Use this article when retrofitting dowels or when there is no overlay. Coordinate with Pavement Engineer before using.

1. Removing Raised Pavement Markers, Item SPV.0060.##

A Description

This special provision describes removing existing castings and filling original saw cut areas as the plans show or engineer directs.

B Materials

B.1 Concrete Patch Material

Use concrete patch material tested as Rapid Set Concrete Patching Materials that conforms to ASTM C928 with the following deletion or addition: Delete sections 1.1.1, 1.1.2, and 1.3. Only use material that: (1) provides an opening to traffic compressive strength of 3000 psi in three hours per ASTM C39; (2) exhibits expansion of less than 0.10 percent per ASTM C531; Section 1.3 of the ASTM C531 should be modified to say this test method is limited to materials with aggregate size of 3/8 inch or less; and (3) has a calculated durability factor of 90.0 percent minimum at the end of 300 freeze-thaw cycles per ASTM C666, procedure A (water shall contain 5% sodium chloride by mass). Before use, provide a certification of compliance with the above requirements as prescribed by standard spec 106.3.3. Patching material shall be extended with a clean natural aggregate. Aggregate extender shall conform to the requirements prescribed in standard spec 501.2.5.4 except that the size requirements are as follows:

Minimum of 95% passing the 3/8 (9.5 mm) sieve

Maximum of 25% passing the No. 4 (4.75 mm) sieve

B.2 Curing Agent

Provide a concrete curing agent that is a resin of 100 percent poly-alpha-methylstyrene type curing compound meeting ASTM C309, Type 2, Class B specifications and conforming to all requirements listed in the following table:

|  |  |  |
| --- | --- | --- |
| Properties | Minimum | Maximum |
| Total Solids, % by weight of compound | 42 |  |
| Reflectance in 72 hours (ASTM E1347) | 65 |  |
| Loss of Water, kg/m2 in 24 hours (ASTM C156) |  | 0.15 |
| Loss of Water, kg/m2 in 72 hours (ASTM C156) |  | 0.40 |
| Settling Test, ml/100 ml in 72 hours*[1]* |  | 2 |
| V.O.C. Content, g/L |  | 350 |
| Infrared Spectrum, Vehicle*[2]* | 100% alpha-methylstryrene |

Shelf life of the product shall be 6 months from date of manufacture. The product may be re-tested by the department’s Materials Testing Lab and re-approved, if the physical and chemical properties have not changed, for an additional six months. However, the maximum shelf life shall not exceed one year from manufacture date.

C Construction

C.1 Removing Raised Pavement Marker

Sand blast or use other approved method to completely remove the raised pavement marker, epoxy and other construction material from the existing slot.

Remove pavement marker and any epoxy or other construction material from the existing saw cut area.

C.2 Placing Patch Mix

Immediately before placing the patch mix, moisten existing concrete surfaces in the slot or prepare the existing concrete surfaces as recommended by the manufacturer, or both. Before patching material is placed, remove all excess water in the slot.

With a portable or mobile mixer, mix patching material according to the manufacturer’s recommendations.

Place the patching material into the slot and vibrate the patching material. The diameter of the vibrator head shall not exceed 1 1/4-inches.

When the ambient temperature is below 50 degrees Fahrenheit (10 degrees Celsius), placement of patching material will require prior approval by the engineer.

If the pavement is not going to be diamond ground, strike-off the surface of the filled area flush with the adjacent concrete. If the pavement is to be diamond ground after completion of the dowel bar retrofit operation, it is acceptable to leave the slot slightly overfilled.

Before placing any vehicle load on the patched area, cure patching material by the impervious coating method for a minimum of three hours. The coverage rate for the curing agent will be at a rate of 100 square feet per gallon. During this three-hour initial curing period, covering may be needed to prevent excess thermal stress in the patch material.

When the ambient temperature is below 50 degrees Fahrenheit (10 degrees C), the engineer may postpone opening to vehicular loads or require covering during the initial curing period, or both.

Remove existing pavement marker casting. Clean, dry and epoxy existing saw cut area.

D Measurement

The department will measure Removing Raised Pavement Markers by the individual casting acceptably removed and filled with concrete patch material.

E Payment

The department will pay for the measured quantity at the contract unit price under the following bid item:

ITEM NUMBER DESCRIPTION UNIT

SPV.0060.## Removing Raised Pavement Markers EACH

Payment for Removing Raised Pavement Markers is full compensation for removing, hauling, and disposing of materials; cleaning existing saw cut areas; and for furnishing and placing concrete patch material.

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