

## **SPECIAL NOTE FOR PARTIAL DEPTH CONCRETE PAVEMENT REPAIR**

This Special Note applies to partial depth repairs of concrete pavement. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction, current edition.

**1.0 DESCRIPTION.** Remove and replace small, shallow areas of deteriorated concrete that extend no deeper than one-third of the slab thickness. Comply with the applicable Standard Drawings and the Standard Specifications except as specifically superseded herein.

### **2.0 MATERIALS AND EQUIPMENT.**

**2.1 JPC Pavement 24/48/72.** Conform to Section 502.

**2.2 Latex Materials.** Conform to Section 606.

**2.3 Rapid Set Concrete Patching Materials.** See the List of Approved Materials for Rapid and Very Rapid hardening materials from the Division of Materials.

**2.4 Hot-Poured Elastic and Silicone Rubber Sealant.** Conform to Subsection 807.03.01 or 807.03.05.

**2.5 Hammers.** Only use chisel point hammers weighing less than 15 pounds to remove deteriorated concrete.

### **3.0 CONSTRUCTION.**

**3.1 Repair Dimension Selection.** The locations for partial-depth repair will be identified in the plans or proposal or as specified by the Engineer during construction. Identify the repair boundaries by sounding the concrete with a solid steel rod, a heavy chain, or a ball peen hammer. Repair boundaries should extend a minimum of 3 inches outside unsound areas.

**3.2 Concrete Removal.** Saw the hole to be patched with a vertical face, to a 2-inch minimum depth and to the configuration the Contract specifies or the Engineer directs. After sawing, keep exposure to traffic to a minimum until patching.

If the area to be patched is deeper than 1/3 the slab depth, construct full depth patches according to the "Special Note for Full-Depth Concrete Pavement Repair". Partial depth patches that become full depth repairs will be paid forty (40) percent of the unit price for Partial Depth Patching.

Keep overcutting beyond the limits of the removed area to a minimum. Prevent saw slurry from entering existing joints and cracks. Clean all saw slurry and other contaminants from overcutting. Repair the overcut area with a low viscosity epoxy compound.

**3.3 Repair Area Preparation.** Following the removal of the concrete, the surface of the repair area must be prepared to provide a clean, irregular surface for the development of a good bond between the repair material and the

existing slab. Clean the repair area by sandblasting followed by compressed airblasting to remove dirt, oil, thin layers of unsound concrete, and laitance. The compressed air used in the final cleaning must be free of oil. This should be checked by placing a cloth over the air compressor nozzle and visually inspecting for oil.

**3.4 Joint Preparation.** Partial-depth repairs placed against transverse joints require the use of an insert to act as a bondbreaker or joint reformer. Place the insert so that it prevents intrusion of repair material into the joint opening. Insure the compressible insert extends 1 inch below and 3 inches beyond the repair boundaries. Prior to placement, score the insert at the appropriate depth to accommodate the joint sealant material to be used. Once the patch has cured or set, remove the scored top strip to allow for the joint sealant to be placed.

### **3.5 Patching Material and Placement.**

**3.5.1 Portland Cement Patch.** Use a mixture conforming to Section 502 except use No. 8 or 9M coarse aggregate. Submit a mix design for the Engineer's approval. Vigorously scrub a grout bond coat into the repair area. Use a grout consisting of a slurry made of water mixed with equal parts of Portland cement and mortar sand.

Place the patch before the grout shows any sign of drying. Cure according to Subsection 502.03. Two applications of curing compound will be required. Remove and replace all areas of the patches that display cracks or are not bonded to the underlying pavement.

**3.5.2 Latex Concrete Patch.** Prepare the patch area and apply a latex grout bond coat. Furnish, mix, place, and cure the latex concrete according to Section 606. Ensure the curing materials required by Subsection 606.03.17 A) 4) remain in place for the specified time. Remove and replace all areas of the patches that display cracks or are not bonded to the underlying pavement.

**3.5.3 Rapid Set Concrete Patching Materials.** Furnish a repair material specified as "Rapid" or "Very Rapid" hardening listed on the Division of Materials *List of Approved Materials* when the repair area is required to be opened to traffic in a short time frame. A substitute product may be allowed only after submittal and approval by the Division of Materials. Repair materials should be installed according to the manufacturer's recommendations. All materials used will be tested prior to the project beginning to insure that a minimum opening compressive strength of 3,000 psi can be obtained based on the time requirements listed in the maintenance of traffic notes for the project.

Remove and replace all areas of the patches that display cracks or are not bonded to the underlying pavement.

**3.6 Joint Sealing.** Seal all new or partially new joints with hot-poured elastic or silicone rubber sealant according to Subsection 501.03.18 D).

**4.0 MEASUREMENT.**

**4.1 Partial Depth Patching.** The Department will measure the quantity in cubic feet, either from field measurements or the metered quantity from the mixer, as the Engineer determines.

**5.0 PAYMENT.** The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
02110	Partial Depth Patching	Cubic Foot

The Department will consider payment as full compensation for all work required in this provision.

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