

STANDARD SPECIFICATIONS
for
TRANSPORTATION MATERIALS
and
METHODS OF SAMPLING AND TESTING
and
PROVISIONAL STANDARDS

40TH EDITION

GROUP 3 (JULY 2020)

PART 1: SPECIFICATIONS AND PRACTICES

PART 2: TEST METHODS

PART 3: PROVISIONALS

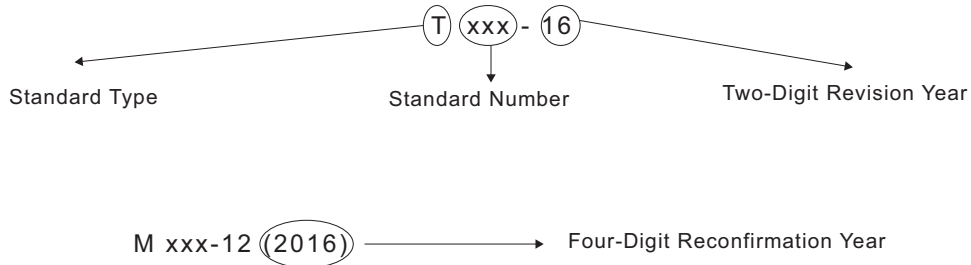
Adopted by the



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 In subsequent years, the standard will be *deleted* from the book, meaning that it is no longer maintained.

PART 1—STANDARD SPECIFICATIONS AND STANDARD PRACTICES

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M 45-16 (2020)	Aggregate for Masonry Mortar
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M 320-17	Performance-Graded Asphalt Binder
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R 83-17	Preparation of Cylindrical Performance Test Specimens Using the Superpave Gyrotory Compactor (SGC)
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M 145-91 (2017)	Classification of Soils and Soil–Aggregate Mixtures for Highway Construction Purposes
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M 195-11 (2019)	Lightweight Aggregates for Structural Concrete
M 208-18	Cationic Emulsified Asphalt
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M 320-17	Performance-Graded Asphalt Binder
M 323-17	Superpave Volumetric Mix Design
M 325-08 (2017)	Stone Matrix Asphalt (SMA)
M 332-20	Performance-Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test
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R 27-01 (2019)	Assessment of Corrosion of Steel Piling for Non-Marine Applications
R 28-12 (2016)	Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)
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None

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T 209-20	Theoretical Maximum Specific Gravity (G_{mm}) and Density of Asphalt Mixtures
T 210-15 (2019)	Aggregate Durability Index
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T 215-14 (2018)	Permeability of Granular Soils (Constant Head)
T 216-07 (2020)	One-Dimensional Consolidation Properties of Soils
T 217-14 (2018)	Determination of Moisture in Soils by Means of a Calcium Carbide Gas Pressure Moisture Tester
T 220-66 (2018)	Determination of the Strength of Soil–Lime Mixtures
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T 222-81 (2017)	Nonrepetitive Static Plate Load Test of Soils and Flexible Pavement Components for Use in Evaluation and Design of Airport and Highway Pavements
T 223-96 (2017)	Field Vane Shear Test in Cohesive Soil
T 225-16 (2020)	Diamond Core Drilling for Site Investigation
T 226-90 (2018)	Triaxial Compressive Strength of Undrained Rock Core Specimens without Pore Pressure Measurements
T 228-09 (2018)	Specific Gravity of Semi-Solid Asphalt Materials
T 233-02 (2019)	Density of Soil In-Place by Block, Chunk, or Core Sampling
T 236-08 (2018)	Direct Shear Test of Soils under Consolidated Drained Conditions
T 240-13 (2017)	Effect of Heat and Air on a Moving Film of Asphalt Binder (Rolling Thin-Film Oven Test)
T 245-15 (2019)	Resistance to Plastic Flow of Asphalt Mixtures Using Marshall Apparatus
T 246-10 (2019)	Resistance to Deformation and Cohesion of Hot Mix Asphalt (HMA) by Means of Hveem Apparatus
T 247-10 (2019)	Preparation of Test Specimens of Hot Mix Asphalt (HMA) by Means of California Kneading Compactor
T 252-19	Measurements of Pore Pressures in Soils
T 255-00 (2017)	Total Evaporable Moisture Content of Aggregate by Drying
T 258-81 (2018)	Determining Expansive Soils
T 265-15 (2019)	Laboratory Determination of Moisture Content of Soils

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T 267-86 (2018)	Determination of Organic Content in Soils by Loss on Ignition
T 269-14 (2018)	Percent Air Voids in Compacted Dense and Open Asphalt Mixtures
T 272-18	One-Point Method for Determining Maximum Dry Density and Optimum Moisture
T 273-86 (2018)	Soil Suction
T 275-17	Bulk Specific Gravity (G_{mb}) of Compacted Asphalt Mixtures Using Paraffin-Coated Specimens
T 283-14 (2018)	Resistance of Compacted Asphalt Mixtures to Moisture-Induced Damage
T 287-20	Asphalt Binder Content of Asphalt Mixtures by the Nuclear Method
T 288-12 (2016)	Determining Minimum Laboratory Soil Resistivity
T 289-91 (2018)	Determining pH of Soil for Use in Corrosion Testing
T 290-95 (2020)	Determining Water-Soluble Sulfate Ion Content in Soil
T 291-94 (2018)	Determining Water-Soluble Chloride Ion Content in Soil
T 295-13 (2017)	Specific Gravity or API Gravity of Liquid Asphalts by Hydrometer Method
T 296-10 (2020)	Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression
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T 300-11 (2020)	Force Ductility Test of Asphalt Materials
T 301-13 (2017)	Elastic Recovery Test of Asphalt Materials by Means of a Ductilometer
T 302-15 (2019)	Polymer Content of Polymer-Modified Emulsified Asphalt Residue and Asphalt Binders
T 303-00 (2017)	Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction
T 304-17 (2020)	Uncompacted Void Content of Fine Aggregate
T 305-14 (2018)	Determination of Draindown Characteristics in Uncompacted Asphalt Mixtures
T 306-11 (2019)	Progressing Auger Borings for Geotechnical Explorations
T 307-99 (2017)	Determining the Resilient Modulus of Soils and Aggregate Materials
T 308-18	Determining the Asphalt Binder Content of Hot Mix Asphalt (HMA) by the Ignition Method
T 310-19	In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
T 311-20	Grain-Size Analysis of Granular Soil Materials
T 312-19	Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyrotory Compactor
T 313-19	Determining the Flexural Creep Stiffness of Asphalt Binder Using the Bending Beam Rheometer (BBR)
T 314-12 (2016)	Determining the Fracture Properties of Asphalt Binder in Direct Tension (DT)
T 315-20	Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)
T 316-19	Viscosity Determination of Asphalt Binder Using Rotational Viscometer
T 319-15 (2019)	Quantitative Extraction and Recovery of Asphalt Binder from Asphalt Mixtures
T 320-07 (2020)	Determining the Permanent Shear Strain and Stiffness of Asphalt Mixtures Using the Superpave Shear Tester (SST)
T 321-17	Determining the Fatigue Life of Compacted Asphalt Mixtures Subjected to Repeated Flexural Bending
T 322-07 (2020)	Determining the Creep Compliance and Strength of Hot Mix Asphalt (HMA) Using the Indirect Tensile Test Device
T 324-19	Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures
T 326-05 (2018)	Uncompacted Void Content of Coarse Aggregate (As Influenced by Particle Shape, Surface Texture, and Grading)
T 327-12 (2020)	Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus
T 329-15 (2019)	Moisture Content of Asphalt Mixtures by Oven Method
T 330-07 (2019)	The Qualitative Detection of Harmful Clays of the Smectite Group in Aggregates Using Methylene Blue

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T 331-13 (2017)	Bulk Specific Gravity (G_{mb}) and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method
T 335-09 (2018)	Determining the Percentage of Fracture in Coarse Aggregate
T 340-10 (2019)	Determining Rutting Susceptibility of Hot Mix Asphalt (HMA) Using the Asphalt Pavement Analyzer (APA)
T 342-11 (2019)	Determining Dynamic Modulus of Hot Mix Asphalt (HMA)
T 343-12 (2020)	Density of In-Place Hot Mix Asphalt (HMA) Pavement by Electronic Surface Contact Devices
T 344-12 (2020)	Evaluation of Superpave Gyratory Compactor (SGC) Internal Angle of Gyration Using Simulated Loading
T 350-19	Multiple Stress Creep Recovery (MSCR) Test of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)
T 354-17	Specific Gravity and Absorption of Aggregate by Volumetric Immersion Method
T 355-18	In-Place Density of Asphalt Mixtures by Nuclear Methods
T 361-16 (2020)	Determining Asphalt Binder Bond Strength by Means of the Binder Bond Strength (BBS) Test
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T 383-19	Evaluation of Asphalt Release Agents (ARAs)
T 385-19	Deep Foundation Elements under Bidirectional Static Axial Compressive Load
T 386-19	Rapid Axial Compressive Load Testing of Deep Foundation Units
T 387-19	Determining the Cracking Temperature of Asphalt Binder Using the Asphalt Binder Cracking Device (ABCD)
T 391-20	Estimating Fatigue Resistance of Asphalt Binders Using the Linear Amplitude Sweep

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T 168-03 (2016)	Sampling Bituminous Paving Mixtures
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MP 23-15 (2020)	Reclaimed Asphalt Shingles for Use in Asphalt Mixtures
MP 31-17	Materials for Cold Recycled Mixtures with Emulsified Asphalt
MP 36-18 (2020)	Materials for Asphalt Tack Coat
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PP 78-17 (2020)	Design Considerations When Using Reclaimed Asphalt Shingles (RAS) in Asphalt Mixtures
PP 86-20	Emulsified Asphalt Content of Cold Recycled Mixture Designs
PP 93-18 (2020)	Asphalt Tack Coat Design
PP 94-18 (2020)	Determining Optimum Asphalt Content of Cold Recycled Mixture with Foamed Asphalt
PP 95-18 (2020)	Preparation of Indirect Tension Performance Test Specimens
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PP 99-19	Preparation of Small Cylindrical Performance Test Specimens Using the Superpave Gyrotory Compactor (SGC) or Field Cores
TP 101-12 (2018)	<i>Adopted</i> —Estimating Fatigue Resistance of Asphalt Binders Using the Linear Amplitude Sweep
TP 105-20	Determining the Fracture Energy of Asphalt Mixtures Using the Semicircular Bend Geometry (SCB)
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TP 108-14 (2020)	Abrasion Loss of Asphalt Mixture Specimens
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TP 114-18 (2019)	Determining the Interlayer Shear Strength (ISS) of Asphalt Pavement Layers
TP 115-16 (2019)	Determining the Quality of Tack Coat Adhesion to the Surface of an Asphalt Pavement in the Field or Laboratory
TP 116-20	Rutting Resistance of Asphalt Mixtures Using Incremental Repeated Load Permanent Deformation (IRLPD)
TP 117-15 (2019)	Determination of the Voids of Dry Compacted Filler

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TP 124-20	Determining the Fracture Potential of Asphalt Mixtures Using Semicircular Bend Geometry (SCB) at Intermediate Temperature
TP 125-16 (2020)	Determining the Flexural Creep Stiffness of Asphalt Mixtures Using the Bending Beam Rheometer (BBR)
TP 127-17 (2019)	Determining the Fracture Energy Density of Asphalt Binder Using the Binder Fracture Energy (BFE) Test
TP 128-17 (2019)	Evaluation of Oxidation Level of Asphalt Mixtures by a Portable Infrared Spectrometer
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TP 132-19	Determining the Dynamic Modulus for Asphalt Mixtures Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT)
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TP 134-19	Stress Sweep Rutting (SSR) Test Using Asphalt Mixture Performance Tester (AMPT)
TP 140-20	Moisture Sensitivity Using Hydrostatic Pore Pressure to Determine Cohesion and Adhesion Strength of Compacted Asphalt Mixture Specimens
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TP 92-14 (2018)	Determining the Cracking Temperature of Asphalt Binder Using the Asphalt Binder Cracking Device (ABCD)
TP 100-12 (2016)	Deep Foundation Elements for Bi-Directional Static Axial Compressive Load
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MP 37-18 (2020)	Performance-Graded Asphalt Binder for Surface Treatments
MP 38-18 (2020)	Mix Design of Cold Recycled Mixture with Foamed Asphalt
MP 46-20	Balanced Mix Design

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PP 76-13 (2020)	Troubleshooting Asphalt Specimen Volumetric Differences between Superpave Gyrotory Compactors (SCGs) Used in the Design and the Field Management of Superpave Mixtures
PP 77-14 (2020)	Materials Selection and Mixture Design of Permeable Friction Courses (PFCs)
PP 78-17 (2020)	Design Considerations When Using Reclaimed Asphalt Shingles (RAS) in Asphalt Mixtures
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TP 101-12 (2018)	<i>Adopted</i> —Estimating Fatigue Resistance of Asphalt Binders Using the Linear Amplitude Sweep
TP 105-20	Determining the Fracture Energy of Asphalt Mixtures Using the Semicircular Bend Geometry (SCB)
TP 107-18 (2020)	Determining the Damage Characteristic Curve of Asphalt Mixtures from Direct Tension Cyclic Fatigue Tests
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TP 113-15 (2019)	Determination of Asphalt Binder Resistance to Ductile Failure Using Double-Edge-Notched Tension (DENT) Test
TP 114-18 (2019)	Determining the Interlayer Shear Strength (ISS) of Asphalt Pavement Layers
TP 115-16 (2019)	Determining the Quality of Tack Coat Adhesion to the Surface of an Asphalt Pavement in the Field or Laboratory
TP 116-20	Rutting Resistance of Asphalt Mixtures Using Incremental Repeated Load Permanent Deformation (iRLPD)
TP 117-15 (2019)	Determination of the Voids of Dry Compacted Filler
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TP 122-16 (2020)	Determination of Performance Grade of Physically Aged Asphalt Binder Using Extended Bending Beam Rheometer (BBR) Method
TP 123-16 (2020)	Measuring Asphalt Binder Yield Energy and Elastic Recovery Using the Dynamic Shear Rheometer
TP 124-20	Determining the Fracture Potential of Asphalt Mixtures Using Semicircular Bend Geometry (SCB) at Intermediate Temperature
TP 125-16 (2020)	Determining the Flexural Creep Stiffness of Asphalt Mixtures Using the Bending Beam Rheometer (BBR)
TP 127-17 (2019)	Determining the Fracture Energy Density of Asphalt Binder Using the Binder Fracture Energy (BFE) Test
TP 128-17 (2019)	Evaluation of Oxidation Level of Asphalt Mixtures by a Portable Infrared Spectrometer
TP 131-18 (2020)	Determining Dynamic Modulus of Asphalt Concrete Using the Indirect Tension Test

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TP 132-19	Determining the Dynamic Modulus for Asphalt Mixtures Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT)
TP 133-19	Determining the Damage Characteristic Curve and Failure Criterion Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT) Cyclic Fatigue Test
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TP 140-20	Moisture Sensitivity Using Hydrostatic Pore Pressure to Determine Cohesion and Adhesion Strength of Compacted Asphalt Mixture Specimens
TP 141-20	Determining the Indirect Tensile Nflex Factor to Assess the Cracking Resistance of Asphalt Mixtures

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TP 92-14 (2018)	Determining the Cracking Temperature of Asphalt Binder Using the Asphalt Binder Cracking Device (ABCD)
TP 100-12 (2018)	Deep Foundation Elements for Bi-Directional Static Axial Compressive Load
TP 104-13 (2015)	Rapid Axial Compressive Load Testing of Deep Foundation Units

LIST OF TECHNICAL CHANGES—PART 1

The balloted technical changes listed below are also indicated in the specifications by a change bar in the left margin. Unballoted editorial changes do not receive the change bar; 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.

Release: Group 3 (July 2020)

Designation Number	Title	Technical Subcommittee Number	Balloted Revisions
M 29-12 (2020)	Fine Aggregate for Bituminous Paving Mixtures	1c	Reconfirmed for 2020 publication.
M 45-16 (2020)	Aggregate for Masonry Mortar	1c	Reconfirmed for 2020 publication.
M 140-20	Emulsified Asphalt	2a	Added HFSM-1 to Table 1.
M 332-20	Performance-Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test	2b	Minor revisions: <ul style="list-style-type: none"> • Clarified terminology in Sections 1.2 and 4.2. • Removed confusing terminology in Table 1, note g.
R 13-12 (2020)	Conducting Geotechnical Subsurface Investigations	1b	Reconfirmed for 2020 publication.
R 66-16 (2020)	Sampling Asphalt Materials	2a	Reconfirmed for 2020 publication.
R 67-20	Sampling Asphalt Mixtures after Compaction (Obtaining Cores)	2c	Revised as follows: <ul style="list-style-type: none"> • Added an appendix with instructions for removing cut-aggregate particles from pavement cores in preparation for further testing. • Other minor revisions throughout.
R 74-16 (2020)	Wet Preparation of Disturbed Soil Samples for Test	1a	Reconfirmed for 2020 publication.
R 75-16 (2020)	Developing a Family of Curves	1b	Reconfirmed for 2020 publication.
R 76-16 (2020)	Reducing Samples of Aggregate to Testing Size	1c	Reconfirmed for 2020 publication.
R 77-16 (2020)	Certifying Suppliers of Emulsified Asphalt	2a	Reconfirmed for 2020 publication.
R 78-16 (2020)	Recovering Residue from Emulsified Asphalt Using Low-Temperature Evaporative Techniques	2a	Reconfirmed for 2020 publication.

LIST OF TECHNICAL CHANGES—PART 2

The balloted technical changes listed below are also indicated in the specifications by a change bar in the left. Unballoted editorial changes do not receive the change bar; 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.

Release: Group 3 (July 2020)

Designation Number	Title	Technical Subcommittee Number	Balloted Revisions
T 11-20	Materials Finer Than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing	1c	Updated language on mechanical washing apparatus, including how long the apparatus can run, based on findings in <i>NCHRP Research Results Digest 389</i> .
T 21M/T 21-20	Organic Impurities in Fine Aggregates for Concrete	1c	Revised to reflect recent ASTM C40 updates on Gardner color scale.
T 27-20	Sieve Analysis of Fine and Coarse Aggregates	1c	Revised to align as well as possible with recently adopted T 30 changes.
T 37-07 (2020)	Sieve Analysis of Mineral Filler for Hot Mix Asphalt (HMA)	2c	Reconfirmed for 2020 publication.
T 79-12 (2020)	Flash Point with Tag Open-Cup Apparatus for Use with Material Having a Flash Point Less Than 93°C (200°F)	2a	Reconfirmed for 2020 publication.
T 88-20	Particle Size Analysis of Soils	1a	Revised Section 3.1.5 to add a tolerance of ± 1 in. to cylinder height.
T 90-20	Determining the Plastic Limit and Plasticity Index of Soils	1a	Revised Section 6.4 to clarify when a satisfactory endpoint for the plastic limit has been reached.
T 104-99 (2020)	Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate	1c	Reconfirmed for 2020 publication.
T 110-03 (2020)	Moisture or Volatile Distillates in Hot Mix Asphalt (HMA)	2c	Reconfirmed for 2020 publication.
T 166-16 (2020)	Bulk Specific Gravity (G_{mb}) of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens	2c	Reconfirmed for 2020 publication.
T 168-03 (2016)	Sampling Bituminous Paving Mixtures	2c	Deleted.
T 180-20	Moisture–Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop	1b	Revised to add a precision and bias statement.

Designation Number	Title	Technical Subcommittee Number	Balloted Revisions
T 207-12 (2020)	Thin-Walled Tube Sampling of Soils	1b	Reconfirmed for 2020 publication.
T 209-20	Theoretical Maximum Specific Gravity (G_{mm}) and Density of Asphalt Mixtures	2c	Revised to include <ul style="list-style-type: none"> an equation and an example for calculating the weighted average maximum specific gravity of large-size samples tested in portions and an option for obtaining samples from pavement cores.
T 216-07 (2020)	One-Dimensional Consolidation Properties of Soils	1a	Reconfirmed for 2020 publication.
T 225-16 (2020)	Diamond Core Drilling for Site Investigation	1b	Reconfirmed for 2020 publication.
T 287-20	Asphalt Binder Content of Asphalt Mixtures by the Nuclear Method	2c	Revised as follows: <ul style="list-style-type: none"> Added a minimum test (count) time of 4 min. as a requirement in Section 8.7. Added a note indicating that precision of the test results may be improved with longer test times.
T 290-95 (2020)	Determining Water-Soluble Sulfate Ion Content in Soil	1a	Reconfirmed for 2020 publication.
T 296-10 (2020)	Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression	1a	Reconfirmed for 2020 publication.
T 300-11 (2020)	Force Ductility Test of Asphalt Materials	2a	Reconfirmed for 2020 publication.
T 304-17 (2020)	Uncompacted Void Content of Fine Aggregate	1c	Reconfirmed for 2020 publication.
T 311-20	Grain-Size Analysis of Granular Soil Materials	1a	Revised Sections 2.1 and 7.4 to include reference to PP 97 and to clarify how constant mass is defined.
T 315-20	Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)	2b	Revised Sections 12.2 and X1.8.1 to reconcile contradictory statements regarding linear region reference.
T 320-07 (2020)	Determining the Permanent Shear Strain and Stiffness of Asphalt Mixtures Using the Superpave Shear Tester (SST)	2d	Reconfirmed for 2020 publication.
T 322-07 (2020)	Determining the Creep Compliance and Strength of Hot Mix Asphalt (HMA) Using the Indirect Tensile Test Device	2d	Reconfirmed for 2020 publication.
T 327-12 (2020)	Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus	1c	Reconfirmed for 2020 publication.

Designation Number	Title	Technical Subcommittee Number	Balloted Revisions
T 343-12 (2020)	Density of In-Place Hot Mix Asphalt (HMA) Pavement by Electronic Surface Contact Devices	2c	Reconfirmed for 2020 publication.
T 344-12 (2020)	Evaluation of Superpave Gyratory Compactor (SGC) Internal Angle of Gyration Using Simulated Loading	2d	Reconfirmed for 2020 publication.
T 361-16 (2020)	Determining Asphalt Binder Bond Strength by Means of the Binder Bond Strength (BBS) Test	2a	Reconfirmed for 2020 publication.
T 382-20	Determining the Viscosity of Emulsified Asphalt by a Rotational Paddle Viscometer	2a	Revised to include <ul style="list-style-type: none"> • corrections to the tolerances in the figures and • other revisions throughout, in particular in Sections 8 and 9.
T 391-20	Estimating Fatigue Resistance of Asphalt Binders Using the Linear Amplitude Sweep	2b	Adopted AASHTO Provisional standard TP 101 as a full standard method of test; changed to dual units for equivalency with ASTM.

LIST OF TECHNICAL CHANGES—PART 3

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Release: Group 3 (July 2020)

Designation Number	Title	Technical Subcommittee Number	Balloted Revisions
MP 23-15 (2020)	Reclaimed Asphalt Shingles for Use in Asphalt Mixtures	2d	Extended one year for 2020 publication; Year 7 of 8 in Provisional life cycle.
MP 36-18 (2020)	Materials for Asphalt Tack Coat	2a	Reconfirmed for 2020 publication.
MP 37-18 (2020)	Performance-Graded Asphalt Binder for Surface Treatments	2b	Reconfirmed for 2020 publication.
MP 38-18 (2020)	Mix Design of Cold Recycled Mixture with Foamed Asphalt	2d	Reconfirmed for 2020 publication.
MP 46-20	Balanced Mix Design	2d	New Provisional standard specification.
PP 76-13 (2020)	Troubleshooting Asphalt Specimen Volumetric Differences between Superpave Gyratory Compactors (SCGs) Used in the Design and the Field Management of Superpave Mixtures	2d	Extended one year for 2020 publication; Year 8 of 8 in Provisional life cycle.
PP 77-14 (2020)	Materials Selection and Mixture Design of Permeable Friction Courses	2d	Extended one year for 2020 publication; Year 7 of 8 in Provisional life cycle.
PP 78-17 (2020)	Design Considerations When Using Reclaimed Asphalt Shingles (RAS) in Asphalt Mixtures	2d	Extended one year for 2020 publication; Year 7 of 8 in Provisional life cycle.
PP 86-20	Emulsified Asphalt Content of Cold Recycled Mixture Designs	2a	Revised to correct Equation 2 in Section 9.7.
PP 92-19 (2020)	Preparation of Test Specimens Using the Plastic Mold Compaction Device	1b	Reconfirmed for 2020 publication.
PP 93-18 (2020)	Asphalt Tack Coat Design	2a	Reconfirmed for 2020 publication.
PP 94-18 (2020)	Determining Optimum Asphalt Content of Cold Recycled Mixture with Foamed Asphalt	2d	Reconfirmed for 2020 publication.
PP 95-18 (2020)	Preparation of Indirect Tension Performance Test Specimens	2d	Reconfirmed for 2020 publication.

Designation Number	Title	Technical Subcommittee Number	Balloted Revisions
PP 96-18 (2020)	Developing Dynamic Modulus Master Curves for Hot Mix Asphalt (HMA) Using the Indirect Tension Testing Method	2d	Reconfirmed for 2020 publication.
PP 102-20	Digital Interchange of Geotechnical Data	1b	New Provisional standard practice.
PP 103-20	Sample Preparation and Polishing of Unbound Aggregates for Dynamic Friction Testing	1c	New Provisional standard practice.
PP 104-20	Sample Preparation and Polishing of Asphalt Mixture Specimens for Dynamic Friction Testing	1c	New Provisional standard practice.
PP 105-20	Balanced Design of Asphalt Mixtures	2d	New Provisional standard practice.
TP 92-14 (2018)	Determining the Cracking Temperature of Asphalt Binder Using the Asphalt Binder Cracking Device (ABCD)	2b	Deleted.
TP 100-12 (2018)	Deep Foundation Elements under Bidirectional Static Axial Compressive Load	1b	Deleted.
TP 101-12 (2018)	Estimating Fatigue Resistance of Asphalt Binders Using the Linear Amplitude Sweep	2b	Adopted as full standard test T 391; no revisions made.
TP 104-13 (2015)	Rapid Axial Compressive Load Testing of Deep Foundation Units	1b	Deleted.
TP 105-20	Determining the Fracture Energy of Asphalt Mixtures Using the Semicircular Bend Geometry (SCB)	2d	Revised machining tolerances from 0.05 mm to 0.1 mm and corrected Equation 7.
TP 107-18 (2020)	Determining the Damage Characteristic Curve of Asphalt Mixtures from Direct Tension Cyclic Fatigue Tests	2d	Extended one year for 2020 publication; Year 7 of 8 in Provisional life cycle.
TP 108-14 (2020)	Abrasion Loss of Asphalt Mixture Specimens	2d	Extended one year for 2020 publication; Year 7 of 8 in Provisional life cycle.
TP 112-19 (2020)	Determining In-Place Density and Moisture Content of Soil and Soil-Aggregate Using Complex Impedance Methodology	1b	Reconfirmed for 2020 publication.

Designation Number	Title	Technical Subcommittee Number	Balloted Revisions
TP 116-20	Rutting and Fatigue Resistance of Asphalt Mixtures Using Incremental Repeated Load Permanent Deformation (iRLPD)	2d	Extensively revised; in particular: <ul style="list-style-type: none"> • Included iRLPD fatigue cracking test. • Added new sample size for rutting test. • Volumetric samples may be used for both rutting and fatigue tests. • Added high-temperature PG determination for rutting test. • Design traffic level is now related to high-temperature PG using LTPPBind grade bump. • Updated and expanded references.
TP 120-16 (2020)	Pore Index for Carbonate Coarse Aggregate	1c	Reconfirmed for 2020 publication.
TP 122-16 (2020)	Determination of Performance Grade of Physically Aged Asphalt Binder Using Extended Bending Beam Rheometer (BBR) Method	2b	Reconfirmed for 2020 publication.
TP 123-16 (2020)	Measuring Asphalt Binder Yield Energy and Elastic Recovery Using the Dynamic Shear Rheometer	2b	Reconfirmed for 2020 publication.
TP 124-20	Determining the Fracture Potential of Asphalt Mixtures Using the Illinois Flexibility Index Test (I-FIT)	2d	Revised as follows: <ul style="list-style-type: none"> • Changed title to “Illinois Flexibility Index Test.” • Replaced “FIT” with “I-FIT” throughout. • Added R 30 to Referenced Documents. • Replaced Figure 1 to show notch width change, from 1.5 ± 0.5 mm to ≤ 2.25 mm. • In Note 4, clarified specimen preparation. • Added Note 6 to use R 30 when long-term aging is done on I-FIT specimens. • Added a precision statement and an explanation that no bias information is provided.
TP 125-16 (2020)	Determining the Flexural Creep Stiffness of Asphalt Mixtures Using the Bending Beam Rheometer (BBR)	2d	Reconfirmed for 2020 publication.
TP 131-18 (2020)	Determining Dynamic Modulus of Asphalt Concrete Using the Indirect Tension Test	2d	Reconfirmed for 2020 publication.
TP 139-20	Determining the Specific Gravity and Absorption of Lightweight Aggregate for Internally Cured Concrete Mixtures	1c	New Provisional standard test.

Designation Number	Title	Technical Subcommittee Number	Balloted Revisions
TP 140-20	Moisture Sensitivity Using Hydrostatic Pore Pressure to Determine Cohesion and Adhesion Strength of Compacted Asphalt Mixture Specimens	2d	New Provisional standard test.
TP 141-20	Determining the Indirect Tensile Nflex Factor to Assess the Cracking Resistance of Asphalt Mixtures	2d	New Provisional standard test.