

## **5.08 MISCELLANEOUS METALS**

### **5.08.01 GENERAL**

These instructions cover the inspection, sampling and testing of miscellaneous metal products.

### **5.08.02 ALUMINUM ALLOYS AND CAST ALUMINUM**

(a) General.

The manufacturers of aluminum alloys maintain quality control of their products by continuous testing schedules which precludes the identification of any one lot or quantity of material with any particular test. Therefore, certifications state that aluminum materials fall within certain physical and chemical limits. Wrought, rolled and spun products are produced outside of the State, while most cast products are made within or near the State borders.

(b) Basis of Acceptance.

See Standard Specifications Manual Subsection 1626.

Cast products that will be subjected to appreciable stress are the exception to this policy. The aluminum from which the castings are made is shipped to the foundry in ingots where it is remelted, cast and heat treated to a prescribed temper. Since there is a possibility that the alloy might lose its identity, or that heat treatment might not be adequate, it is the Department's policy to test such items prior to acceptance. This policy is especially applicable to stress designed bridge handrail posts cast from Aluminum Association Alloy A444-T4.

(c) Methods of Inspection and Sampling.

Since all aluminum products except castings are shipped to the project without inspection, the Field Engineer must visually inspect the items for compliance with dimensional requirements, identification with certifications, workmanship, damage during handling, shipment, storage, erection, etc.

While cast items have usually been inspected at the point of production, they should be subjected to visual inspection by the Field Engineer to determine manufacturing flaws, dimensional defects and possible handling and shipping damage. If they have not been inspected and sampled at the point of production, sampling in the field will be necessary. If field sampling is required, take one or more castings to represent each lot as defined in the specifications. Forward the sample(s) to the Materials and Research Center for testing. If radiographs accompanied the shipment, forward these to the Materials and Research Center with the sample(s). If radiographs have not been furnished, the castings will be subjected to radiographic examination. In either case specimens will be removed for physical and chemical tests, which will destroy the sample. Therefore, the Contractor must furnish additional castings at no charge to replace those taken for samples.

**5.08.03**      **GALVANIZED COATING OF ACCESSORIES FOR FLAPGATES AND FLOOD GATES**

- (a)    General.

These items are usually fabricated outside the state and shipped to the project without inspection.

- (b)    Basis of Acceptance.

See Standard Specifications Manual Subsection 1623.

**5.08.04**      **SHEET METAL FOR SIGNS**

- (a)    General.

This material is generally produced outside the state and arrives at destination without inspection.

- (b)    Basis of Acceptance.

See Standard Specifications Manual Subsection 1622.

- (c)    Methods of Inspection and Sampling.

Each bundle or package should be examined for marks that will identify the material in the package with the certification. Sheet thickness should be measured with a micrometer.