

STANDARD SPECIFICATIONS
for
TRANSPORTATION MATERIALS
and
METHODS OF SAMPLING AND TESTING

2017

METALLIC MATERIALS FOR BRIDGES

Adopted by the



INTRODUCTION TO MATERIALS STANDARDS

Overall Organization, Release Schedule, and Subject Areas

The 2017 Edition of *Standard Specifications for Transportation Materials and Methods of Sampling and Testing and AASHTO Provisional Standards* is divided into three parts; this compilation includes standards in all three parts. Part 1 contains specifications and practices for materials; Part 2 includes methods of testing and specifications for testing equipment, many of which contain both U.S. Customary and Metric units of measure; and Part 3 contains provisional standards. A number of specifications were included in this publication at the request of the AASHTO Subcommittee on Bridges and Structures.

Updates are released annually in three groups, broken up by subject area. Summaries of changes and revision charts are provided for each release for Part 1, Part 2, and Part 3. When a standard is revised or reconfirmed, the release number will appear, with month and year in parentheses, beneath the designation number. Releases 1 through 3 occur in April, June, and August, respectively, covering the following subjects:

- *Release 1*—Hydraulic Cement and Lime; Fresh Concrete; Hardened Concrete; Pavement Measurement; Bridge and Pavement Preservation; and Quality Assurance and Environmental.
- *Release 2*—General Manufactured Materials.
- *Release 3*—Geotechnical; and Bituminous Materials and Mixtures.

These compilations are offered starting with the 2017 Edition. Since they are based on a broader category of materials, they may include standards from more than one release group and thus are produced after Release 3.

Summary of Changes—Metallic Materials for Bridges^a

	Part 1		Part 2 Tests	Part 3 Provisionals	All Parts
	Specifications	Practices			
Total standards	16	0	12	3	31
Revised	0	0	0	0	0
Reconfirmed	1	0	2	1	4
New	1	0	5	1	7
Discontinued ^b	0	0	0	1	1
Deleted ^b	0	0	0	0	0

^a See About AASHTO Designation Numbers for a discussion of these terms.

^b Part 3 discontinued and deleted counts include those provisionals that have been adopted as full standards.

Authorship

General jurisdiction over Association standards in this field rests with the AASHTO Highway Subcommittee on Materials, which has members representing each of the 50 States, the Commonwealth of Puerto Rico, and the District of Columbia that constitute the Member Departments of the Association, and the U.S. Department of Transportation. In addition, the Subcommittee has representation from several of its Associate Members, including the New Jersey Turnpike Authority, the Pennsylvania Turnpike Authority, and The Port Authority of New York and New Jersey. Also represented on the Subcommittee are some of the Association’s International Associate members, including the Canadian Provinces of Nova Scotia and Ontario. A list of the member–authors as of the Subcommittee’s most recent annual meeting precedes this Introduction.

Beginning in 1993 with the Sixteenth Edition, material specifications and test methods are published by AASHTO each year. Annual revisions are voted on by the Association's 52 Member Departments prior to the publication of each new edition and, if approved by at least two-thirds of the Member Departments, they are included in the edition as standards of the Association.

Types of Updates

A full or provisional standard is designated as *revised* if technical changes have been balloted and approved by the Subcommittee. A standard is designated as *reconfirmed* if it has undergone technical review to determine that it is still up to date and in use, and that it does not require revision; such a review is required:

- every four years for a full standard, and
- every one or two years for a provisional standard, depending on its progress through its 8-year provisional life cycle.

If a standard is no longer used, it may be *discontinued* by Subcommittee vote, in which case the standard header alone will be published that year with a notice saying that the standard has been discontinued and giving a brief explanation as to why. In subsequent years, the standard will be *deleted* from the publication, meaning that it is no longer maintained by the Subcommittee. A discontinued standard will appear in the subject and numeric Tables of Contents with "Discontinued" immediately after its designation number. Any deleted standards will be listed separately the first year they are not included; in subsequent years, they are not listed.

Likewise, if a standard is *reclassified* from one standard type to another (specification/practice/test), this action is undertaken by Subcommittee vote. The standard header alone will be published that year with a notice saying that the standard has been discontinued and giving the new standard number. In subsequent years, the old standard will be *deleted* from the publication. A reclassified standard will appear in the subject and numeric Tables of Contents with "Reclassified" immediately after its designation number. Any reclassified standards will be listed separately the first year they are not included; in subsequent years, they are not listed.

More information about the structure and meaning of designation numbers is included at the end of all Tables of Contents.

ASTM Equivalency

Many of these standards agree with those of the American Society for Testing and Materials (ASTM). In all cases where the Association and ASTM standards are technically identical, or substantially identical with some changes, reference to the ASTM designation number is shown in the heading of the specification.

In previous editions, AASHTO has printed ASTM standards which have been adopted by AASHTO and given an AASHTO designation. This was done under a long-standing copyright arrangement between AASHTO and ASTM. Starting with the Thirty-First Edition, AASHTO-approved ASTM standards are not printed. Instead, the AASHTO specification includes the corresponding ASTM designation number and any AASHTO exception to the ASTM specification. A complete list of AASHTO specifications with corresponding ASTM standards is included for Part 1 and Part 2.

Mandatory and Nonmandatory Additional Content

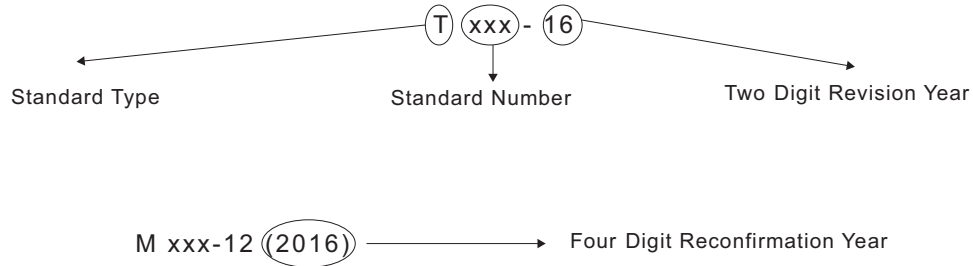
Per the *Style Manual for AASHTO Publications* and the Subcommittee's guidelines, standards may include supplementary requirements, annexes, appendixes, and notes. Some are mandatory and some are not.

- Supplementary requirements apply only when specified within a contract.
- Annexes are mandatory requirements.
- Appendixes are nonmandatory information.
- Numbered notes, whether within the text or listed as endnotes, are nonmandatory, explanatory material.
- Lettered notes in tables and figures are mandatory except when they occur in appendixes or in supplementary requirements not specified within a contract.

ABOUT AASHTO DESIGNATION NUMBERS

Anatomy of a Designation Number

Components



Standard Types

Standard types are represented by a one-letter abbreviation for full standards. The letter “P” is added for provisional standards. The standard type abbreviations are as follows:

- M (Materials, full)
- T (Test, full)
- R (PRactice, full)
- MP (Materials, provisional)
- TP (Test, provisional)
- PP (Practice, provisional)

Standard Numbers

Standard numbers are sequential within standard type. Thus, a provisional that is subsequently adopted as a full standard will receive a new number.

Revised vs. Reconfirmed and Discontinued vs. Deleted

A full or provisional standard is designated as *revised* if technical changes have been balloted and approved by AASHTO’s Highways Subcommittee on Materials. A standard is designated as *reconfirmed* if it has undergone technical review to determine that it is up to date and in use and that it does not require revision; such a review is required:

- every four years for a full standard, and
- every one or two years for a provisional standard, depending on its progress through its 8-year provisional life cycle.

If a standard is no longer used, it may be *discontinued* by Subcommittee vote, in which case the standard header will be published that year with a notice saying that the standard has been discontinued and giving a brief explanation as to why. In subsequent years, the standard will be *deleted* from the book, meaning that it is no longer maintained.

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LIST OF TECHNICAL CHANGES, 2017

The balloted technical changes listed below are also indicated in the specifications by a change bar in the left margin and highlighted (for additions) or struck-through (for deletions) text. Unballoted editorial changes do not receive the change bar, highlighting, or strike-through; however, any standard that is neither revised nor reconfirmed but contains such changes does include an endnote stating that minor editorial revisions have been made.

Designation Number	Title	Technical Section Number	Balloted Revisions
M 227M/M 227-13 (2017)	Steel Bars, Carbon, Merchant Quality, Mechanical Properties	4f	Reconfirmed.
M 334M/M 334-17	Uncoated, Corrosion-Resistant, Deformed and Plain Chromium Alloyed, Billet-Steel Bars for Concrete Reinforcement and Dowels	4f	Adopted AASHTO Provisional standard MP 18M/M 18 (excluding annexes) as a full standard specification, M 334/M 334.
T 65M/T 65-13 (2017)	Mass [Weight] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings	4f	Reconfirmed for 2017 publication.
T 243M/T 243-08 (2017)	Sampling Procedure for Impact Testing of Structural Steel	4f	Reconfirmed for 2017 publication.
T 372M/T 372-17	Sensitivity of Stainless Steel to Intergranular Attack	4f	Adopted Annex A1 of former Provisional standard MP 18M/MP 18 as a full standard.
T 373M/T 373-17	Comparative Qualitative Corrosion Characterization of Steel Bars Used for Concrete Reinforcement (Linear Polarization Resistance and Potentiodynamic Polarization Tests)	4f	Adopted Annex A2 of former Provisional standard MP 18M/MP 18 as a full standard.

Designation Number	Title	Technical Section Number	Balloted Revisions
T 374M/T 374-17	Comparative Qualitative Corrosion Characterization of Uncoated Chromium-Alloyed Steel Bars Used for Concrete Reinforcement (Tombstone Test)	4f	Adopted Annex A3 of former Provisional standard MP 18M/MP 18 as a full standard.
T 375M/T 375-17	Identification of Iron-Based Alloy Steel Bars for Concrete Reinforcement or Dowels by Handheld X-Ray Fluorescence (XRF) Spectrometer	4f	Adopted Annex B1 of former Provisional standard MP 18M/MP 18 as a full standard.
T 376M/T 376-17	Macrocell Slab Chloride Threshold	4f	Adopted as a new standard.
MP 18M/MP 18-15	Uncoated, Corrosion-Resistant, Deformed and Plain Alloy, Billet-Steel Bars for Concrete Reinforcement and Dowels	4f	MP 18M/MP 18 (excluding annexes) was adopted as M 334M/M 334. Annexes were adopted as the following: A1—T 372M/T 372 A2—T 373M/T 373 A3—T 374M/T 374 B1—T 375M/T 375
MP 30M/MP30-17	Steel Wire and Welded Wire, Plain and Deformed, for Concrete	4f	New.
TP 84-11 (2017)	Evaluation of Adhesive Anchors in Concrete Under Sustained Loading Conditions	4c	Extended.