

**ITEM 17203.0308 M - LIGHTWEIGHT CONCRETE FILL (TYPE A)**

**ITEM 17203.0309 M - LIGHTWEIGHT CONCRETE FILL (TYPE B)**

**DESCRIPTION**

This work shall consist of furnishing and placing lightweight concrete fill of the appropriate type at the locations indicated on the plans or where directed by the Engineer. The work shall be done in accordance with these specifications and in conformity with the lines, grades, thicknesses and typical sections shown on the plans or established by the Engineer in writing.

**MATERIALS**

A. Materials shall meet the requirements of the following:

<b>MATERIALS</b>	<b>SUBSECTION</b>
Portland Cement (Types 1,2 or 3)	701-01
Water	712-01
Admixtures	711-08
Foaming Agent	(SEE BELOW)

The Foaming Agent shall conform to the requirements of ASTM C-869. Foaming Agents which are on the Approved List issued by the Department's Materials Bureau shall be accepted at the site on the basis of the brand name labeled on the Foaming Agent container and certified documentation issued by the supplier.

A Foaming Agent not on the Approved List will be evaluated based on submitted information and sample testing by the NYSDOT Materials Bureau (minimum of six months). For each class of material submitted for evaluation, specimens will be required for testing of compressive strength, air-dry density, freeze-thaw and water absorption characteristics and other testing as deemed appropriate. For detailed information contact the NYSDOT Materials Bureau.

B. The lightweight concrete fill shall conform to one of the following types as specified on the plans and shall be mixed in accordance with the recommendations of a representative of the supplier of the foaming agent:

<b>TYPE</b>	<b>MAXIMUM CAST WET DENSITY</b>	<b>MINIMUM COMPRESSIVE STRENGTH (28 DAYS)</b>
	kN/m <sup>3</sup>	kPa
A	4.7	275
B	6.6	690

The Contractor shall be responsible for designing the mix so that each type of lightweight concrete fill meets the corresponding criteria listed above.

C. During the initial placement of the lightweight concrete fill, the density will be determined at the point of placement and the mix shall be adjusted by the Contractor, as

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required, to obtain the specified Cast Wet Density. Thereafter, the density will be monitored by the Engineer at 30 minute intervals during placing, and the Contractor shall adjust his operations as necessary to maintain the specified Cast Wet Density.

Specimens for determination of the compressive strength will be taken by the Engineer at the point of placement. Sampling will be in accordance with Department procedures as follows:

1. Four representative samples (150 mm x 300 mm cylinders) shall be taken at the point of placement for each day's pour or each 75 cubic meters of material placed, whichever is more frequent. Samples shall be marked for clear identification and all pertinent field information will be recorded on the corresponding field report, Form BR 300, including the station limits and elevation limits of the placement. Slump and air content shall not be measured.
2. Samples shall be obtained by overfilling the cylinders by pouring concrete down the insides of the cylinders, allowing air to escape during filling. **DO NOT ROD THE SAMPLES.** The sides and bottom of the cylinder molds shall be tapped to close any accidentally entrained air voids. Strike off the top of the cylinder (not more the three times) and cover.
3. Samples shall be placed in a location where they will not be disturbed nor subjected to temperatures below 7\_C or above 30\_C. Excessive handling may damage these test cylinders.
4. After 24 hours, the Engineer will ship the cylinders along with the corresponding field test reports to the Materials Bureau for storage and testing. At 28 days the cylinders will be compression tested.

Failure to meet the Cast Wet Density or the strength criterion for the appropriate type may require removal and replacement of that entire lift, and all overlying lifts, at the Contractor's expense based on an engineering evaluation by the Geotechnical Engineering Bureau.

**CONSTRUCTION DETAILS**

Mixing and placing operations shall be under the supervision of the Engineer. A representative of the supplier of the foaming agent shall be on site during the initial placement and at such times as requested by the Engineer to advise the Contractor on his operation. The lightweight concrete fill shall be placed in lifts not to exceed 600 mm unless otherwise approved by the Engineer. Subsequent lifts shall be placed only after a minimum 12 hour waiting period has been observed.

The Lightweight Concrete Fill shall be placed on supporting surfaces which have been cleaned of loose debris, sand, dust, or other foreign materials to the satisfaction of the Engineer. Surfaces against which the lightweight concrete fill is to be placed shall be free of ice, snow or standing water and shall be at a temperature of 1\_C or higher.

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If the ambient air temperature is at or below 7\_ C or is expected to fall below this temperature during the curing period of the lightweight concrete fill, the Engineer may require that the exposed surfaces be covered with insulating blankets or hay, bat insulation, or solid or sprayed foam. The insulating material shall meet the requirements of Subsection 711-07 Form Insulating Materials for Winter Concreting.

**METHOD OF MEASUREMENT**

The quantity of lightweight concrete fill in cubic meters shall be computed from payment limits shown on the plans or from revised payment limits established, in writing, by the Engineer at the time of construction.

**BASIS OF PAYMENT**

The unit price bid per cubic meter shall include the cost of furnishing all equipment, labor, and materials necessary to satisfactorily complete the required work. All costs for insulating, including the insulating material, shall be included in the price bid for this item.

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