SP- 150294
(New)

SPECIAL PROVISIONS
FOR
ULTRA HIGH PERFORMANCE CONCRETE WATER INTEGRITY TEST

Jackson County
BRFN-052-1(97)--39-49

Effective Date
July 18, 2017

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150294.01 DESCRIPTION.

A. Furnish all materials, tools, and labor necessary for the performance of all work to water integrity test the Ultra High Performance Concrete (UHPC) Joints.

B. Provide submittals to the Engineer in electronic format, in accordance with Article 1105.03 of the Standard Specifications. The proposed schedule for watertight integrity testing of completed UHPC Joint requires written approval from the Engineer.

150294.02 MATERIALS.

A. High weight methyl methacrylate (for repair of leaking joints).

1. The high molecular weight methacrylate (HMWM) resin shall be low viscosity and non-fuming. Acceptance is based on the manufacturer certifying that it conforms to the following requirements and the Contractor forwarding the certification to the Engineer:

a.	Viscosity	Less than 25 cps when measured according to ASTM D2849
b.	Density	Greater than 8.4 lb./gal. @ 77°F
c.	Flash point	Greater than 200°F
d.	Vapor pressure	Less than 1.0 mm Hg @ 77°F (ASTM D323)
e.	TG (DSC)	Greater than 136°F (ASTM D3418)
f.	Gel time	Greater than 40 minutes for 100 gram mass
g.	Percent solids	Greater than 90% by weight
h.	Bond strength	Greater than 1522.3 psi (ASTM C882)

2. Include the following information on the container for the HMWM: The name of the manufacturer, the brand name of the product and the date of manufacture.

B. Sand.

The sand shall be commercial quality dry blast sand. 95% of the sand shall pass the No. 8 sieve, and 95% shall be retained on the No. 30 sieve.

150294.03 CONSTRUCTION.

A. Watertight Integrity Testing.

1. Following attainment of 28 day strength and at least 5 days after the joint system has been fully installed, perform watertight integrity testing of one longitudinal UHPC joint per bridge span. Location of the longitudinal joint to be tested shall be determined by the Engineer.

2. The procedure for watertight integrity testing shall be as follows:
- **a.** Test the designated UHPC joint by blocking out and covering the joint with ponded or flowing water to a depth of at least 1 inch, for at least 15 minutes. The Contractor may conduct a single test of the entire joint or may conduct separate tests of overlapping lengths of the joint.
- **b.** During the test and for 45 minutes after the supply of water has stopped, the Engineer will examine the underside of the joint for leakage. The Contractor shall be responsible for providing the Engineer with safe access to the underside of the deck. The joint shall be considered watertight if no dripping water or water droplets are visible at the underdeck areas along the full length of joint. Patches of moisture shall not be cause for non-acceptance.
- **c.** If leaking joints are identified, the Contractor may be required to perform additional watertight integrity testing, at locations to be determined by the Engineer, at no additional cost to the Contracting Authority.

B. Leaking Joint Repair.

1. If leakage occurs, seal entire length of leaking joint as follows using high molecular weight methacrylate at no additional cost to the Contracting Authority:

2. Abrasive blast clean the area to be treated, removing all contaminants from the surface. Clean adjacent surfaces of the leaking joints using compressed air free of oil and moisture.

3. Do not apply resin if rain is expected within 12 hours of completion. Apply resin to clean, dry surfaces when surface temperature is at least 50°F, and if near 50°F, temperature shall be rising. Mix and apply resin according to manufacturer's instructions and no more than 5 gallons at a time. Pour resin over joints.

4. When methacrylate surface will be used as a driving surface, apply sand to provide friction. Allow at least 20 minutes to elapse after resin has been applied before applying sand. Broadcast sand at a rate of approximately 2 pounds per square yard, completely covering the resin. The resin must be tack-free before construction traffic is permitted to resume.

150294.04 METHOD OF MEASUREMENT.
No separate measurement.

150294.05 BASIS OF PAYMENT.
No separate payment will be made for water integrity test. The cost is included in price bid for Full Depth Precast Deck Panels.