

ITEM 04502.8001 M - CONCRETE REMOVAL FOR PCC PAVEMENT REPAIR - CORING METHOD
ITEM 04502.8002 M - CONCRETE REMOVAL FOR PCC PAVEMENT REPAIR - SAWING METHOD

DESCRIPTION

This work shall consist of removing deteriorated concrete from portland cement concrete pavement at various locations as specified in the plans, in accordance with the specifications and as directed by the Engineer.

MATERIALS

(None specified)

CONSTRUCTION DETAILS.

Coring Method - The Contractor shall use a trailer or truck mounted core drilling rig with water cooling system, unless otherwise restricted in the contract plans, to remove deteriorated concrete from the concrete pavement. No hand held or platform coring equipment will be allowed for removing concrete. The Contractor shall provide drill bits within two size ranges for removal as follows:

Removal area of less than 150 mm in diameter - the Contractor shall use any drill bit having a diameter ranging from 170 to 210 millimeters.

Removal area of 150 mm to 300 mm in diameter - the Contractor shall use any drill bit having a diameter ranging from 320 to 355 millimeters.

The drill bits shall be a thin wall impregnated diamond bit. The Contractor shall have on the project site a supply of drill bits in order to complete the planned removal for that work day. The Contractor shall have two templates each, of 150 mm and 300mm in diameter (four total), for marking out removal areas. Once the marked out removal boundary is accepted by the Engineer, the Contractor shall position the coring rig and remove the entire marked out area to the satisfaction of the Engineer.

The Engineer will determine the depth of coring based on the condition of the spalled area unless otherwise indicated in the contract plans. The maximum depth for any coring removal shall be 100 mm. Once the coring operation begins it shall proceed to the required depth, no reentry of the core bit to the hole shall be allowed after the extraction of the coring bit.

The Contractor shall insert into the coring hole a steel sleeve of the same diameter of the coring bit that extends a minimum of 5 mm above the pavement surface. The Contractor shall then remove the concrete within the sleeve using chipping hammers as described below.

If concrete deterioration is still present after the coring removal, the Engineer will evaluate and remark the removal area as needed. The sawing method shall then be used to complete any additional removal. The Contractor will be compensated for each type of removal under this specification.

Sawing Method - The Contractor shall mark out the removal boundary to the dimensions shown in the plans or as determined by the Engineer. Once the marked out removal boundary is approved by the Engineer, the Contractor may make the saw cut. The saw cut shall be made using a diamond blade saw. The saw shall be equipped with guides, capable of making straight cuts, cut depth controls, and water cooling systems.

The saw cut shall be made to a minimum depth of 50 to 75 mm deep, cut at right angles to the pavement joints and vertical to the pavement surface. The saw cuts shall be over run to ensure the entire removal is cut to the same depth. The Contractor may make additional saw cuts of the same depth to facilitate concrete removal.

The Contractor shall then remove the concrete using chipping hammers as described below to a maximum depth of 125 mm. If removal exceeds the 125mm maximum the Contractor shall discontinue removal operations and notify the Engineer. The Engineer will evaluate the removal and determine if full depth restoration is necessary.

Joints - Where removals are located at transverse or longitudinal joints, the Contractor shall not remove concrete that will expose load transferring devices. The removal shall be stopped and the Engineer notified. The Engineer will determine the manner in which the work will continue.

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The Contractor shall place pre-molded resilient joint filler into any transverse or longitudinal joints that are in or abut the repair area. The filler shall be of the same thickness of the joint width, ± 3 mm, to re-establish the joint opening. Place the filler material such that it extends 25 mm below and beyond the repair area and restricts the repair material from entering the joint. Additional saw cuts may be needed and shall be completed prior to cleaning the repair area.

Chipping Hammers - Chipping Hammers weighing no more than 13.5 Kg (including bit and Muffler) equipped with sharp spade bits shall be used for concrete removal operations. The Contractor shall provide the Engineer with the specifications from the hammer manufacturer. The air pressure/power (measured at the compressor) to the hammer shall be a maximum of 700 kPa. The compressor shall have a air pressure gauge that allows the Engineer to easily monitor the air pressure.

The Contractor shall supply adequate numbers of equipment, kept in working order to ensure uninterrupted operation of the work. The Contractor shall replace equipment that in the opinion of the Engineer is not working satisfactorily.

Concrete shall be removed to a minimum depth of 50 mm. The concrete shall be removed to sound concrete, to the maximum depth (as outlined above), or as specified by the Engineer. The removal shall produce a uniform bottom along the entire area of the repair.

Damage to Adjacent pavement- The Contractor shall be responsible for all damage that occurs as a result of the Contractor's operation. All damaged pavement shall be repaired according to §502-3.15 Defective or Damaged Concrete.

Opening to Traffic - The Contractor shall be responsible for completing the repairs according to the Maintenance and Protection of Traffic plan for the project or as ordered by the Engineer.

METHOD OF MEASUREMENT.

Coring Method. This work shall be measured as the number of locations of concrete removal completed in accordance with this specification.

Sawing Method. This work shall be measured by the number of square meters of concrete removed in accordance with this specification.

BASIS OF PAYMENT.

The unit price bid for the both methods shall include the cost of all labor, materials, tools and equipment necessary to satisfactorily complete the work, including drilling, sawing and removing concrete. The Contractor shall repair, at the Contractor's expense, any damage to the adjacent pavement or the material being installed that is caused by the Contractor's operations.

ITEM	DESCRIPTION	UNITS
04502.8001 M	CONCRETE REMOVAL FOR PCC PAVEMENT REPAIR - CORING METHOD	EA
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