

## SECTION I – General

### 1.01 Summary

A. Section Includes: Furnishing of all materials, labor and equipment necessary for the surface preparation and the installation of the sealed expansion joints in accordance with the details shown on the plans and these specifications. The designs for the deck condition utilize an extruded compression seal profile bonded in place with a strong, two-component structural epoxy adhesive. The design is arranged to flex in response to joint movement and to seal against the intrusion of deck drainage.

B. Related Sections:

1. Section 03300 - Cast-in-place concrete
2. Section 07900 - Waterproofing, including sealants and coatings

### 1.02 References

A. American Society for Testing and Materials (ASTM):

1. ASTM D1850
2. ASTM D3542
3. ASTM D2000

### 1.03 Quality Assurance

- A. Application Qualifications: The manufacturer of the expansion joint seal shall provide a technical qualified representative who will train the installer on the proper techniques for installing the seal. Each installation shall be registered and approved by the manufacturer.
- B. For the purpose of designating type and quality for work of this section, drawings and specifications are based on products manufactured or furnished by the manufacturer listed in Section II of this section. No other products will be considered for use.
- C. Execute work of this section by skilled, trained applicators conforming to installation methods and procedures in accordance with the manufacturer's printed instructions. The applicator must be licensed by the manufacturer or approved by him. In the latter case, the manufacturer's technical representative must be present for the installation of three (3) joint lengths - equaling no less than 100 LF of joint.

- D. Do not proceed with the work until surfaces to receive the expansion joints have been inspected by the engineer and approved by the manufacturer. Correct any deficiencies in the surfaces to receive the expansion joints as recommended by the manufacturer and engineer.
- E. Do not proceed with the work when temperatures are below 45°F or expected to fall below 45°F. Do not proceed with the work when temperatures are above 90°F unless approved in writing by the manufacturer.
- F. Manufacturer shall have a minimum of five years experience specializing in expansion joint systems for similar applications.

### 1.04 Submittals

- A. Submit in accordance with Section \_\_\_\_\_, unless otherwise indicated.
- B. Product Data: Manufacturer's specifications and technical data including the following:
1. Manufacturer's installation instructions, specially written for this project
  2. Certified test reports indicating compliance with performance requirements specified herein
- C. Shop Drawings: Indicate dimensioning, membrane size and model number, general construction, specific modifications, installation procedures - specifically the mixing and application of the structural adhesive - plus the following specific requirements:
1. Temperature/Adjustment Table indicating joint width at various temperatures
  2. Dimensions based on anticipated movement for the joint location, as supplied by the engineer
- D. Quality Control Submittals:
1. Statement of Qualifications
  2. Design Data
  3. Test Reports
- E. Contract Close-out Submittals: In accordance with Section \_\_\_\_\_, submit:
1. Operating and Maintenance Manuals
  2. Special Warranties

### 1.05 Delivery, Storage and Handling

- A. Packing and Shipping: Deliver products in original unopened packaging with labels and seals unbroken.
- B. Storage and Protection: Store materials in accordance with manufacturer's recommendations in area protected from weather, moisture, open flame and sparks. Adhesive must be stored at temperatures between 40° and 90°F.

### 1.06 Guarantee - Warranty

- A. Warranty shall state that the material and installation of the joint system complies with requirements of the contract documents and the manufacturer's printed instructions for installing the expansion joints.
- B. Guarantee shall state the responsibility of the installer/manufacturer to stand behind the installed system for the warranty period indicated and for the conditions listed below:
1. Leakage of the parking deck system, including points in transition
  2. Abrasion and wear of the materials resulting from normal traffic loading

## SECTION II – Products

### 2.01 Manufacturers

J & JP Series Sealing Systems shall be designated as the following:

1. J or JP Series Sealing Systems seal profiles as supplied by:  
 The D.S. Brown Company  
 300 East Cherry Street  
 North Baltimore, Ohio 45872  
 Phone: (419) 257-3561 Fax: (419) 257-2200
2. Structural adhesive as supplied by:  
 The D.S. Brown Company  
 300 East Cherry Street  
 North Baltimore, Ohio 45872  
 Phone: (419) 257-3561 Fax: (419) 257-2200

### 2.02 Components and Materials

- A. Compression Seal Profile: The extruded profile shall be made from poly-chloroprene (neoprene). The material shall have a minimum 2,000-psi tensile strength requirement and 225% elongation at break. The profile shall be structured so that its cross section features a multi-celled web design that exerts a constant pressure to the



joint wall interfaces.

- B. Structural Adhesive: The adhesive is a high-strength, 2-part modified epoxy-based material. It is 100% reactive and will develop a strong bond in approximately 8-10 hours at room temperature. Full cure is to develop within 24 hours @ 70°F. It shall have the following properties:

Typical Physical Property	Resin Part A	Hardener Part B
Appearance	Gray	Black paste
Viscosity (cps)*	300,000-700,000	300,000-700,000
Non-Volatile Content**	100% Reactive	100% Reactive
Weight/gallon	2.2 lb. +/-	2.2 lb. +/-
Flash Point	177°F	No flash point
Shelf Life (from date of shipment, unopened container @ 40°F to 80°F)	1 Year	1 Year

Note the following: (\*)The resin part is measured using a Brookfield HBF Viscometer at 77° +/- 2F with a T-bar "D" spindle at 5rpm with Heliopath stand (undisturbed sample). (\*\*) This is not routinely measured. Test results may vary with temperature. Consult The D.S. Brown Company for details.

## SECTION III – Execution

### 3.01 Inspection

Prior to installation of the expansion joint profile, the installer shall 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.

### 3.02 Preparation of Surfaces of Blockout Recess in Deck

Form or saw cut the groove/joint opening into the concrete to the recommended depth. Ensure that the interfaces, whether concrete or steel, run parallel to each other for the length of the run. Walls should be plumb and should be spaced at a consistent width across the joint. Unsound concrete shall be removed and repaired. Cracks also shall be repaired.

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. Immediately prior to installation, the interface walls should be blown out.

### 3.03 Installation of the Seal Profile

Uncoil the seal and allow it to relax. Apply the conditioning agent to the sidewalls of the seal. Wire-brush the sides of the joint seal to abrade the surfaces that receive the epoxy adhesive. Lightly sandblasting with Black Beauty media

can also be used as a substitute to wire brushing. Care must be taken so that the seal is not damaged during this operation. When done properly, the shine of the surfaces will be removed and roughened and a dull, tack finish will be obtained. Then, apply the rubbing/denatured alcohol, scrubbing vigorously into the ribs using a stiff nylon brush or clean alcohol-soaked rags. This will remove any residue which may impede the bond. Finally, dry with clean cloth rags.

Mix the adhesive (see mixing steps in next column) to the manufacturer's specifications; 1:1 ratio. Apply the adhesive to the joint interfaces. Apply the adhesive to the sidewall ribs of the profile using a trowel or putty knife as the seal is installed. The ribs must be completely filled with adhesive.

Insert the profile in the gap to the proper depth. Check the ribs for proper adhesive coverage. Fill any voids. Excess adhesive above the ribbed 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.

Allow the adhesive to cure 24 hours (at temperature 70°F).

Maximum bond strength (at room temperature) is usually achieved within 48 hours.

**Adhesive Mixing Instructions:** Open the epoxies part "A" and "B". 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; there should be no streaks from partially mixed components. After material is thoroughly mixed, portions of the batch should be distributed to other workers installing the product. **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.**

#### 3.04 Field Quality Control

- A. Work that does not conform to the specified requirements shall be corrected and/or replaced as directed by the manufacturer and engineer.
- B. Manufacturer/installer shall supply guarantee/warranty to the owner authority, as required.