SAMPLING METALLIC MATERIALS

Scope

1. These methods are intended for use in sampling the respective metallic materials named.

Sampling Bronze Bearing Plates

2. Samples shall be not less than 6 inches in length and 1½ inch in diameter, cast as an integral part of the plate. At least one sample shall be taken, at the point of manufacture, for each melt.

Sampling Castings

3. (a) Cast Iron Castings. – Two samples, not less than 1.20 inch in diameter and 21 inches in length, shall be cast from each melt. These samples are ordinarily obtained at the time of manufacture. All castings as received shall be sounded by means of a hammer to detect possible flaws.

(b) Steel Castings. – Two samples not less than 1¼ inch in diameter and 10 inches in length shall be obtained from each melt at the time of manufacture. All castings as received shall be sounded with a hammer to detect possible flaws.

Sampling Fence Stays (Metal)

4. One random sample shall be cut that is representative of 10 bundles.

Sampling Galvanized Sheet Metal

5. One sample at least 6 inches x 6 inches shall be cut in such a manner as not to disturb or damage the coating. The area in which it is taken shall not be damaged.

Sampling Metal Pipe Products

6. (a) Bituminous Coated Corrugated Metal Pipe

(1) Field Inspection. – Whenever the pipe is shipped from a source outside the Phoenix area, one sample at least 6 inches x 6 inches shall be taken and submitted for testing.

(2) Central Laboratory Inspection. – One sample shall be obtained from each supplier each time a dipping tank is replenished, but no less than one sample per year shall be taken.

(3) Samples shall be taken in an area where the coating has not been disturbed, and in such a manner as not to disturb the coating.

(b) Other Corrugated Metal Pipe

(1) Field Inspection. – Field inspection shall be made before the pipe is installed. This shall consist of the examination of the pipe to determine that the workmanship and fabrication are in accordance with specifications and that the pipe and galvanized coating have not been damaged.

(2) Central Laboratory Inspection. – The central laboratory shall obtain and test one sample of each size pipe at least once a year. The samples shall be sent by each supplier. Sample size shall be at least 6 inches x 6 inches.

(c) Cast Iron Pipe

(1) One piece approximately 16 inches long shall be taken from each size pipe. It shall be taken at least 6 inches from the end of a section.

Sampling Metal Posts

7. Both steel guide posts and fence posts shall be represented by one post selected at random from each project.

Sampling Reinforcing Steel

8. (a) Specifications of the State Highway Department call for one sample at least 4 feet long, selected at random from each shipment.

Sampling Steel Strands, Wire, Anchorages

9. (a) Steel strand is composed of seven wires having a center wire enclosed tightly by 6 helically-wrapped outer wires, forming a single strand for pre-tensioning in prestressed concrete. Samples shall be cut directly from the reel. Discard the first 4 feet, and obtain one sample at least 4 feet long.

(b) Steel wire is uncoated stress-relieved wire used for post-tensioning of prestressed concrete. The manner of obtaining samples shall be identical to 11(a).

(c) Anchorages are wedge-type devices used to anchor post-tensioning wire assemblies. Samples shall be selected at random from a shipment.

Sampling Structural Steel

10. All required sampling of structural steel is performed by the Bridge Division.

Sampling Wire

11. (a) Barbed Wire. – Samples of barbed wire shall be taken directly from the spool. The first 3 feet of wire from the spool shall be discarded and one sample at least 3 feet long shall be obtained. The spool of wire shall be selected at random.

(b) Wire Mesh. – Wire mesh samples shall be selected at random. Each sample shall have dimensions of at least 2 feet x 2 feet.