

## **Installation Procedure for the Two-Part Epoxy PV- Series Expansion Joint System**

### **I) Pre-Installation Inspection**

- 1) Prior to installation of the expansion joint profile, the installer should visit the site and notify the proper authority, in writing, of any conditions (done under other sections) that might be detrimental to the installation or performance of the expansion joint. Coordinate the installation with related work. Detrimental conditions are determined to be:
  - a) Irregularities in joint opening width exceeding 1/8"
  - b) Unsound concrete in joint opening side walls, and/or substrate above and below the joint stem opening.
  - c) Moisture, oil, or other contaminants are not allowed.
  - d) Migrating cracks to the edge of the joint opening
  - e) Construction joints intersecting perpendicular to the joint opening (contact EMS for detailing)

### **II) Preparation of Joint Interfaces**

- 1) All surfaces to receive the compression seal profile should be dry, clean, and sound concrete, free of loose, cracked, delaminated, or spalled sections. Repair any sections that do not meet these criteria. The surfaces to receive the seal profile should be sandblasted to exposed aggregate. Sandblasting will increase the surface area and enhance the bond capacity of the adhesive. The sandblast process also will remove all laitance and other bond-inhibiting contaminants.
- 2) Form or saw cut the groove/joint opening into the concrete to the recommended depth. Assure that the interfaces, whether concrete or steel, run parallel to each other for the length of the run. Walls should be plumb to the top surface of the concrete and should be spaced at a consistent width across the joint. Unsound concrete must be removed and repaired.
- 3) Clean dirt, stones, and standing water from the joint opening. Use a stiff-bristled brush and compressed air to remove all dust. Sandblast the vertical walls of the groove to remove laitance and contaminants, and increase bond area for the adhesive.

### **III) Installation of the Seal**

- 1) Immediately prior to installation, the interface walls should be blown out again.
- 2) Uncoil the seal and allow it to relax. Apply the conditioning agent to the sidewalls of the seal. Wire-brush the sidewalls to abrade the surfaces to receive the adhesive. When done properly, the shine of the surfaces will be removed. A roughened, dull, tacky finish will be obtained. Re-apply the conditioning agent, scrubbing vigorously into the ribs using a stiff nylon brush to clean out any residue, which may impede the bond. The last step of the preparation process is a rinse of the prepared sides of the profile. Wipe prepared sidewalls with alcohol soaked rags. This will remove the last remnants of the cleaning process. Dry with clean cloth rags.
- 3) Mix the adhesive to the manufacturer's specifications; 1:1 ratio\*. Apply the adhesive to the joint interfaces. Draw a vacuum on the seal to match the width of the joint stem opening. Neoprene sheet material and profile adhesive are provided to the contractor. The sheet material is used to make an end cap closure cover on one end of the seal, and the other end is left open for the drawing of the vacuum. Apply the adhesive to the sidewall ribs of the profile using a trowel or putty knife as the seal is installed. The sidewall must be completely covered with a thin coat of adhesive.
- 4) Insert the profile in the gap to the proper depth. Look along the top edge to assure proper adhesive coverage, filling any voids. Excess adhesive on top of the seal area should be removed with a trowel or putty knife. Clean any

excess drips or puddles of adhesive from the top of the seal. Remove any excess adhesive using organic solvents and a clean cloth rag. [Alcohol]

- 5) Allow the adhesive to cure over night @ 70°. Maximum bond strength (at room temperature) is usually achieved within twenty-four hours.

#### IV) **Field Quality Control**

- 1) Work that does not conform to the specified requirements should be corrected and/or replaced as directed by the manufacturer and engineer.
- 2) Manufacturer/installer should supply guaranty/warranty to the owner authority, as required.

#### V) **Recommended Equipment List**

- 1) Electric grinder – 4” size wheel
- 2) Soft wire wheel - 4” or 6” diameter
- 3) Hand wire brushes
- 4) Clean cloth rags
- 5) Duct tape
- 6) 8” sharp knife – hack saw
- 7) Miter box
- 8) Putty knives & paint brushes (disposable)
- 9) Shop Vacuum (6hp)

#### VI) **Adhesive Mixing Instructions**

- 1) Open the epoxies part “A” and “B”.
- 2) Remove contents of containers onto a 4’ square piece of cardboard or plywood. The mix ratio is 1:1 for partial batches.
- 3) Blend the two components with a margin trowel or wide putty knife. The black and gray colors should be thoroughly blended to make a rich black color, as there should be no streaks from partially mixed components.
- 4) After material is thoroughly mixed, portions of the batch should be distributed to other workers installing the product.
- 5) AS WITH ANY EPOXY, DO NOT ALLOW THE MIXED EPOXY ADHESIVE TO SET IN A PILE OR CONFINED CONTAINER SUCH AS A PAIL. THIS WILL ACCELERATE THE CURE AND MATERIAL WILL PREMATURELY HARDEN DUE TO THE THERMAL REACTION OF THE TWO COMPONENTS.