

SECTION 07921

**SEALING EXISTING CONCRETE
SLOPE PROTECTION JOINTS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Seal existing concrete slope protection joints.

1.2 RELATED SECTIONS

- A. Section 03055: Portland Cement Concrete.
- B. Section 03152: Concrete Joint Control.

1.3 REFERENCES

- A. ASTM C 578: Rigid, Cellular Polystyrene Thermal Insulation.
- B. ASTM D 412: Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.

1.4 CERTIFICATES

- A. Furnish the certificates of compliance and sealant material test results for each lot of material supplied.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Rigid Plastic Foam
 - 1. Type 9, density of 2 lbs/ft³.
 - 2. ASTM C 578.

- B. Backer Rod: Refer to Section 03152, Part 2.
- C. Portland Cement Concrete
 - 1. Refer to Section 03055, Part 2.
 - 2. Maximum aggregate size of 3/4 inch.
- D. Cement: Refer to Section 03055, Part 2.
- E. Sealant Material with the following characteristics:
 - 1. Applied cold and curable under field conditions.
 - 2. Polyurethane based, gun grade.
 - 3. Elastomer, non-sag seal.
 - 4. Bonds tightly to concrete sides and joints.
 - 5. Physical properties when cured 21 days at 75 degrees F as in Table 1.

Table 1

Property	Value	Method
Modulus of elasticity at 100 percent elongation	132 psi	ASTM D 412
Hardness	40 ± 5	Shore A
Elongation (at break)	450 percent	ASTM D 412
Recovery	Greater than 90 percent	
Tensile strength	190 psi	ASTM D 412
Adhesive in peel	20 lbs/inch	
Adhesive Loss	0 percent	
Service Range	- 40 degrees F to 150 degrees F	
Initial Cure, Tack Free (depending on temperature and humidity)	6 to 8 hours	
Final Cure	5 to 8 days	
Staining Characteristics	Non-staining	

PART 3 EXECUTION

3.1 JOINT LOCATIONS

- A. The Engineer must mark the existing joints and the joint limits that require sealing according to the “Typical Vertical Joint Sealing Detail,” and “Typical Contraction Joint Sealing Detail” in the plans.

3.2 PREPARING JOINT AND CRACKS

- A. Clean the existing joint material from the designated joints. Keep concrete surfaces in the joints clean and dry at the time the backing rod and sealant are placed.
- B. Remove curing compounds, oil, grease, dirt, and any other foreign materials from the joint concrete surfaces by sandblasting.

3.3 SEALING HORIZONTAL JOINTS AND CRACKS

- A. Seal the horizontal joints and cracks field marked by the Engineer.
- B. Use a backer rod when the joint or crack width is greater than 1/2 inch.
- C. Start at one side and proceed to the other side on horizontal grooves (cracks or joints).

3.4 SEALING VERTICAL JOINTS AND CRACKS

- A. Seal the vertical joints and cracks field marked by the Engineer.
- B. Start from top to bottom on vertical grooves (cracks or joints.)

3.5 SEALING ALONG WINGWALLS AND BACKWALL JOINTS

- A. Place the rigid plastic foam material (styrofoam) against the surface of all structural members before placing the joint sealant.
- B. Anchor the rigid plastic foam in place with a compatible adhesive.

- C. Recess the styrofoam 3/8 inch in the joints so a groove is formed above the styrofoam filler.
- D. Fill the groove above the styrofoam with sealant so the joint is sealed over completely.

3.6 PLACING SEALANT

- A. Place with a hand- or power-operated caulking gun.
- B. Tool the sealant using a concave pointing tool with soap solution.
- C. Do not place sealant unless temperature is at least 50 degrees F and rising.

3.7 LARGE JOINT AND CRACK SEPARATION

- A. Reestablish the original joint design by filling vertical or horizontal joints with concrete when joint widths are greater than 2 inches.
- B. Fill vertical or horizontal cracks with concrete when crack widths are greater than 2 inches.

END OF SECTION