

- ITEM 557.51XX--18 - INTERNAL CURING CONCRETE FOR SUPERSTRUCTURE SLABS WITH INTEGRAL WEARING SURFACE - BOTTOM FORMWORK REQUIRED - TYPE XX FRICTION**
- ITEM 557.52XX--18 - INTERNAL CURING CONCRETE FOR SUPERSTRUCTURE SLABS WITH INTEGRAL WEARING SURFACE - BOTTOM FORMWORK NOT REQUIRED - TYPE XX FRICTION**
- ITEM 557.54XX--18 - INTERNAL CURING CONCRETE FOR STRUCTURAL APPROACH SLAB WITH INTEGRAL WEARING SURFACE - TYPE XX FRICTION**
- ITEM 557.5500--18 - INTERNAL CURING CONCRETE FOR SIDEWALKS AND SAFETY WALKS**

### **DESCRIPTION**

Furnish and place reinforcing steel and Internal Curing (IC) concrete to construct superstructure slabs as shown in the contract plans. Internal Curing concrete is a modified Class HP concrete with lightweight fine aggregate substituted for a portion of the standard fine aggregate to aid the curing process internally.

### **MATERIALS**

Manufacture Class HP concrete modified for internal curing according to §501, and the following modifications:

1. The slump range is 100-175 mm. High Range Water-Reducing Admixtures (§711-08, ASTM Type F), are permitted.
2. The maximum w/c ratio is 0.40. Do not include absorbed moisture of the light weight fine aggregate as part of the w/c ratio calculation.
3. Substitute lightweight fine aggregate, meeting the requirements of AASHTO M 195, for 30% (by volume) of standard fine aggregate.

The Regional Materials Engineer, or his representative, will approve the batch weights prior to use. Use these values to manufacture all internally cured high performance concrete and periodically correct the batch weights to account for changes in the fine aggregate fineness modulus and aggregate moisture contents.

### **CONSTRUCTION DETAILS**

Apply the provisions of §557-3 and the following modifications:

1. Add the following to §557-3.01, Concrete Manufacturing and Transporting:
  - a. Construct lightweight fine aggregate stockpile(s) at the production facility so as to maintain uniform moisture throughout the pile. Using a sprinkler system approved by the Materials Engineer. Continuously and uniformly sprinkle the stockpile(s) with water for a minimum of 48 hours, or until the “Absorbed Moisture content” of the aggregate in the stockpile is at least 15% by weight as determined by Test Method NY 703-19E (<https://www.dot.ny.gov/divisions/engineering/technical-services/materials-bureau/forms-manuals>). If a steady rain of comparable intensity occurs, turn off the sprinkler system at the direction of the Materials Engineer, until the rain ceases. At the end of the wetting period, or after the rain ceases, allow stockpiles to drain for 12 to 15 hours immediately prior to use, unless otherwise directed by the Materials Engineer.
  - b. The moisture content of the lightweight fine aggregate must be determined immediately prior to batching, using Test Method NY 703-19E. If the supplied mix design is based on “oven dry” weight of lightweight fine aggregate, a

corresponding adjusted weight must be supplied to account for the actual absorbed moisture content, so that the mix design entered in to the automated batching system is based on SSD weight. After the adjusted mix design is entered into batching system, additional adjustments must be made to the fine aggregate and water quantities to account for the “surface” moisture of the fine aggregates.

- c. The lightweight fine aggregate, at the time of batching must be at least 15% absorbed moisture content. Batch the lightweight fine aggregate first, then routinely batch the fine aggregate, coarse aggregate, admixtures, cement, pozzolan, Microsilica, and remaining mixing water and mix completely.
  - d. Have the lightweight aggregate manufacturer supply a service representative at the site for the first two days of concrete placement operations to assist in the control of IC concrete mixing and placement operations.
2. Make any repairs as per the provisions of §557-3.16, Damaged or Defective Concrete.
  3. The loading limitations of §557-3.14 apply.

**METHOD OF MEASUREMENT**

Apply all the provisions of §557-4.

**BASIS OF PAYMENT**

Apply all the provisions of §557-5.

XX = Friction Type

01 - Type 1 Friction

02 - Type 2 Friction

03 - Type 3 Friction

09 - Type 9 Friction