

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, EDITION 2007**

SECTION 729

MULTI-LAYER POLYMER CONCRETE OVERLAY

Page 700-102, subsection 729.1. Delete the Description and replace with the following:

Prepare the surface of the reinforced concrete bridge deck, and construct a multi-layer polymer concrete overlay (overlay).

Page 700-103, delete subsection 729.3c. and replace with the following:

c. Preparation of Surface.

Existing Structures:

(1) Before preparation of the surface remove deteriorated concrete and repair the area with suitable patch material. Polymer concrete bridge deck material is acceptable. Strike off patches so they are level with the existing deck and finish with wooden floats.

(2) Portland cement concrete patches require a minimum cure period of 28 days before application of the overlay. At the preconstruction conference, discuss the curing period. Submitted changes shall include a written statement from the epoxy manufacturer/supplier recommending the change to the Engineer for approval.

New Structures:

(1) Wet cure concrete on new bridge decks for 14 days and allow the deck to dry for 21 days before applying the polymer concrete bridge deck overlay. Changes in the curing period must be approved by the Material Supplier and the Engineer.

New or Existing Structures:

(1) As the final preparation for the placement of the overlay, make a complete cleanup by shot blasting and/or other approved means, followed by an air blast with dry, oil free air or vacuum. Brooming is not acceptable. Remove all loose disintegrated concrete, dirt, paint, oil, asphalt, laitance carbonation and curing materials from patches and other foreign material from the surface of the deck.

(2) Produce a surface relief equal to the International Concrete Repair Institute (ICRI) Surface Preparation Level 6 to 7 or ASTM E 965 Pavement Macrotexture Depth of 0.04 to 0.08 inch. The following test will determine if additional surface preparation is necessary.

(a) Place a polymer concrete test patch a minimum of 0.5 square yards for each lane or planned completed days work, whichever is smaller. Submit a sequence plan to the Engineer. The test patch shall be full depth, placed by the normal construction sequence.

(b) Final acceptance will be based on the following results of the test outlined in KT-70, Part V:

- Minimum Tensile Rupture Strength of 250 psi from an average of 3 tests on a test patch regardless of depth of failure (See KT-70); or
- Failure in the concrete at a depth greater than or equal to ¼ inch over more than 50% of the test area for 3 of the 4 tests in the test patch.

(c) If failure in the concrete is at a depth less than ¼ inch and the Minimum Tensile Rupture Strength is less than 250 psi, or the failure in the concrete is less than 50% of the test area, additional surface preparation is necessary.

(d) A failure in the concrete below 250 psi and greater than ¼ inch deep indicates weak concrete, not poor overlay bond.

(e) Do not perform tensile adhesion tests when temperatures are above 85°F.

- (3) Remove any contamination of the prepared deck surface or surface of subsequent courses. Sand blast or bush hammer contaminated areas to produce an acceptable surface for placement of the overlay.
- (4) Protect metal deck drains and areas of the curb or railing above the proposed surface from the shot blast.
- (5) Close deck drains so the epoxy and aggregate shall not pass through the drains.
- (6) Rain will not necessarily contaminate the surface. However, care must be taken so no contamination occurs.
- (7) Visible moisture on the prepared deck at the time of placing the overlay is unacceptable. Identify moisture in the deck by taping a plastic sheet to the deck for a minimum of 2 hours (ASTM D 4263).
- (8) Place the first course within 24 hours of preparing the deck surface. Deck surfaces exposed for more than 24 hours must be sand blasted prior to application of the overlay.
- (9) Empty shot blasters and dispose of waste material a minimum of 50 feet from the prepared bridge deck to prevent contamination of the deck by return of dust to the prepared surface.
- (10) The Engineer must approve the use of scarifiers, scabblers or milling machines.
- (11) Wet sand blasting shall not be allowed.

Page 700-104, subsection 729.3d. Delete the sixth paragraph and replace with the following:

Use a paintbrush or roller to apply the epoxy on the face of curbs, barriers, and corral rail posts. Apply the overlay to the top of the curb face. On bridges with continuous concrete barrier rails apply the overlay to the first break in the geometry of the barrier or a minimum of 6 inches. On bridges with a corral rail, apply the overlay to the front face and adjacent sides of all posts. This work is subsidiary to the bid item Multi-Layer Polymer Concrete Overlay.

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