

### Expansion Joint Systems

## Work Instructions for Making Upturns with V-Seal System

### 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 underperformance 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 V-Epoxy-R. It is supplied in 1-quart bottles.
- The V-Epoxy-R is supplied in 600mL dual cartridges. One cartridge of V-Epoxy-R 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 V-Epoxy-R 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)**

- Corrosive-resistant chemical gloves (e.g., nitrile)
- Eye protection consisting of safety glasses with side 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 V-Epoxy-R 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 V-Epoxy-R 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
  - Sharp knife or scissors
  - Straight edge
  - Protractor
  - Sika 1A or Sika 15LM sealant

### **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.
- Identify locations for upturns and prepare the upturn splices before installing the full length of seal.
- Upturns should be a minimum of 6 inches in length. Materials cut for upturn pieces should be longer than the minimum to facilitate the cuts.
- Upturns less than 30 degrees do not require cutting. The upturn can be accomplished by bending the seal up.
  - The minimum distance to accomplish a 30 degree upturn is 12 inches.
  - Use backer rod to form the slope. The seal should be installed as in Figure 1. Install seal per the standard installation instructions.

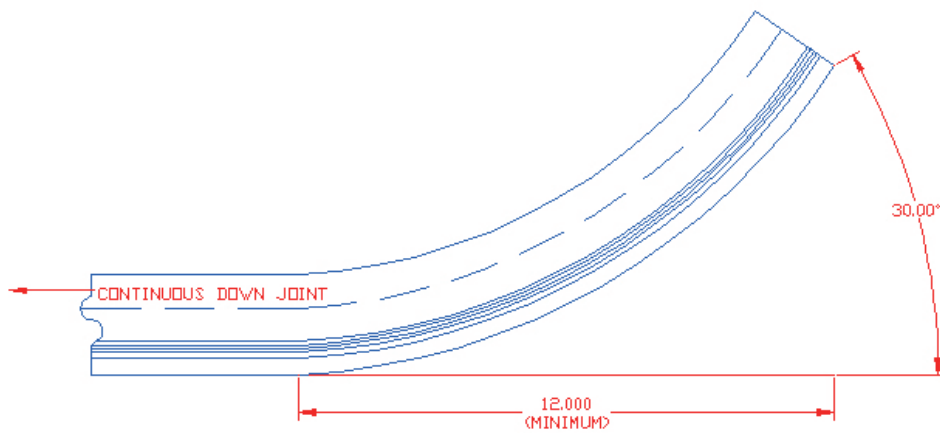


Figure 1 – Installed seal with 30° upturn

- Upturns greater than 30 degrees require that the seal be cut and spliced at the upturn.
- Upturns for 30° to 60° require the following cuts to be made. Make sure that the upturn cuts are made before installing the main run of joint seal.
  - This piece will be installed last, but needs to be cut before the seal is installed.
  - Cut the upturn section as shown in Figure 2.
    - Cut #1 should be a 45° cut through the seal as it is folded in half.
    - Cut #2 should be at 45° across cut #1. They should intersect approximately 1/8" above the top glue line in a 90° angle.
    - Invert the seal to make cut #3. This cut should be across the dip in the seal, approximately 1 inch wide.

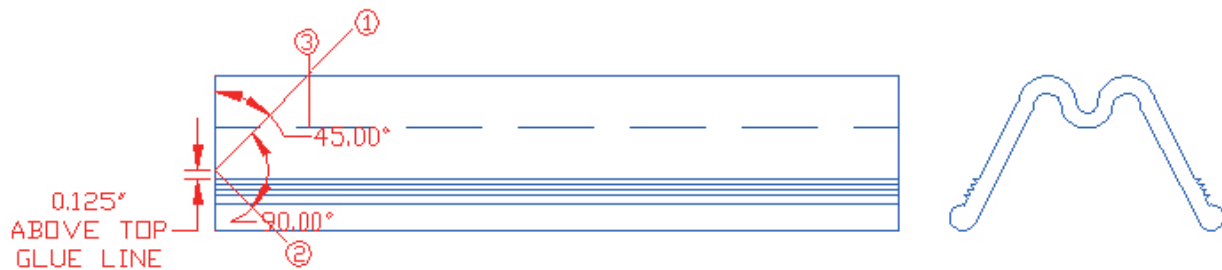


Figure 2 – Cuts required to make a 30°–60° upturn

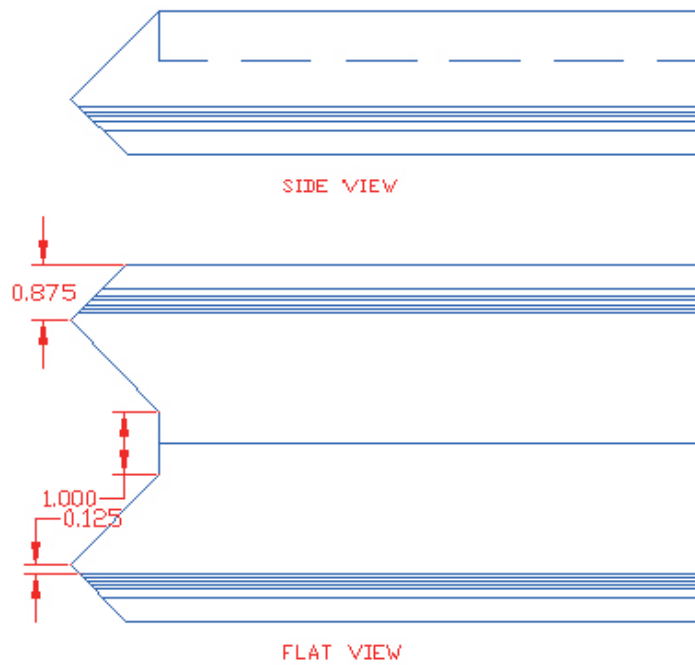


Figure 3 – Side & Top view of cut upturn

- After the upturn cuts have been completed install the main joint seal per the installation instructions.
  - Install the seal a minimum of 6 inches past the upturn.
- While the V-Epoxy-R is still wet, install the upturns at the specified angle as shown in Figure 4.
  - Make sure to press the upturn section into the wet V-Epoxy-R.
  - Avoid using excess V-Epoxy-R on the upturns as it will run down into the corners.
- Seal all edges of the splice with Sika 15LM or Sika 1A sealant.

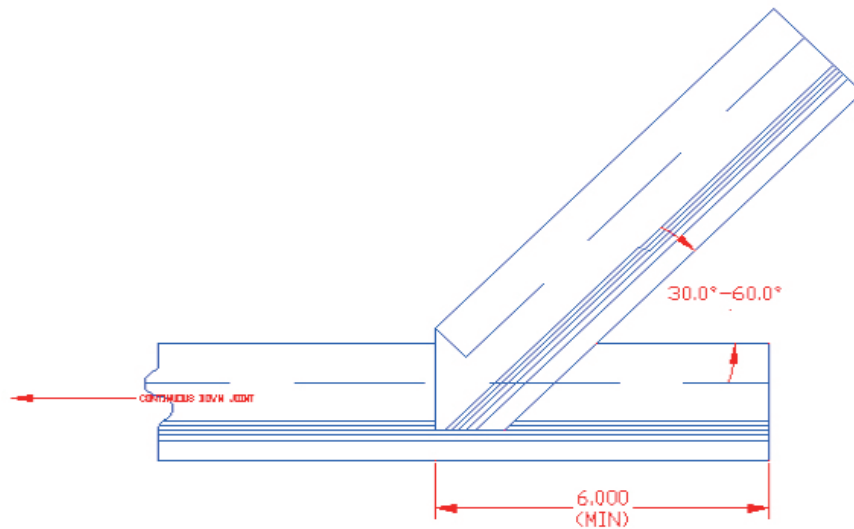


Figure 4 – Installed upturn

- Upturns greater than 60° require the following cuts to be made. Make sure that all upturns are cut before installing the main run of joint seal.
  - This piece will be installed last, but needs to be cut before the seal is installed.
  - Cut the upturn section as shown in Figure 5.
    - Remove the lug on both sides of the seal 2.25 inches from the end.
    - Make two longitudinal cuts ½ inch from the center of the seal, 2.25 inches long.
    - Remove ¼ inch from the end of the seal in the areas shown.

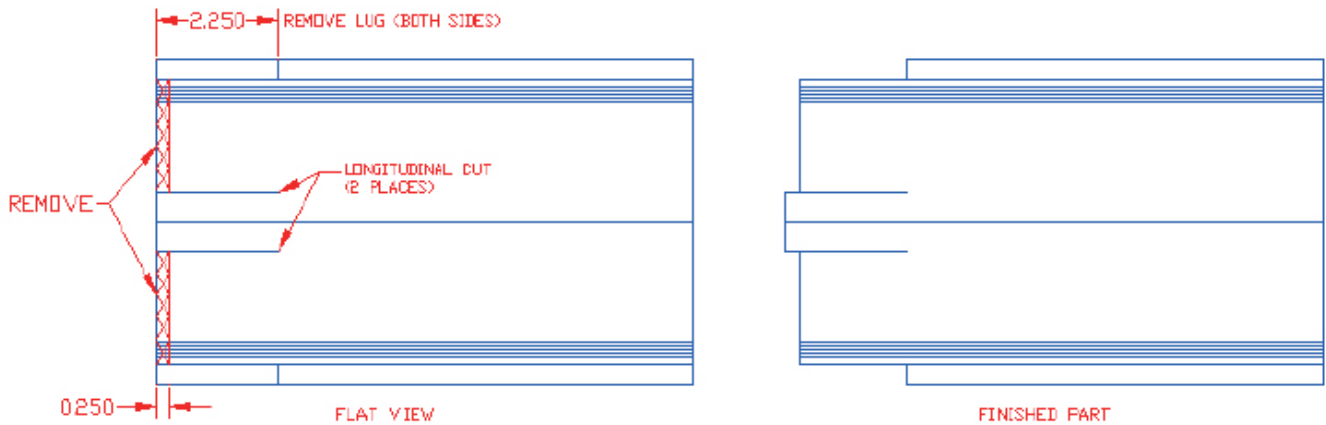


Figure 5 – Cuts required for 90° upturn

- After the upturn cuts have been completed, install the main joint seal per the installation instructions.
  - Install the seal a minimum of 6 inches past the upturn.
- While the V-Epoxy-R is still wet, install the upturns at the specified angle as shown in Figure 6.
  - Make sure to press the upturn section into the wet V-Epoxy-R.
  - Avoid using excess V-Epoxy-R on the upturns as it will run down into the corners.
- Seal all edges of the splice with Sika 15LM or Sika 1A sealant.

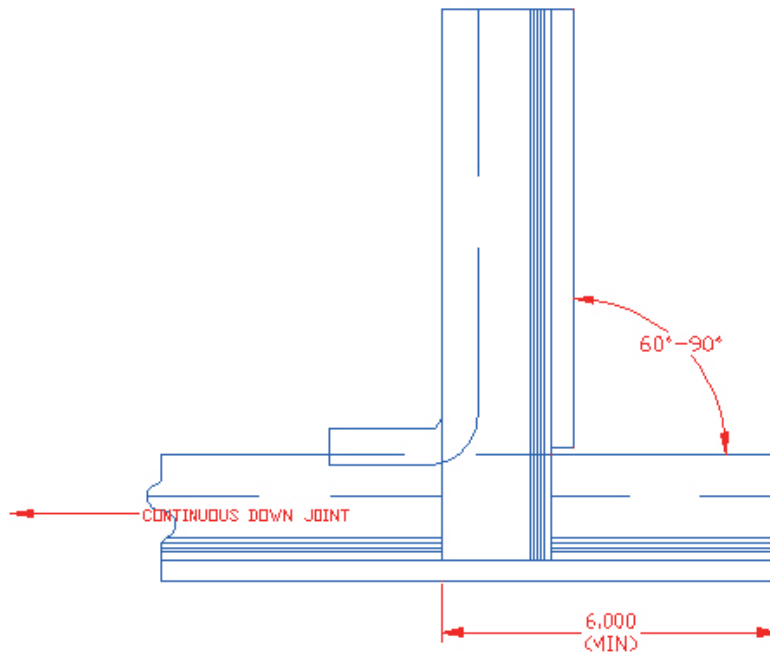


Figure 6 – Installed 90° upturn

## Clean Up

- Clean all uncured V-Epoxy-R 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 V-Epoxy-R and conditioner should be disposed of according to local rules and regulations.
  - Consult SDS for proper disposal methods.