*Designer notes: This bid item is only to be used when deemed absolutely necessary due to construction schedule constraints by Region and Bureau of Structures design staff (608-266-8489). Consult with Region Bridge Maintenance to verify project suitability. “Concrete Masonry Deck Repair” should be used as the default material to be placed in sawed deck preparation areas of concrete bridge decks prior to placement of asphalt or polymer overlays. Rapid Set Deck Repair material is not to be used for full depth deck repair areas.*

**Rapid Set Deck Repair, Item SPV.0035.xx.**

# A Description

This special provision describes furnishing, placing and curing a rapid setting non-shrink patch material on the sawed deck preparation areas of the concrete bridge deck. Perform the work conforming to standard spec 509.

# B Materials

# B.1 Patching Materials

Furnish a rapid setting non-shrink material designed for repairing concrete decks from the department’s Approved Products List for “Rapid Setting Concrete Patch Material”. The material shall be capable of obtaining a minimum compressive strength of 3000 psi within 3 hours. The patch material must be compatible with the existing concrete deck, reinforcing steel, and the polymer or asphalt overlay product (if applicable); and have a proven record of at least five successful applications in climates similar to Wisconsin. The use of chloride accelerators or other corrosion inducing products is prohibited.

A minimum of ten working days prior to construction, submit the manufacturer’s product data sheets, material sources, mix designs, and supporting performance documentation to the engineer for approval.

**B.2 Materials Quality Control Testing**

For projects that allow 3 hours or more of cure time prior to opening to traffic, submit certified test results from an independent lab showing that the patch material can obtain 3000 psi within 3 hours of placement under the same curing conditions as the project.

For projects that require bridge decks to be open to traffic with less than 3 hours of cure time, perform quality control testing. For material extended with aggregates, perform cylinder breaks per ASTM C39. Make a minimum of two compressive strength test cylinders per shift per batch plant and cure under the same conditions as the deck patches. For material not using coarse aggregates, perform cube breaks per ASTM C109. Make a minimum of two compressive strength test cubes per shift per batch plant and cure under the same conditions as the deck patches. Provide test results to the engineer showing 3000 psi strength is obtained prior to opening the bridge deck to traffic.

For projects requiring ASTM C39 or ASTM C109 testing, furnish a department-certified mobile laboratory to perform the testing.

# C Construction

Clean and prepare the area to be patched per the manufacturer’s recommendations and as follows. After sawed deck preparation work is complete, blast clean the area and any exposed reinforcing steel. Thoroughly clean the surface upon which the new patch material is to be placed by brooming and using air pressure to remove all loose particles and dust. Apply a bonding agent, as necessary and as recommend by the patch material manufacturer, to surfaces to be covered by patch material.

Place patch material to produce plane surfaces that conform to the grade and elevation of the adjoining surfaces. Where a polymer or asphalt overlay will not be placed over the patch, finish the surface by tining or applying exposed angular aggregate as approved by the engineer. Where a polymer or asphalt overlay will be placed over the patch, shotblast the patch in the same fashion as the remainder of the bridge deck.

# D Measurement

The department will measure Rapid Set Deck Repair in volume by the cubic yard acceptably completed.

# 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.0035.xx | Rapid Set Deck Repair | CY |

Payment for Rapid Set Deck Repair is full compensation for furnishing, hauling, preparing, placing, finishing, curing, and protecting all materials; and for materials quality control testing.