

**ITEM 586.93-----05 - SAMPLE AND TEST STRUCTURAL CONCRETE FOR
CHLORIDE ION CONCENTRATION**

DESCRIPTION:

This work shall consist of obtaining powdered mortar samples from the surface of structural concrete elements at locations shown on the plans and performing testing to determine chloride content.

MATERIALS:

None.

CONSTRUCTION DETAILS:

1. Sampling:

At the locations specified on the plans, obtain samples from the surface of the concrete using the following procedure:

- a. Mark sample locations on the concrete surface after asbestos containing paint or other coating has been removed from the portion of the structure being sampled.
- b. Using a clean 9.5 mm diameter carbide bit, drill approximately 6 mm into the surface of the concrete at the marked location. Clean the powder from the sampling area as it may be contaminated. Clean the drill bit with a wire brush and blow off remaining material from the bit with compressed air. Clean out the drill hole with compressed air.
- c. Place a clean receptacle, as approved by the engineer, under the sample location to catch the mortar powder drilled from the hole in the following step. A different receptacle shall be used for each sample location.
- d. Drill approximately 25 to 75 mm into the concrete surface, measured from the face of the concrete element being sampled, retrieving at least 4 grams of Portland cement concrete mortar powder. Drilling may stop if steel reinforcement is encountered during drilling. If enough material can not be obtained from a hole due to encountering steel or other obstruction, take a sample from a nearby location but no more than 100 mm away from the original sample location.
- e. Pour the powder from the receptacle into a clean sample vial, cap it, mark the vial to associate it with a particular sample location and submit the sample with the Materials Bureau Transmittal form to the NYSDOT for chloride content determination (NYSDOT Laboratories, Attn: Rosemary Mahoney, 7 Harriman Campus Road, Albany, N.Y. 12206). At a minimum, the vials shall be sterile polystyrene test tubes with a round bottom and air tight snap cap; outside diameter/length of 12 x 75mm or as approved by the Materials Bureau. At a minimum, packaging shall consist of placing the sample vials in a cardboard box and surrounding them with protective material (ex. bubble wrap) or as

approved by the Materials Bureau to protect the vials from damage during shipping and handling. Transmittal forms will be provided by the EIC.

2. Testing:

Testing of the powdered samples to determine the chloride content shall comply with testing procedures of the Standard Method of Test for Sampling and Testing for Chloride Ion in Concrete and Concrete Raw Materials (AASHTO Designation T260-97 (2005)), and the test results for each vial with associated identifying mark will be submitted in writing or electronically to the Engineer in Charge.

METHOD OF MEASUREMENT:

This work will be measured as the number of samples submitted for testing. Extra payment will not be provided if numerous holes are required to obtain the necessary sample size for a given sample location or if samples are damaged or lost during shipping.

BASIS OF PAYMENT:

The unit price bid for obtaining and testing samples shall include the cost of all packaging, shipping, labor, material and equipment necessary to complete the work. Progress payments will be made at 75 percent of the unit price when the sample is submitted for testing and 25 percent when test results for the sample are received.