or policies.
 - Use in a well-ventilated area, using good industrial hygiene practices. Avoid contact with eyes, skin, and clothing and wear proper PPE.

Personal Protective Equipment (PPE)

- Use approved respiratory protection equipment when airborne exposure is above the occupational exposure limits.
 - Consult SDS for exposure limits.
 - Operators shall be properly trained in the use of a respirator.
 - OSHA's Respiratory Protection Standard sets forth requirements for a facility Respiratory Protection Program (29 CFR 1910.134).
- Corrosive-resistant chemical gloves (e.g., nitrile)
- Eye protection consisting of safety glasses with side

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shields or tightly sealed goggles

- Skin protection consisting of impervious clothing, including but not limited to the use of an apron; use long sleeves at a minimum.
- Workers not wearing the correct PPE should not enter the application area.
- In the event of an over-exposure to the product, see section 4 of the SDS for First Aid Measures.

Material Storage

- The epoxy bonding agent and conditioner should be stored in a dry environment within a temperature range of 60°F to 80°F. Extremes of temperature beyond this range may result in crystallization or polymerization of the materials and render them unsuitable for use.
- It is recommended that the epoxy bonding agent be used within one year of manufacture. Beyond one year, the material should be checked to ensure suitability for the application.

Equipment

- Equipment requirements for the installation of the V-SEAL system are as follows:
 - Wire brush
 - Sandblaster
 - Dual cartridge applicator gun, 600mL
 - Rags
 - Acetone or denatured alcohol for removal of conditioner
 - Duct tape or other suitable masking material
 - Caulking spatula

Pre-Application Inspection

- Visual Inspection of the expansion joint is the first task to be completed by the installer.
- New concrete shall have a minimum of 14 days of cure.
 - Moisture content of the concrete shall be

below 5%.

- All formwork must be removed.
- Substrate temperature and air temperature must be above 40°F and rising
 - The V-SEAL system can be installed at temperatures below 40° but longer cure times for the epoxy bonding agent will be required.
- In applications where the V-SEAL system will be replacing an existing seal system the old system must be completely removed before installation of the V-SEAL system.
 - Joint components, such as armor angle or strip seal channels may remain in place, but must be inspected to ensure that they are soundly secured in concrete.
 - Steel profiles should be grit blasted to an SSP6 finish or better in the bonding area.
- Loose, contaminated, weak, spalled, deteriorated and/or delaminated concrete must be removed to sound concrete.
 - Any spalls, voids, or structural cracking at joint interfaces must be repaired.
 - Concrete should be grit blasted to a finish between coarse sandpaper and a ¼" profile.
- Joint openings must be free of all contaminants, loose materials, dry and free of frost.
 - Epoxy adhesive will not bond to water.

Installation

- Before starting installation take time to ensure that all materials are available and ready for use, including an adequate amount of personnel to complete the installation.
- Mask off joint edges to facilitate easier cleanup.
- Install backer rod to a depth that will allow the seal to install deep enough in the joint opening so that at full

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closure the seal is 1/4" below the deck surface.

- With a clean rag, apply conditioner to both sides of the seal in the bonding area (Fig. 1).
- Roughen the bonding area with a wire brush to work the conditioner into the seal.
- After 5 minutes remove the conditioner using a clean rag and denatured alcohol or acetone.
- Apply a 3/8" bead of epoxy on both sides of the backer rod against the joint wall (Fig. 2).
- Install the V-SEAL by pressing the lug portion of the seal into the bead of epoxy on both sides of the joint.
- Apply a final bead of epoxy along the top of the lugs.
 - The epoxy should be filled to the top adhesive groove.
- **Excess epoxy should be removed before cure. No epoxy should be present on the smooth top surface of the seal.**

Clean Up

- Clean all uncured epoxy off of the top portion of the seal.
- Uncured epoxy is removed as you would spilled resin. Scrape as much material as you can from the surface using a stiff metal or plastic scraper. Clean the residue with lacquer thinner, acetone, or alcohol placed on a clean rag.
 - Follow safety warnings on solvents, and provide adequate ventilation.
- Remove all masking materials.
- Unused epoxy and conditioner should be disposed of according to local rules and regulations.
 - Consult SDS for proper disposal methods.

Figure 1

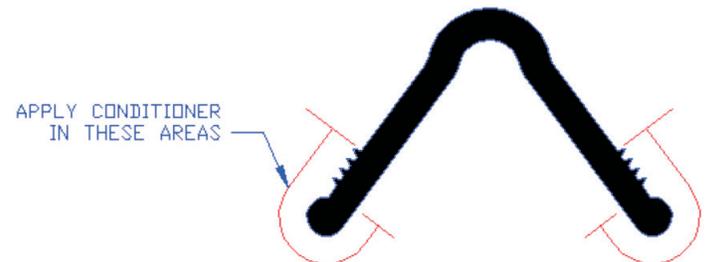


Fig. 1 – Definition of Bonding Area

Figure 2

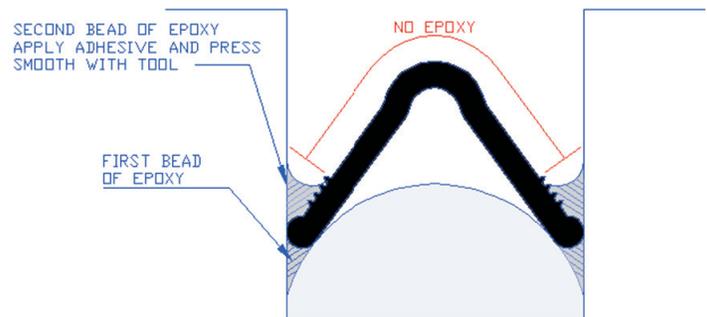


Fig. 2 – Proper Installation