

## SECTION 03 15 23

## CLEAN AND SEAL EXPANSION JOINTS

## PART 1 - GENERAL

## 1.1 SCOPE

- A. This specification section governs the maintenance of sealed joints including the following:
  - 1. Removal of existing joint seal material and debris.
  - 2. Fabricating and installing sealed joints.

## 1.2 RELATED SECTIONS

- A. Section 03 01 30 – Cast-in-Place Concrete Maintenance
- B. Section 03 01 33 – Bridge Deck Methacrylate Resin Treatment

## 1.3 REFERENCED CODES AND STANDARDS

- A. Caltrans Standard Specifications dated 2018 and Revised Standard Specifications dated 4/16/2021

## 1.4 SUBMITTALS

The Contractor shall submit the following to the City Representative for review prior to commencing work on expansion joints in accordance with Division 1:

- A. Product Data: For each type of sealant.
  - 1. Include construction details, material descriptions, chemical compositions, physical properties, test data, and mixing, preparation, and application instructions.
- B. A work plan for cleaning expansion joints including details for preventing material, equipment, or debris from falling onto pedestrians, bicyclists and vehicle traffic below the bridge.
- C. Field quality-control reports.
- D. Quality-Control Program: Submit before work begins.

## 1.5 QUALITY ASSURANCE

- A. Quality-Control Program: Prepare a written plan for cleaning and sealing expansion joints to systematically demonstrate the ability of personnel to properly perform the work, including each phase or process, protection of surrounding materials during operations, and control of debris and runoff during the Work. Describe in detail materials, methods, equipment, and sequence of operations to be used for each phase of the Work.

## 1.6 DELIVERY, STORAGE AND HANDLING

- A. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.

## 1.7 FIELD CONDITIONS

- A. Joint surfaces must be surface dry when seals are placed.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Joint Sealant:
  - 1. The sealant must be a 2-component silicone type that withstands a  $\pm 50$  percent movement.
  - 2. The sealant must comply with the requirements shown in the following table:

Quality Characteristic	Test Method	Requirement
Modulus at 150 percent elongation (psi)	California Test 435	8 - 75
Recovery (inches, max)	California Test 435	21/32
Notch test	California Test 435	Notched or loss of bond, $\frac{1}{4}$ inch max
Water resistance	California Test 435	Notched or loss of bond, $\frac{1}{4}$ inch max
Ultraviolet exposure	California Test 435	No more than slight cracking or checking
Cone penetration (mm)	California Test 435	4.5 – 12.0

- 3. The sealant must be self-leveling and cure rapidly enough to not flow on grades up to 15 percent.
  - 4. Label sealant containers or provide identification tickets for tanks of 2-component material. Include the following:
    - a. Material designation
    - b. Lot number
    - c. Manufacturer's name and instructions for use
    - d. Dates of manufacture, packing, and expiration
- B. Polyethylene foam or rod stock for retaining sealant must be commercial quality with a continuous, impervious glazed surface.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Comply with manufacturer's written instructions for surface preparation and product application.
  - 1. Do not use material that has expired unless it is retested and authorized.
  - 2. Do not use liquid components that have been exposed to air for more than 24 hours.

### 3.2 CLEAN EXPANSION JOINTS

- A. Remove all existing seal material, dirt, debris, and joint filler by methods that do not damage existing concrete surfaces.
- B. Joint size shall be verified after the joint has been cleaned.
- C. The Contractor shall take necessary precautions to ensure that material removed from expansion joints does not fall onto pedestrians, bicyclists and vehicle traffic or private property.
- D. All joint damage shall be repaired as directed by the City Representative. Damage at joints shall be repaired in conformance with the provisions of 03 01 30 "Cast-in-Place Concrete Maintenance".
- E. Materials removed from the expansion joint, except for surface dust, shall be recovered and disposed of away from the site in conformance with applicable rules and regulations.

### 3.3 SEALING JOINTS

- A. Joints shall be sealed in conformance with the details shown on the plans and these specifications.
- B. When ordered by the City Representative, a joint seal larger than called for by the Movement Rating shown on the plans must be furnished and installed.
- C. Saw cutting of grooves will not be required at existing joints that are to be sealed with Type A joint seal unless ordered by the Engineer.
- D. Do not use sealant or adhesive that has skinned over or cannot be redispersed by hand stirring.
- E. Abrasive blast clean joints and remove foreign material with high-pressure air immediately before installing seals. Protect waterstops during cleaning.
- F. Joint surfaces must be surface dry when seals are placed.
- G. Place the sealant using equipment that mixes and extrudes the sealant into the joint. The equipment and the sealant placement must be as recommended by the sealant manufacturer.

END OF SECTION