



# BUREAU OF MATERIALS

# MATERIALS

# PROCEDURES

**MP NUMBER: 27-08**

**EFFECTIVE DATE: 07/01/2008**

**APPROVAL: Eileen Sheehy**

## **DRAINAGE CASTINGS INSPECTION DUTIES**

### **PURPOSE:**

To establish standard procedures for the inspection of *drainage* castings

### **SUPERSEDES:**

Materials Procedure Number 27 – Dated 10/01/2001

### **REFERENCES:**

Special Provisions, Supplemental Specifications, Standard Specifications, Addenda and Attachments  
AASHTO M102, M103, M105, M306  
ASTM A-48, A-148  
Standard Construction Details

### **FORMS:**

LB-14 - Analysis of Miscellaneous Materials  
LB-88 - Sample Envelope  
LB-196 - Castings Inspection Report  
LB-296 - Notice of Non-complying Material

### **I. Assignment Procedures**

The inspector shall receive from his/her supervisor the following:

- 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 whether or not 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:
  - i. Major and/or minor defects as described in sections 5.1.1. and 5.1.2. of AASHTO M306
  - ii. Foreign castings- Look for "Made in USA". Foreign castings are unacceptable
  - iii. Foundry name
  - iv. AASHTO or ASTM designation number
  - v. Class by a number followed by a letter indicating the minimum tensile strength and size of test bar
  - vi. Heat number and date
- C. Check level of grates in 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 each *ten* cast, 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. 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. Prepare a LB-88 Sample Envelope and a LB-14 Analysis of Miscellaneous Materials and submit the two cast test bars to the Bureau of Materials for testing.

**III Additional Duties:**

The inspector shall:

- A. Complete a LB-196 for approved castings.
- B. Complete a LB-296 for non-complying castings.
- C. Enter a list of materials inspected and approved for stock in the Metal Alloy Section log.

**IV. 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.

**V. Distribution of Forms:**

The inspector shall distribute forms as follows:

<u>Form</u>	<u>Distribution</u>
LB-196	Original - Bureau of Materials Copies to: Contractor (if applicable) Producer or Dealer RE
LB-296.	Original - Bureau of Materials Copy to: RE (if applicable)