

**PATCHING PORTLAND CEMENT CONCRETE PAVEMENT.**  
**(REV 2-7-94) (7-00)**

PAGE 373. The following new Section is added after Section 352.

**SECTION 354**  
**PATCHING PORTLAND CEMENT CONCRETE PAVEMENT**

**354-1 Description.**

Patch spalls, potholes, and corner breaks in portland cement concrete pavement by partial depth removal of the asphalt concrete, or broken, damaged or disintegrated concrete pavement from spalled areas of the pavement surfaces and patching of the damaged areas with approved patching materials.

**354-2 Materials.**

Meet the following requirements:

24 Hour Accelerated Strength Concrete.....	Section 353
Epoxy Adhesive*	
Type A, for Bonding Plastic Concrete to Hardened Concrete.....	Section 926
Epoxy Adhesive for Making Epoxy Mortar or Epoxy Concrete*	
Fine Aggregate	
Gradation Specified by Epoxy Manufacturer .....	Section 902
Coarse Aggregate .....	Section 901
Rapid Setting Patching Material.....	Section 930

\*Use only Epoxy Mortar and Epoxy Concrete Mix Designs approved by the Engineer and in accordance with the Manufacturer's written recommendation.

**354-3 Construction.**

**354-3.1 General:** Conduct concrete patching operations in one lane at a time. Minimize inconvenience to public traffic. Perform the work concurrent with other operations in progress within an area. Complete the work within an area before beginning grinding.

Identify defective areas of each transverse contraction joint by striking the pavement surface alongside each side of each joint with a carpenter's hammer, a chain drag or other similar tools. Fill defective areas less than 6 inches [150 mm] in length and 1½ inches [40 mm] in width at the widest point with silicone joint sealant. For larger defective areas, remove the existing pavement to the depth of sound concrete. Use either of the repair methods listed herein for each repair except in areas where the maximum repair depth is 4 inches [100 mm] or more. Use Method No. 1 to repair defective areas of 4 inches [100 mm] or more in depth.

Immediately before beginning repairs, sandblast the surfaces within the repair areas to remove oil, dust, dirt, traces of asphalt concrete, and other contaminants. Form transverse and longitudinal joints in accordance with plan joint details to coincide with existing joints and to eliminate the need for sawing. Finish all patches to conform to the cross-section and texture of the existing pavement.

Remove and replace all patches that are unacceptable to the Engineer at any time prior to final acceptance at no cost to the Department.

**354-3.2 Repair Method No. 1, 24 Hour Accelerated Strength Concrete:** Leave undisturbed portions of the existing pavement adjacent to the area to be patched with neatly sawn edges having a vertical face intersecting the surface of not less than 1½ inches [40 mm].

Completely coat the bottom and vertical side walls of the repair area with a film of Type A Epoxy Compound approximately 10 to 20 mils [0.25 to 0.5 mm] thick. Deposit concrete in the area while

the epoxy is still tacky. Vibrate the concrete to completely fill the area of the patch. Screed the concrete to the proper grade and allow it to remain undisturbed until the water-sheen disappears from the surface, then cover with wet burlap and a mound of wet sand. Cure the concrete for at least three hours and until the section is opened to traffic.

**354-3.3 Repair Method No. 2, Rapid Setting Patching Material for Portland Cement**

**Concrete Pavement:** Prepare the surfaces in the repair areas in accordance with the manufacturer's written recommendations. Handle, mix, place, consolidate, screed, and cure the patching material in accordance with the manufacturer's written instructions as approved by the Engineer. Cure the area until the section is opened to traffic.

**354-3.4 Repair Method No. 3, Epoxy Mortar or Epoxy Concrete:** Submit Epoxy Mortar and Epoxy Concrete mix designs to the Engineer for verification and approval. The Engineer will approve those designs determined to be compatible with concrete pavement and that do not exhibit excessive surface slicking at 90°F [32°C] curing temperature.

Precondition the epoxy resin and the catalyst before blending to produce a blended liquid that is between 75 and 90°F [24 and 32°C]. Mix the epoxy components in strict compliance with the manufacturer's recommendations before aggregates are added to the mixture. Blend the mixture in a mixer to produce a homogeneous mass. Mix only that quantity of materials that can be used in one hour. Do not use material that has begun to generate appreciable heat.

Prime the entire surface of the repair areas and the adjacent areas with neat blended epoxy immediately before placing the mixture. Place and tamp the mixture to eliminate voids and to thoroughly compact the product. Screed the surface to produce the required finish. Leave the repaired area undisturbed for at least three hours before it is subjected to traffic.

**354-4 Method of Measurement.**

The quantity to be paid for under this Section will be determined as specified in 9-1.3.1.

**354-5 Basis of Payment.**

Price and payment will be full compensation for any required sawing, removing the asphalt concrete patching material or the spalled, broken or damaged portland cement, cleaning the substrate by sandblasting, furnishing, placing, finishing and curing the concrete patch and forming a new transverse and longitudinal joint including all equipment, tools, labor and incidentals necessary to complete the work.

Payment will be made under:

Item No. 354-70-	Patching Portland Cement Concrete Pavement - per square yard.
Item No. 2354-70-	Patching Portland Cement Concrete Pavement - per square meter.