

ITEM 502.0102 91 - PRECAST CONCRETE HIGHWAY PAVEMENT SLABS

DESCRIPTION. Furnish and install precast concrete pavement slabs in accordance with the contract documents. Obtain slabs from a manufacturer appearing on the Department's Approved List entitled "Precast Concrete Manufacturers Approved for QC/QA Production – Group 1."

MATERIALS. Apply §704-03, Precast Concrete – General, except as modified herein.

Concrete. Use Class C concrete produced in accordance with Section 501, Portland Cement Concrete – General, containing 5% Microsilica as part of the total cementitious material content.

Reinforcement. Fabricate slabs with double mat reinforcement. Use number 19 bars meeting §709-04, Epoxy-Coated Bar Reinforcement, Grade 420. Provide 75 – 85 mm concrete cover over top mat reinforcement and 40 – 50 mm concrete cover under bottom mat reinforcement. Provide 75 – 85 mm concrete cover between bar ends and slab edges.

A. Longer Slab Direction (Both Mats). Space bars in accordance with the following table.

SPACING FOR BARS IN LONGER DIRECTION	
Slab Thickness (mm)	Maximum Spacing (mm on center)
200	175
225	150
250 +	140

B. Shorter Slab Direction (Top Mat Only). Place end bars such that 75 – 85 mm of concrete cover is provided at the slab edges. Space interior bars 750 mm, maximum, on center.

Texture. Apply §502-3.10, Texturing, to the top surface of the slab. Provide smooth surfaces on the bottom and side surfaces of each slab.

Curing. If slabs are cured while exposed to sunlight, cure in accordance with §502-3.11, Curing. Otherwise, apply §704-03, Precast Concrete – General.

Drawings. Fabricator Working Drawings are required.

Manufacturers Instructions. Provide the Engineer the following written instructions before any slabs are placed:

A. Subbase Preparation. Instructions for any recommended subbase preparation.

B. Slab Installation. Specific instructions for lifting, moving, protecting, lowering and adjusting the slabs into their proper position.

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CONSTRUCTION DETAILS. Convene a preplacement meeting 7 to 14 days before the planned start of slab installation with the Engineer, manufacturer, supplier, and any relevant subcontractors to review and coordinate all aspects of placement and inspection including personnel requirements. Install slabs to the line and grade depicted in the contract documents \pm 6 mm.

Weather Limitations. Apply §502-3.01, Weather Limitations.

Subbase Course. Apply Section 304, Subbase Course, for new construction and add-on lanes. For pavement repair, prepare the subbase course in accordance with the contract documents. Fine grade the subbase to achieve maximum uniform support. Follow the manufacturer's written instruction for any final subbase preparation prior to slab installation. Do not disturb the prepared surface before installation.

Slab Installation. Install the slabs in accordance with the manufacturer's written instructions. Set the slabs to achieve maximum contact with the prepared subbase.

Joint Widths. For pavements remaining concrete surfaced, install slabs such that joint widths are 0 – 10 mm, regardless of joint orientation. For pavements receiving hot mix asphalt (HMA) overlays, install slabs such that joint widths are 0 – 20 mm. These dimensions apply to joints between adjacent precast slabs or joints between precast slabs and existing pavement.

Bed and Level Slabs. Bed and level slabs using the Uretex Method™. Provide instructions to the Engineer. Level the slabs to the correct line, grade, and cross slope while meeting contract smoothness requirements. Include all pertinent information, including:

- Material properties, composition, and mix design of any slab jacking material.
- Method used to place the slab jacking material beneath the slab.
- Method used to ensure complete contact with jacking material when placed.

Fabricate 12 cubes of Uretex polymer in accordance with NYSDOT Test Method NY 701-13P, C, Concrete Repair Material

Smoothness. For new pavement or add-on lanes, remove and reset any adjacent slabs that have a vertical differential of 10 mm or more at any joint. After slabs are set, apply §502-3.15, Hardened Surface Test, for nonprofilographed pavement or §502-3.16, Profilograph, for profilographed pavement. No Smoothness Quality Adjustment is paid for precast slab pavement construction.

For pavement repair, position slabs such that the maximum vertical displacement across any joint that includes the precast slab is 3 mm.

Backfill Pavement Hardware. Backfill in accordance with the latest NYSDOT specifications for Retrofit Dowels in PCC Pavement.

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Opening to Traffic. For pavements remaining concrete surfaced, the precast slabs may be opened to traffic after the:

- Backfill material around the pavement hardware obtains 17 MPa compressive strength.
- Bedding and/or slab leveling materials obtain 2 MPa compressive strength.
- Joints are addressed in accordance with §502-3.12, Sealing Joints.

For pavements receiving an HMA overlay, the precast slabs may be opened to traffic for 24 hours before backfilling around pavement hardware or bedding the slabs, provided the maximum vertical differential requirements above in Smoothness are satisfied.

METHOD OF MEASUREMENT. The work will be measured for payment as the number of cubic meters of precast concrete pavement slabs satisfactorily installed.

BASIS OF PAYMENT: Include the cost of all labor, material, and equipment necessary to satisfactorily perform the work in the unit price bid for Precast Concrete Pavement Slabs.

DISAPPROVED BY E05.042