

SECTION 03311
JOINT CLOSURE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Remove asphalt surfacing, deck concrete, joint armor steel, and reinforcing steel at existing joint area; place new reinforcing steel; and recast joint area.

1.2 RELATED SECTIONS

- A. Section 03055: Portland Cement Concrete
- B. Section 03152: Concrete Joint Control
- C. Section 03211: Reinforcing Steel and Welded Wire
- D. Section 03310: Structural Concrete

1.3 REFERENCES

- A. ASTM D 412: Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension

PART 2 PRODUCTS

2.1 MATERIALS

- A. Portland Cement Concrete: Class AA (AE). Refer to Section 03055.
- B. Reinforcing Steel (Coated): Refer to Section 03211.
- C. Galvanized Sheet Metal: 16 gage, 0.06 inch thick.
- D. Rigid Plastic Foam: Type 9, density of 2 lbs/ft³.
- E. Backer Rod: Refer to Section 03152.

2.2 SEALANT MATERIAL

- A. With the following characteristics:
1. Applied cold and curable under field conditions
 2. Polyurethane based, gun grade
 3. Elastomeric, non-sag seal
 4. Bonds tightly to concrete sides and joints
- B. Physical properties when cured 21 days at 73 degrees F. Refer to the following table.

Table 1

Property	Value	Method
Modulus of elasticity of 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 degree F to 150 degrees F	
Initial cure, tack free, (depending on temperature and humidity)	6 to 8 hours	
Final cure	5 to 8 hours	
Staining Characteristics	Non-staining	

PART 3 EXECUTION

3.1 PREPARATION

- A. Asphalt Removal:
1. Make saw cuts full depth, parallel to existing joints to define removal area.
 2. Do not damage concrete deck when removing asphalt surfacing.

- B. Concrete Saw Cuts:
 - 1. Saw Cut in concrete deck 1 inch deep and parallel to existing joints to define the work area.
 - 2. Note that the length of the joint closure is the width of the bridge deck adjusted for the skew of the individual structure.
- C. Prevent debris from falling into streams, pedestrian areas, traffic areas, and onto railroad tracks.

3.2 REMOVE CONCRETE

- A. Use jackhammer method to remove existing concrete.
 - 1. Partial Depth Removal of Concrete Slab: Use 30-pound class jack hammers or smaller.
 - 2. Full Depth Removal of Concrete Slab: Use 90-pound class hand operated jack hammers or smaller.
 - 3. Operate jack hammers at an angle greater than 45 degrees as measured from the deck surface.
- B. Remove parapet concrete in the closure area. Where an existing electrical conduit is encountered, protect the conduit from damage.

3.3 REINFORCING STEEL

- A. Existing Reinforcing Steel
 - 1. Refer to the design plans for specific directions.
 - 2. Thoroughly clean steel that remains in place of all corrosion and adhering materials by sandblasting.
- B. New Reinforcing Steel: Place coated reinforcing steel after sandblasting operations are complete.

3.4 PLACE CONCRETE

- A. Refer to Section 03055 and Section 03310.
- B. Clean existing concrete and steel surfaces. Dampen before placing concrete.
- C. Restrict traffic on the joint closure areas until the concrete has reached a compressive strength of 3,000 psi. Engineer may take additional concrete samples.

END OF SECTION