

LC500403 PAVEMENT JACKING (LCDOT) For use on LCDOT let projects only - do not include in IDOT let projects. Delete this note from the Contract Specifications.

Effective: August 1, 2011

Revised: May 20, 2014

Description: This work shall consist of raising settled concrete pavement using a high density polyurethane material. The work shall include drilling injection holes, placing the polyurethane material, testing and surveying to control the lift of the pavement, cleanup and other related work.

Materials: The material used for raising concrete slabs shall be a high density polyurethane material, such as Uretek 486 or an approved equivalent. The material shall be hydro-insensitive in its component reaction so that the injected product is not significantly compromised by soil moisture or free water under the pavement. The material shall have a minimum free rise density of 3.0 lb/ft³ and a minimum compressive strength of 40 psi.

Equipment: A list of lifting equipment shall be submitted to the Engineer for review. The following minimum equipment shall be required to perform the work.

1. A pneumatic drill capable of drilling 5/8" diameter holes.
2. A truck mounted pumping unit capable of injecting the polyurethane between the concrete pavement and sub-base. The pumping unit shall be capable of controlling the rate of rise of the pavement.
3. A leveling unit to ensure that the concrete pavement is raised to an even plane or to the required elevation.

Field Surveying: The Contractor shall perform an adequate survey of the area proposed for regrading to determine the existing profile grade line elevations. The Contractor shall use this data to develop a proposed revised profile grade line. The Contractor shall submit the proposed profile to the Engineer for approval. The Engineer's approval shall be required prior to beginning any work. The approved revised profile grade line shall be used to guide the leveling of each area proposed for regrading.

Construction Methods: A series of 5/8" diameter, or other approved diameter; holes shall be drilled at maximum of six foot intervals through the concrete in the area to be raised. The exact location and spacing of the holes shall be determined by the Contractor and approved by the Engineer. The holes shall be drilled to a depth sufficient to penetrate the concrete pavement, bituminous subbase, or deeper as directed by the Engineer.

Subgrade penetration shall not exceed 3". For holes nearest the edge of the slab, the joints, or a major crack, a maximum of 3" tolerance from the precise mark is considered reasonable. For all other holes a 6" tolerance is acceptable.

The drills shall be rotated to avoid cracking the pavement and to provide satisfactory holes of the proper diameter for effective operations. When drilling holes, the drills shall be held as nearly perpendicular as possible to the pavement surface. Irregular or unsatisfactory holes which cannot be used shall be filled and sealed with non-shrink grout. New holes shall be drilled.

The Contractor shall exercise sufficient precautions during all operations to insure that slabs are not broken or cracked. Any slab that develops a crack that extends through the drill hole will be considered to have been damaged during the process of the work, and it shall be repaired or replaced at no cost to the Department. Any repair or replacement shall be according to techniques approved by the Engineer.

The Contractor shall not drill more holes, during a day's operation, than can be filled the same day.

The polyurethane material shall be injected under the slab. The pumping unit shall control the amount of rise by regulating the rate of injection of the polyurethane material. The Contractor shall be responsible for any excessive or uneven pavement moving and shall replace or repair any damaged areas as directed by the Engineer. When the nozzle is removed from the hole, any excessive polyurethane material shall be removed from the area of the hole. The hole shall be sealed with an approved non-shrink grout.

Work shall not be performed when the pavement surface temperature is below 35°F or if the sub-grade and/or base course material is frozen.

The finished concrete slab shall conform to the grade and cross section of the slab prior to settlement. Final elevations shall be within a tolerance of $\pm 1/4$ ".

The polyurethane shall set and obtain 90 percent of its ultimate compressive strength within 15 minutes after final injection. All traffic shall be kept off the slab until sufficient time has passed to achieve the desired compressive strength.

The Contractor shall keep the adjacent pavement surfaces reasonably clean at all times.

Method of Measurement: Pavement Jacking will be measured for payment as a lump sum.

Basis of Payment: This work will be paid for at the contract unit price per lump sum for PAVEMENT JACKING. *The unit price shall include all materials, tools, equipment, labor and incidentals necessary to complete the work.*