

826 – CONCRETE SURFACE REPAIR

SECTION 826

CONCRETE SURFACE REPAIR

826.1 DESCRIPTION

Remove the unsound concrete surface and replace the concrete according to the details in the Contract Documents.

BID ITEM

Concrete Surface Repair

UNITS

Square Foot

Note: If this bid item is not included in the Contract Documents, this work is subsidiary to other items in the contract.

826.2 MATERIALS

Provide materials that comply with the applicable requirements.

Concrete	SECTIONS 401 & 402
Aggregates for Concrete Not On Grade	SECTION 1102
Concrete Curing Materials	DIVISION 1400
Reinforcing Steel for Concrete	DIVISION 1600
Fibrous Reinforcement for Concrete	DIVISION 1700
Shotcrete Concrete	DIVISION 1700
Rapid Set Concrete Patching Material*	DIVISION 1700

*When specified in the Contract Documents.

a. When specified, provide one of the following types of concrete:

- (1) Formed. Use Grade 4.0 (AE)** concrete that complies with **SECTION 401**. Provide concrete with slump that is appropriate for the intended use and acceptable to the Engineer.
- (2) Pneumatically Applied. Use Shotcrete concrete that complies with **DIVISION 1700** and has a 28-day compressive strength of 4000 psi**. Wet or dry process is permitted.
- (3) Hand packed. Use Grade 3.5 (AE)** with the following exceptions:
 - (a) Do not include any coarse aggregate (provide a concrete mortar).
 - (b) Include fibers as specified in **SECTION 1722**.

b. If no type of concrete is specified, provide either material in **subsection 826.2a.(1)** or **(2)**.

** Unless otherwise shown on the plans.

826.3 CONSTRUCTION REQUIREMENTS

Depending on the nature and size of the concrete surface repair, the Engineer will designate the type of concrete used for the repair and the process used for the repair (such as formed and poured, hydraulically applied or hand packed) in the Contract Documents.

- Remove the unsound concrete to the limits designated in the Contract Documents or as directed by the Engineer. The maximum size of chipping hammer allowed for concrete removal is 15 pounds.
- Remove the existing concrete to a depth of 2½ inch (minimum), or deeper if necessary to expose sound concrete. Remove the existing concrete at least ¾ inch beyond any existing steel reinforcement exposed during the removal of the unsound concrete.
- Do not wedge the tip of the chipping hammer between the concrete and reinforcement during concrete removal. Do not impact directly on reinforcement. Debonding of concrete caused by such actions will be repaired at no cost to KDOT.
- Confirm reinforcement bond adjacent to the repair area. Do this by sounding concrete over the reinforcement in the presences of the Engineer prior to placement.
- Chip the perimeter edge of the repair area to near perpendicular (to the concrete surface). Do not feather the edge of the repair area.

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- Sandblast, then use compressed air (90 psi min) to clean the prepared repair area and exposed steel reinforcement to remove all bond-inhibiting materials.
- Dampen the clean surface to a surface saturated dry condition just prior to concrete placement.
- Place the repair concrete as specified in the Contract Documents. Match the lines of the existing surface unless shown otherwise in the Contract Documents.
- Cure the concrete as directed by the Engineer.

Additional Requirements for Shotcrete: During the preconstruction meeting, demonstrate competence of the nozzleman by providing a copy of a current ACI Shotcrete Nozzleman certificate for the appropriate application.

Apply the shotcrete according to the manufacturer's recommendations. Provide the Engineer with a printed copy of the manufacturer's recommendations.

826.4 MEASUREMENT AND PAYMENT

When shown as a bid item in the contract, the Engineer will measure the concrete surface repairs by the square foot. If the bid item for this work is not included in the Contract Documents, the Engineer will not measure the concrete surface repairs for payment.

Payment for "Concrete Surface Repair" at the contract unit price is full compensation for the specified work.