



BUREAU OF MATERIALS MATERIALS PROCEDURES

MP NUMBER: 19-25

EFFECTIVE DATE: 03/03/2025

APPROVAL: Edward Inman

DRAINAGE CASTINGS INSPECTION DUTIES

PURPOSE:

To establish standard procedures for the inspection of drainage castings.

SUPERSEDES:

Materials Procedure Number 27 – Dated 07/01/2008.

REFERENCES:

Special Provisions, Supplemental Specifications, Standard Specifications, Addenda and Attachments
AASHTO M102, M103, M105, M306
ASTM A-48, A-148 Standard Specification for Gray Iron Castings
NJDOT Standard Construction Details

FORMS:

LB-909 – Gray Iron Casting Inspection Report
LB-909SHIP – Gray Iron Casting Shipping Report

I. Assignment Procedures

The inspector shall receive from his/her supervisor the following after insuring the casting Supplier is listed and approved on the projects Material Questionnaire:

- A. The location of the foundry, time of inspection, and person to contact.
- B. Project designation and job code (if applicable).

- C. The quantity and type of castings to be inspected.
- D. All required specifications, equipment and other pertinent data and instructions.
- E. Instruction on whether to obtain test bars.

II. Duties:

The inspector shall:

- A. Upon arrival at the foundry, make their presence known to the responsible foundry representative.
- B. Visually inspect each casting for overall workmanship. Castings shall be free of fused-on sand, runners, risers, and fins, and shall be reasonably smooth in accordance with AASHTO M105. Castings which have been damaged either during manufacture or in shipping may be rejected unless repairs are made which are satisfactory to the purchaser. As per AASHTO M306, check for the following items:
 - 1. Major and/or minor defects as described in sections 5.1.1. and 5.1.2. of AASHTO M306.
 - 2. Foreign castings- Look for "Made in USA". Foreign castings are unacceptable.
 - 3. Foundry name.
 - 4. AASHTO or ASTM designation number.
 - 5. Class by a number followed by a letter indicating the minimum tensile strength and size of test bar.
 - 6. Heat number and date.
- C. Check the level of grates in the frame. This is done by standing on grate with legs apart and shifting your weight to see if the grate rocks in the frame. If it does, the casting is rejected unless repaired. Sets of frames and grates should be identified with numbers.
- D. Randomly select and weigh one casting from ten casts of each type available for inspection. Compare weights with those specified on standard details and record total weight of all castings inspected in diary.
- E. Randomly inspect a minimum of twenty percent of the castings for dimensions according to Standard Construction Details. The maximum spacing between frames and covers shall be 1/8".
- F. Stamp all castings that are acceptable on white patch of paint, that was applied by foundry or dealer, across frame and grate.
- G. For gray iron castings, randomly select lots for tensile strength test. Ensure that test bars are cast according to AASHTO M105.

- H. Mark the test bars before casting to identify and ensure that the same bars are submitted for testing.
- I. Submit the two cast test bars to the Bureau of Materials. Enter sample data to Site Manager Materials for acceptance testing.

III Authority and Responsibility:

Bring to the attention of their supervisor any uncertainties regarding the quality of materials, equipment, methods of operation or sampling. Document the discussion and the corrective action in their diary.

IV. Distribution of Forms:

The inspector shall distribute forms as follows:

<u>Form</u>	<u>Distribution</u>
LB-909	Bureau of Materials File
LB-909SHIP	Producer/Supplier Resident Engineer