

Designer Note: Use on resurfacing projects to address areas which need repair, but do not warrant full depth repair. Joints and cracks, which exhibit environmental distresses, such as, spalling and "D" cracking or contains maintenance patching, are eligible for using this method of repair. Joints and cracks which exhibit load related stresses, such as, pumping, alligator cracking, corner breaks, compression failures, subgrade failures, or punch-outs should not use this method of repair. Discuss use with your Project Engineer.

PORTLAND CEMENT CONCRETE PARTIAL DEPTH HOT-MIX ASPHALT PATCHING (BDE)

Effective: April 1, 2014

Description. This work shall consist of partial depth removal of the existing Portland cement concrete pavement structure and replacement with hot-mix asphalt (HMA).

The partial depth removal on a lane width or less shall be classified by type/size as follows.

Type I	Less than 8 sq. yd. (9 sq. m)
Type II	8 sq. yd. (9 sq. m) or more, but less than 50 sq. yd. (42 sq. m)
Type III	50 sq. yd. (42 sq. m) or more, but less than 100 sq. yd. (84 sq. m)
Type IV	100 sq. yd. (84 sq. m) or more

Materials. Materials shall be according to the following Articles/Sections of the Standard Specifications.

Item	Article/Section
(a) Bituminous Material for Prime Coat	406.02
(b) Hot-Mix Asphalt (Note 1)	1030

Note1. If the patch is going to be resurfaced, the HMA for partial depth patches shall be a surface mixture of the same type as the proposed resurfacing or as approved by the Engineer. If the patch is not going to be resurfaced, the mix shall be as shown on the plans.

Equipment. Equipment shall be according to the following Articles/Sections of the Standard Specifications.

Item	Article/Section
(a) Self-Propelled Milling Machine	1101.16
(b) Concrete Saw	442.03(f)
(c) Wheel Saw	442.03(g)
(d) Rollers	442.03
(e) Mechanical Sweeper	1101.03
(f) Air Equipment (Note 1)	

Note 1. The air equipment shall be capable of supplying compressed air at a minimum pressure of 100 psi (690 kPa) and shall have sufficient flow rate to remove all disturbed pavement debris. The equipment shall also be according to ASTM D 4285.

CONSTRUCTION REQUIREMENTS

General. The minimum patch dimension shall be 24 in. x 24 in. (600 mm x 600 mm).

Partial Depth Removal. Partial depth removal of the pavement shall be accomplished by the use of a milling machine and/or the wheel saw. The patch area shall be cleaned by air equipment or mechanical sweeper and all disturbed pavement debris and any loose or unsound concrete shall be removed. Materials resulting from the removal shall be disposed of according to Article 202.03 of the Standard Specifications.

Exposed reinforcement shall be removed back to the point where the steel is in contact with sound concrete. Where high steel is encountered, the depth of the patch may be reduced as directed by the Engineer.

Replacement with HMA. When the Engineer determines the exposed pavement will be suitable for a partial depth patch, a bituminous prime coat shall be applied according to Article 406.05(b) of the Standard Specifications.

The prepared patch shall be filled with HMA with a maximum lift thickness of 3 in. (75 mm). Where more than one lift is needed, the top lift shall be a minimum of 2 in. (50 mm) thick. At the option of the Contractor, the 2 in. (50 mm) top layer may be constructed using HMA surface course. The HMA shall be compacted to the satisfaction of the Engineer.

Patch Maintenance. Patches opened to traffic which are high or become rough by rutting, shoving, or heaving shall be corrected by trimming off high areas and/or filling depressions. Filled areas shall be rolled again.

Areas Unsuitable for a Partial Depth Patch. When the Engineer determines the exposed pavement will not be suitable for a partial depth patch, or removal is one half or more of the pavement thickness, the remaining portion of the pavement shall be removed and a full depth patch shall be constructed according to Section 442 of the Standard Specifications for the Class of full depth patches included in the contract. The exposed area may be filled with HMA and the full depth patch constructed at a later date. HMA shall be placed as specified for the partial depth repair.

Method of Measurement. Partial depth removal of the Portland cement concrete pavement will be measured for payment in place and the area computed in square yards (square meters).

HMA for partial depth patching of the Portland cement concrete pavement and for the backfilling of partial depth removal when it is determined the area is not suitable for a partial depth patch will be measured for payment in Tons (Metric Tons) according to Article 406.13 of the Standard Specifications.

Basis of Payment. Partial depth removal of the Portland cement concrete pavement will be paid for at the contract unit price per Square Yard (Square Meter) for PARTIAL DEPTH REMOVAL, of the type and thickness specified.

HMA for partial depth patching and for backfilling areas unsuitable for a partial depth patch will be paid for at the contract unit price per Ton (Metric Ton) for PARTIAL DEPTH PATCHING.

When the Engineer determines to convert any partial depth patch to a full depth patch after the partial depth removal of the Portland cement concrete pavement has begun, the partial depth removal will still be paid for at the contract unit price for PARTIAL DEPTH REMOVAL. The remaining removal for the full depth patch will be considered as included in the appropriate full depth patching pay item.