

**METHODS OF SAMPLING AND TESTING**  
**MT 111-04**  
**SAMPLING, INSPECTION AND REPORTING**  
**ON PRESTRESSED CONCRETE BEAMS AND PILES**

**1 Scope:**

- 1.1 This method is intended for the purpose of establishing a uniform procedure for the sampling, inspection and reporting of pre-stressed concrete beams and piles.

**2 Referenced Documents:**

**2.1 MT Manual:**

MT-101 Making and Curing Compressive and Flexural Strength Test Specimens  
MT-108 Sampling and Certification of Portland Cement  
MT-201 Sampling Roadway Materials

**3 Materials:**

- 3.1 Materials used in the manufacture of pre-stressed beams will be covered individually to avoid any misunderstanding on the part of the Plant Inspectors.
- 3.1.1 Aggregates will be sampled and tested yearly in accordance with MT-201. One set of samples shall represent each new project ((one set of minus 4.75 mm (No. 4 mesh) and one set of minus 19.0 mm (3/4") aggregate)).
- 3.1.2 Cement will be accepted by certificate in conformance with MT-108, Sampling and Certification of Portland Cement, except that the certification, which accompanies the shipment of cement, shall be kept at the plant where the material is being fabricated. The certificate will be picked up by the Plant Inspector who is charged with the responsibility of making the inspection of the pre-stressed concrete beams and piles, and kept on file in the district laboratory.
- 3.1.3 Wire strand and reinforcing steel will be tested in the Materials Bureau. The samples will be submitted with a copy of the mill test results of the load elongation curve. When shipments of strand are received at the pre-stress plant, each reel will be sampled by obtaining approximately a ten foot long piece of each reel in the shipment. These samples together with reel numbers, heat numbers, and all available information such as size, strength, etc., will be submitted to the Materials Bureau for testing and no strand or any other item or ingredient used in the manufacture of beams, or piles, is to be used until a report of acceptance has been received by the Plant Inspector.
- 3.1.4 Reinforcing steel will be sampled as each new shipment arrives at the plant. Two samples of each size bar, approximately 76.2 mm (30") long, shall be submitted to the Materials Bureau. All of the pertinent information available shall be shown on the accompanying reports.
- 3.1.5 Cylinders representing release breaks will be made by the pre-stress plant personnel and witnessed by MDT. Twenty-eight day strength testing will be in accordance with MT-101. A set of 3 cylinders (28-day breaks) will be fabricated for each beam. Release cylinders will be made in sufficient numbers to perform the required tests prior to release of the strand.
- 3.1.6 Reports will be made to the field as soon as testing is complete. The test results will be sent to the Materials Bureau.

**4 Acceptance:**

- 4.1 Each pre-stress member that the Plant Inspector determines to conform to specification requirements in all respects will be marked with a Circle M stamp before shipment from the plant. This identifying mark will indicate that fabrication procedures, quality of materials and workmanship are satisfactory and the member is complete at the plant.
- 4.2 Absence of a Circle M stamp will indicate a member is not complete, requires corrective work, or that the inspector was not present at the time the member was loaded on the truck for shipment. Deficiencies observed by the Plant Inspector will be noted on the Pre-stress Beam - Final Plant Inspection Check List. Noted deficiencies not corrected before shipment will be transmitted to the field with the Pre-stress Beam Report Lab. Form No. 48.
- 4.3 Members will be inspected at the job site for shipping or handling damage or other defects. The contractor will be notified of any deficiencies as soon as practical.
- 4.4 Final acceptance of the member will be made in the field in accordance with applicable sections of Standard Specifications.

**5 Inspection Report:**

- 5.1 The Plant Inspector will send an inspection report with each beam sent to the project, with copies to the District Office, the Construction Bureau and the Materials Bureau. This report will state that all of the materials that make up the completed beams are covered by acceptable reports that are in the possession of the Plant Inspector. The report will identify the beams by number and will be placed in the report file as an indication that the beams are completed and are acceptable subject to final field inspection.
- 5.2 A supply of Lab. Form No. 48 "Pre-stressed Beam Report" and "Pre-stress Beam - Final Plant Inspection Check List" has been supplied by the Materials Bureau for the convenience of the Plant Inspectors in complying with the above requirements.

MBF Form 48-A  
(4-81)

**PRESTRESS BEAM - FINAL PLANT INSPECTION CHECK LIST**

PROJ. NO.: \_\_\_\_\_ DESIGNATION \_\_\_\_\_

PLANT: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

DATE CAST: \_\_\_\_\_ DATE INSP.: \_\_\_\_\_ DATE RE-INSP.: \_\_\_\_\_

ITEM	INITIAL INSP.		DESCRIPTION AND LOCATION	CORRECTED	
	Sat.	Unsat.		Yes	No
ENDS TRUE					
END FINISH					
CHAMFERS					
ROCK POCKET REPAIRS					
SURFACE DEFECT REPAIRS					
HOLD DOWN HOLES					
BOTTOM FLANGE FINISH					
EXT. BEAM FINISH					
DIMENSION TOLERANCES					
SHEAR REBAR HEIGHT					
BEARING PLATES					
OTHER (LIST)					
Stamped With Circle M <u>Yes</u> ___ <u>No</u> ___					

*Instructions - Final Plant Inspection to be performed when plant foreman or supervisor advises that member is complete. Complete check list during inspection. Furnish copy to plant foreman. Do not apply circle M until all corrections are made. Attach copy to Lab Form No. 48.*