Standard Practice for

Quality Assurance of Standard Manufactured Materials

AASHTO Designation: R 38-10 (2018)¹

Tech Subcommittee: 5c, Quality Assurance and Environmental

Release: Group 1 (April)



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1. SCOPE

1.1.	This standard practice contains minimum criteria and guidelines for establishing and implementing quality assurance (QA) procedures for <i>standard manufactured materials</i> used in highway construction. The purpose of this document is to establish minimum quality control (QC) requirements for manufacturers and to provide guidelines for acceptance of standard manufactured materials by transportation agencies.
1.2.	 Standard Manufactured Materials—Materials used in transportation construction are broadly categorized according to their source and corresponding methods of production. The three principal materials categories are as follows: Project-produced materials, Fabricated structural materials, and Standard manufactured materials.
1.3.	In order to explain the difference between these materials categories and provide a basic understanding of how QA is applied to them, each of the three primary material categories is defined below (see Section 3). Although QA procedures should be addressed for each of these material categories, the scope of this standard practice is the application of QA to standard manufactured materials.
1.4.	Standard manufactured materials are standard items that are produced routinely (i.e., not for a specific project) by a manufacturer. They are generally characterized by one or more of the following conditions:
1.4.1.	The materials are normally mass-produced under highly controlled and largely automated manufacturing conditions.
1.4.2.	The material properties are stable and have no potential for alteration under proper transportation from the manufacturer to the project site.
1.4.3.	The materials arrive at the project site in a solid, finished state and require only installation.
1.5.	<i>Relevant Items</i> —This standard practice addresses those items used in transportation construction that meet the above description of standard manufactured materials. Some examples of standard manufactured materials used in transportation construction are presented in Table 1 below. The list

of items in Table 1 is not all-inclusive but is intended to provide examples of typical items within each of the three principal materials categories.

 Table 1—Typical Items by Materials Category

Materials Category	Example Items
Project-Produced Materials	Earthwork
	Subbase and Base Courses
	Geotechnical Items*
	Hot Mix Asphalt (HMA)*
	Portland Cement Concrete (PCC)*
	Field Applied Structural Coatings*
	Pavement Markings*
Fabricated Structural Materials	Fabricated Structural Steel and Coatings*
	Precast/Prestressed Concrete Structural Elements* (e.g., Precast Box Culverts, Prestressed Bridge Beams)
Standard Manufactured Material	Binders and Cements (e.g., PG Binder, Portland Cement)
	Drainage or Water Systems (e.g., Ductile Iron Pipe, Corrugated Metal Pipe, PVC Pipe, Hydrants, Gates and Valves, etc.)
	Geotextile Fabrics
	Landscaping Items (e.g., Lime, Fertilizer, Seed, Mulch, Chain Link Fence, etc.)
	Paints and Coatings (e.g., Traffic Paints, Glass Beads, Preformed Markings, Epoxy, Zinc Galvanizing, etc.)
	Roadside Safety Devices (e.g., Impact Attenuators, Steel Beam Guardrail, Wood Posts, etc.)
	Standard Precast Concrete Items (e.g., Concrete Pipe, Concrete
	Manholes and Junction Boxes, Concrete Barrier, Concrete MSE Wall Panels, etc.)
	Standard Steel Shapes or Products (e.g., Anchor Bolts, Frames and Grates, Rebar, Stay-in-Place Forms, Sheeting and Piles, etc.)
	Traffic Control Devices (e.g., Electrical Conduit, Signal Heads, Signal Poles, Controllers, Signs, etc.)

* Some constituent materials incorporated are evaluated as standard manufactured materials.

2. REFERENCED DOCUMENTS

- 2.1. *AASHTO Standard*:
 - R 18, Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories

2.2. *ASTM Standards*:

- D3665, Standard Practice for Random Sampling of Construction Materials
- E4, Standard Practices for Force Verification of Testing Machines
- E105, Standard Practice for Probability Sampling of Materials

2.3. *Other Document*:

■ ISO 10013:2001, Guidelines for Quality Management System Documentation

3. TERMINOLOGY

3.1. *Relevant Terms and Definitions*—The terms and definitions included below are provided to ensure standard application of terminology relevant to the QA of transportation construction materials, including standard manufactured materials. Where terms or definitions in this standard practice differ from the above-referenced documents, the terms included herein shall replace those contained in the above-referenced documents.