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R 81-17 (2021)	Static Segregation of Hardened Self-Consolidating Concrete (SCC) Cylinders
R 100M/R 100-23	Making and Curing Concrete Test Specimens in the Field
R 101-22	Developing Performance Engineered Concrete Pavement Mixtures

STD. NO.	TITLE
Environmental Tests	
R 23-99 (2022)	Chemical, Biological, and Physical Analysis of Water
R 24-99 (2022)	Collection and Preservation of Water Samples

STD. NO.	TITLE
Guardrail and Fencing	
M 180-23	Steel Components for Highway Guardrail
M 181-10 (2023)	Chain-Link Fence
M 269-96 (2022)	Turnbuckles and Shackles
M 279-14 (2022)	Metallic-Coated, Steel Woven Wire Fence Fabric
M 280-22	Metallic-Coated (Carbon) Steel Barbed Wire
M 281-22	Steel Fence Posts and Assemblies, Hot-Wrought

STD. NO.	TITLE
Hydraulic Cement	
M 85-22	Portland Cement

STD. NO.	TITLE
Hydraulic Cement	
M 240M/M 240-23	Blended Hydraulic Cement
M 307-22	Silica Fume Used in Cementitious Mixtures
M 321-04 (2021)	High-Reactivity Pozzolans for Use in Hydraulic-Cement Concrete, Mortar, and Grout
R 71-22	Sampling and Amount of Testing of Hydraulic Cement
R 115-23	Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency

STD. NO.	TITLE
Joint Filler and Asphalt Plank	
M 33M/M 33-22	Preformed Expansion Joint Filler for Concrete (Bituminous Type)
M 153-20	Preformed Sponge Rubber, Cork, and Recycled Rubber Expansion Joint Fillers for Concrete Paving and Structural Construction
M 213-22	Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
M 251M/M 251-22	Plain and Laminated Elastomeric Bridge Bearings
M 297-10 (2021)	Preformed Polychloroprene Elastomeric Joint Seals for Bridges
R 95-22	Accelerated Aging of Hot-Poured Asphalt Crack Sealant Using a Vacuum Oven

STD. NO.	TITLE
Metallic Materials for Bridges	
M 102M/M 102-23	Steel Forgings, Carbon and Alloy, for General Industrial Use
M 103M/M 103-19 (2023)	Steel Castings, Carbon, for General Application
M 105-23	Gray Iron Castings
M 111M/M 111-23	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
M 163M/M 163-22	Castings, Iron-Chromium, Iron-Chromium-Nickel, Corrosion Resistant, for General Application
M 169-20	Steel Bars, Carbon and Alloy, Cold-Finished
M 202M/M 202-19 (2023)	Steel Sheet Piling
M 227M/M 227-19 (2023)	Steel Bars, Carbon, Merchant Quality, Mechanical Properties
M 232M/M 232-19 (2023)	Zinc Coating (Hot-Dip) on Iron and Steel Hardware
M 255M/M 255-19 (2023)	Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties
M 270M/M 270-23	Structural Steel for Bridges

STD. NO.	TITLE
Metallic Materials for Bridges	
M 277-06 (2023)	Wire Rope and Sockets for Movable Bridges
M 285M/M 285-23	Castings, Iron-Chromium-Nickel, Corrosion Resistant, for Severe Service
M 292M/M 292-22	Carbon and Alloy Steel Nuts for Bolts for High-Pressure or High-Temperature Service, or Both
M 314-90 (2022)	Steel Anchor Bolts
M 334M/M 334-17 (2021)	Uncoated, Corrosion-Resistant, Deformed and Plain Chromium Alloyed, Billet-Steel Bars for Concrete Reinforcement and Dowels
M 336M/M 336-20	Steel Wire and Welded Wire, Plain and Deformed, for Concrete Reinforcement

STD. NO.	TITLE
Miscellaneous	
M 143-14 (2022)	Sodium Chloride
M 144-14 (2022)	Calcium Chloride
M 230-07 (2020)	Expanded and Extruded Foam Board (Polystyrene)
M 235M/M 235-22	Epoxy Resin Adhesives
M 333-16 (2020)	Detectable Warning Surfaces
M 351-23	Cotton Duck Fabric Bridge Bearings
R 8-96 (2023)	Evaluation of Transportation-Related Earthborne Vibrations
R 10-22	Definition of Terms Related to Quality and Statistics as Used in Highway Construction
R 25-22	Technician Training and Certification Programs
R 34-03 (2022)	Evaluating Deicing Chemicals
R 44-07 (2022)	Independent Assurance (IA) Programs
R 89-18 (2022)	Accreditation Bodies Operating in the Fields of Construction Materials Testing and Inspection
R 110-22	Continuous Thermal Profile of Asphalt Mixture Construction
R 111-22	Intelligent Compaction for Embankment and Asphalt Pavement Applications

STD. NO.	TITLE
Painting, Traffic Marking, and Signing	
M 237-96 (2023)	Epoxy Resin Adhesives for Bonding Traffic Markers to Hardened Portland Cement and Asphalt Concrete

STD. NO.	TITLE
Painting, Traffic Marking, and Signing	
M 247-13 (2022)	Glass Beads Used in Pavement Markings
M 249-12 (2020)	White and Yellow Reflective Thermoplastic Striping Material (Solid Form)
M 268-22	Retroreflective Sheeting for Flat and Vertical Traffic Control Applications
M 300-22	Inorganic Zinc-Rich Primer
M 348-22	Waterborne White and Yellow Traffic Paints
R 31-09 (2023)	Evaluation of Protective Coating Systems for Structural Steel
R 98-20	Determination of Size and Shape of Glass Beads Used in Traffic Markings by Means of Computerized Optical Method

STD. NO.	TITLE
Pavement Surface Characteristics	
M 328-14 (2022)	Inertial Profiler
M 331-17 (2021)	Smoothness of Pavement in Weigh-in-Motion (WIM) Systems
M 344-22	Materials for Sand Seals
R 36-21	Evaluating Faulting of Concrete Pavements
R 37-04 (2022)	Application of Ground Penetrating Radar (GPR) to Highways
R 40-10 (2022)	Measuring Pavement Profile Using a Rod and Level
R 43-13 (2021)	Quantifying Roughness of Pavements
R 54-14 (2022)	Accepting Pavement Ride Quality When Measured Using Inertial Profiling Systems
R 56-14 (2022)	Certification of Inertial Profiling Systems
R 57-14 (2022)	Operating Inertial Profiling Systems
R 85-18 (2022)	Quantifying Cracks in Asphalt Pavement Surfaces from Collected Pavement Images Utilizing Automated Methods
R 86-18 (2022)	Collecting Images of Pavement Surfaces for Distress Detection
R 87-18 (2022)	Determining Pavement Deformation Parameters and Cross Slope from Collected Transverse Profiles
R 88-18 (2022)	Collecting the Transverse Pavement Profile
R 106-22	Sand Seal Design
R 107-22	Emulsified Asphalt Scrub Seal Design

STD. NO.	TITLE
Quality Assurance	
R 9-05 (2022)	Acceptance Sampling Plans for Highway Construction
R 18-23	Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories
R 20-99 (2021)	Procedures for Measuring Highway Noise
R 38-10 (2022)	Quality Assurance of Standard Manufactured Materials
R 42-06 (2020)	Developing a Quality Assurance Plan for Hot Mix Asphalt (HMA)
R 61-12 (2020)	Establishing Requirements for Equipment Calibrations, Standardizations, and Checks
R 65-14 (2022)	Evaluating the Engineering and Environmental Suitability of Recycled Materials
R 94-19 (2023)	Quality Assurance, Job Site Quality Control, and Reapplication of Protective Sealers for Portland Cement Concrete

STD. NO.	TITLE
Reinforcing Steel and Wire Rope	
M 30-15 (2023)	Metallic-Coated Steel Wire Rope and Fittings for Highway Guardrail
M 31M/M 31-22	Deformed and Plain Carbon and Low-Alloy Steel Bars for Concrete Reinforcement
M 54M/M 54-22	Welded Deformed Steel Bar Mats for Concrete Reinforcement
M 203M/M 203-20	Steel Strand, Uncoated Seven-Wire for Concrete Reinforcement
M 204M/M 204-23	Stress-Relieved Steel Wire for Prestressed Concrete
M 254-06 (2023)	Corrosion-Resistant Coated Dowel Bars
M 275M/M 275-20	Uncoated High-Strength Steel Bars for Prestressing Concrete
M 322M/M 322-22	Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement
M 329M/M 329-11 (2023)	Stainless Clad Deformed and Plain Round Steel Bars for Concrete Reinforcement

STD. NO.	TITLE
Soils and Stabilization	
M 57-80 (2021)	Materials for Embankments and Subgrades
M 145-91 (2021)	Classification of Soils and Soil–Aggregate Mixtures for Highway Construction Purposes
M 146-91 (2021)	Terms Relating to Subgrade, Soil–Aggregate, and Fill Materials
M 147-17 (2021)	Materials for Aggregate and Soil–Aggregate Subbase, Base, and Surface Courses
M 216-22	Quicklime and Hydrated Lime for Soil Stabilization

STD. NO.	TITLE
Soils and Stabilization	
M 288-22	Geosynthetic Specification for Highway Applications
M 318-02 (2023)	Glass Cullet Use for Soil–Aggregate Base Course
M 319-02 (2023)	Reclaimed Concrete Aggregate for Unbound Soil–Aggregate Base Course
R 13-22	Conducting Geotechnical Subsurface Investigations
R 21-96 (2023)	Drilling for Subsurface Investigations—Unexpectedly Encountering Suspected Hazardous Material
R 22-97 (2023)	Decommissioning Geotechnical Exploratory Boreholes
R 27-01 (2023)	Assessment of Corrosion of Steel Piling for Non-Marine Applications
R 50-09 (2022)	Geosynthetic Reinforcement of the Aggregate Base Course of Flexible Pavement Structures
R 51-22	Compost for Erosion/Sediment Control (Filter Berms and Filter Socks)
R 52-22	Compost for Erosion/Sediment Control (Compost Blankets)
R 58-22	Dry Preparation of Disturbed Soil and Soil–Aggregate Samples for Test
R 69-20	Determination of Long-Term Strength for Geosynthetic Reinforcement
R 74-22	Wet Preparation of Disturbed Soil Samples for Test
R 75-16 (2020)	Developing a Family of Curves

STD. NO.	TITLE
Testing Equipment	
M 152M/M 152-22	Flow Table for Use in Tests of Hydraulic Cement
M 201-23	Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes
M 231-95 (2023)	Weighing Devices Used in the Testing of Materials
M 261-22	Rib-Tread Standard Tire for Special-Purpose Pavement Frictional-Property Tests
M 286-22	Smooth-Tread Standard Tire for Special-Purpose Pavement Frictional-Property Tests
M 339M/M 339-22	Thermometers Used in the Testing of Construction Materials
R 32-20	Calibrating the Load Cell and Deflection Sensors for a Falling Weight Deflectometer
R 33-20	Calibrating the Reference Load Cell Used for Reference Calibrations for a Falling Weight Deflectometer

STD. NO.	TITLE
Testing Equipment	
R 45-13 (2021)	Installing, Monitoring, and Processing Data of the Traveling Type Slope Inclinometer

STD. NO.	TITLE
Timber and Preservatives	
M 133-23	Preservatives and Pressure Treatment Processes for Timber
M 168-07 (2020)	Wood Products

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, the subheader line below the designation number will indicate if the standard has been editorially revised.

Release: July 2023

Designation Number	Title	TS	Balloted Changes
M 17-11 (2023)	Mineral Filler for Asphalt Mixtures	2c	Reconfirmed for 2023 publication and editorially updated for equivalency with ASTM D242/D242M-19.
M 30-15 (2023)	Metallic-Coated Steel Wire Rope and Fittings for Highway Guardrail	4d	Reconfirmed for 2023 publication.
M 33M/M 33-22	Preformed Expansion Joint Filler for Concrete (Bituminous Type)	4e	Editorially updated for equivalency with ASTM D994/D994M-11(2022). The updated ASTM Standard did not include any editorial or technical revisions.
M 86M/M 86-23	Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe	4a	Revised M 86M/M 86 for equivalency with ASTM C14M-20 and C14-20.
M 102M/M 102-23	Steel Forgings, Carbon and Alloy, for General Industrial Use	4f	Revised M 102M/M 102 for equivalency with ASTM A668/A668M-21a by adding class J to Section 7.1.4.2 and adding a description of where test samples should be taken to Section S5, then editorially revised for equivalency with ASTM A668/A668M-22, as the -22 changes do not change M 102M/M 102.
M 103M/M 103-19 (2023)	Steel Castings, Carbon, for General Application	4f	Reconfirmed for 2023 publication.
M 105-23	Gray Iron Castings	4f	Revised Tables 2 and 3 and updated endnote about acquiring a referenced military standard following ASTM A48 (not equivalent standards).
M 111M/M 111-23	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products	4f	Revised Section 5.2 to require use of SSPC SP 8.
M 133-23	Preservatives and Pressure Treatment Processes for Timber	4c	Revised references to American Wood Protection Association (AWPA) standards, including six new ones.
M 170-23	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe	4a	Revised M 170 for equivalency with ASTMC76-22.
M 170M-23	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe [Metric]	4a	Revised M170M for equivalency with ASTM C76M-22.
M 175M/M 175-23	Perforated Concrete Pipe	4a	Revised M175M-M175 for equivalency with ASTM C444/C444M-21.
M 176M/M 176-23	Porous Concrete Pipe	4a	Revised M 176M/M 176 for equivalency with ASTM C654M-19 and C654-19.
M 178M/M 178-23	Concrete Drain Tile	4a	Revised M 178M/M 178 for equivalency with ASTM C412M-19 and C412-19.
M 180-23	Steel Components for Highway Guardrail	4d	Revised extensively, including title.
M 181-10 (2023)	Chain-Link Fence	4d	Reconfirmed for 2023 publication.
M 194M/M 194-23	Chemical Admixtures for Concrete	3b	Revised for equivalency with ASTM C494/C494M-19 and to update for the use of IL cement for testing chemical admixtures, then editorially revised for equivalency with ASTM C494/C494M-19e1.
M 199M/M 199-23	Precast Reinforced Concrete Manhole Sections	4a	Revised M199M-M199 for equivalency with ASTM C478/C478-19M
M 201-23	Mixing Rooms, Moist Cabinets, Moist Rooms, and Water Storage Tanks Used in the Testing of Hydraulic Cements and Concretes	3a	Revised M 201 for equivalency with ASTM C511-21.
M 202M/M 202-19 (2023)	Steel Sheet Piling	4f	Reconfirmed for 2023 publication.

Designation Number	Title	TS	Balloted Changes
M 204M/M 204-23	Stress-Relieved Steel Wire for Prestressed Concrete	4f	Revised M 204M/M 204 for equivalency with ASTM A421/A421M-21. Editorially revised Sections 3.1.1 and 3.1.2 to change units format, delete Section 3.1.6, and rename Note 2.
M 205M/M 205-23	Molds for Forming Concrete Test Cylinders Vertically	3b	Revised for equivalency with ASTM C470/C470M-15.
M 206M/M 206-23	Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe	4a	Revised M 206M/M 206 for equivalency with ASTM C506M-20 and C506-20.
M 207M/M 207-23	Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe	4a	Revised M 207M/M 207 for equivalency with C507M-20 and C507-20.
M 224-23	Protective Sealers for Portland Cement Concrete	4c	Revised to harmonize with T 384.
M 227M/M 227-19 (2023)	Steel Bars, Carbon, Merchant Quality, Mechanical Properties	4f	Reconfirmed for 2023 publication.
M 231-95 (2023)	Weighing Devices Used in the Testing of Materials	1b	Reconfirmed for 2023 publication.
M 232M/M 232-19 (2023)	Zinc Coating (Hot-Dip) on Iron and Steel Hardware	4f	Reconfirmed for 2023 publication.
M 233-86 (2023)	Boiled Linseed Oil Mixture for Treatment of Portland Cement Concrete	4c	Reconfirmed for 2023 publication.
M 237-96 (2023)	Epoxy Resin Adhesives for Bonding Traffic Markers to Hardened Portland Cement and Asphalt Concrete	4c	Reconfirmed for 2023 publication.
M 240M/M 240-23	Blended Hydraulic Cement	3a	Revised as follows: 1) Remove MH and LH special property designations and replace with an option for the purchaser to require C1702 heat of hydration reporting by the manufacturer. 2) Remove T 107 autoclave expansion test requirements.
M 241M/M 241-23	Concrete Made by Volumetric Batching and Continuous Mixing	3b	Revised for equivalency with ASTM C685/C685M-17.
M 242M/M 242-23	Reinforced Concrete D-Load Culvert, Storm Drain, and Sewer Pipe	4a	Revised M242M-M242 for equivalency with C655M-19a and C655-19a.
M 252-23	Corrugated Polyethylene Drainage Pipe	4b	Revised Section 9.4 to allow to allow use of either flat plate or V-holder in line with previously approved M 294.
M 254-06 (2023)	Corrosion-Resistant Coated Dowel Bars	4f	Reconfirmed for 2023 publication.
M 255M/M 255-19 (2023)	Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties	4f	Reconfirmed for 2023 publication.
M 259-23	Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers According to the AASHTO LRFD Bridge Design Specifications	4a	Revised M 259 for equivalency with ASTM C1577-20.
M 262-23	Concrete Pipe and Related Products	4a	Revised M 262 for equivalency with ASTM C822-21.
M 270M/M 270-23	Structural Steel for Bridges	4f	Revised M 270M/M 270 for equivalency with ASTMA709/A709M-21a.
M 273-22	Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers with Less Than 2 ft of Cover Subjected to Highway Loadings	4a	Discontinued because it is no longer needed. Refer to ASTM C1577.
M 277-06 (2023)	Wire Rope and Sockets for Movable Bridges	4f	Reconfirmed for 2023 publication.
M 285M/M 285-23	Castings, Iron-Chromium-Nickel, Corrosion Resistant, for Severe Service	4f	Revised M 285M/M 285 for equivalency with ASTM A744/A744M-21a.
M 288-22	Geosynthetic Specification for Highway Applications	4g	Editorially revised.
M 303-89 (2023)	Lime for Asphalt Mixtures	3a	Reconfirmed for 2023 publication.

Designation Number	Title	TS	Balloted Changes
M 304-11 (2023)	Poly(Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter	4b	Reconfirmed for 2023 publication.
M 306-10 (2023)	Drainage, Sewer, Utility, and Related Castings	4f	Reconfirmed for 2023 publication.
M 316-23	Polymer-Modified Emulsified Asphalt	2a	Revised to add two new grades for the rapid-setting cationic high float polymer-modified emulsions in Table 1, both hard and soft, along with an adjustment to the penetration range for CHFRS-2P.
M 318-02 (2023)	Glass Cullet Use for Soil–Aggregate Base Course	1a	Reconfirmed for 2023 publication.
M 319-02 (2023)	Reclaimed Concrete Aggregate for Unbound Soil–Aggregate Base Course	1a	Reconfirmed for 2023 publication.
M 320-23	Performance-Graded Asphalt Binder	2b	Revised to update and simplify PAV conditioning temperatures.
M 327-23	Processing Additions for Use in the Manufacture of Hydraulic Cements	3a	Revised to remove the T 107 autoclave expansion test requirement.
M 329M/M 329-11 (2023)	Stainless Clad Deformed and Plain Round Steel Bars for Concrete Reinforcement	4f	Reconfirmed for 2023 publication.
M 330-23	Polypropylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter	4b	Revised Section 9.3 to allow use of either flat plate or V-holder in line with previously approved M 294.
M 332-23	Performance-Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test	2b	Revised as follows: Updated and simplified PAV conditioning temperatures and accompanying footnote in Table 1.
M 335-19 (2023)	Steel-Reinforced Polyethylene (PE) Ribbed Pipe, 300- to 1500-mm (12- to 60-in.) Diameter	4b	Reconfirmed for 2023 publication.
M 344-22	Materials for Sand Seals	5b	Editorially revised.
M 345-22	Materials for Emulsified Asphalt Scrub Seal	5b	Editorially revised.
M 351-23	Cotton Duck Fabric Bridge Bearings	4e	Adopted MP 26 as a full standard specification, M 351, without revisions.
M 352-23	Materials Used in Cold Recycled Mixtures with Emulsified Asphalt	2a	Adopted MP 31 as a full standard specification, M 352, with editorial revisions.
R 8-96 (2023)	Evaluation of Transportation-Related Earthborne Vibrations	5c	Reconfirmed for 2023 publication.
R 18-23	Establishing and Implementing a Quality Management System for Construction Materials Testing Laboratories	5c	Revised as follows: Added footnote to Table A.1 so that the interval for standardization of the compression machines matches the ASTM E4 requirements, allowing up to 18 months to lapse before standardization occurs. Added new Table A.9 on steel testing equipment along with corresponding references to the standards listed in the new table.
R 21-96 (2023)	Drilling for Subsurface Investigations—Unexpectedly Encountering Suspected Hazardous Material	5c	Reconfirmed for 2023 publication.
R 22-97 (2023)	Decommissioning Geotechnical Exploratory Boreholes	5c	Reconfirmed for 2023 publication.
R 27-01 (2023)	Assessment of Corrosion of Steel Piling for Non-Marine Applications	1a	Reconfirmed for 2023 publication.
R 29-15 (2023)	Grading or Verifying the Performance Grade (PG) of an Asphalt Binder	2b	Reconfirmed for 2023 publication.
R 30-22	Mixture Conditioning of Asphalt Mixtures	2c	Editorially revised title.
R 31-09 (2023)	Evaluation of Protective Coating Systems for Structural Steel	4c	Reconfirmed for 2023 publication.

Designation Number	Title	TS	Balloted Changes
R 39M/R 39-23	Making and Curing Concrete Test Specimens in the Laboratory	3b	Revised for equivalency with ASTM C192/C192M-19; designation editorially revised to dual units, consistent with Section 1.2.
R 47-23	Reducing Samples of Asphalt Mixtures to Testing Size	2c	Incorporated various editorial changes and eliminated redundancies. Modified wording to “active voice” as appropriate. Revised “quartering template” description to match corresponding language in R 76. Replaced Figure 5 with new graphic. Revised Section 10 to title each option in quartering method and include statement that final test sample consists of two diagonally opposite quarters.
R 51-22	Compost for Erosion/Sediment Control (Filter Berms and Filter Socks)	4g	Editorially revised.
R 60M/R 60-23	Sampling Freshly Mixed Concrete	3b	Revised for equivalency with ASTM C172M/C172-17, then editorially revised to add an equivalency exception in the endnote.
R 70M/R 70-23	Use of Apparatus for the Determination of Length Change of Hardened Cement Paste, Mortar, and Concrete	3a	Revised for equivalency with ASTM C490/C490M-21.
R 76-23	Reducing Samples of Aggregate to Testing Size	1c	Revised R 76 for equivalency with ASTM C702/C702M-19.
R 93-19 (2023)	Service Life Determination of Corrugated HDPE Pipes Manufactured with Recycled Content	4b	Reconfirmed for 2023 publication.
R 94-19 (2023)	Quality Assurance, Job Site Quality Control, and Reapplication of Protective Sealers for Portland Cement Concrete	4c	Reconfirmed for 2023 publication.
R 96-19 (2023)	Installation, Operation, and Maintenance of Ignition Furnaces	2c	Reconfirmed for 2023 publication.
R 100M/R 100-23	Making and Curing Concrete Test Specimens in the Field	3b	Revised for equivalency with ASTM C31-21a; designation number editorially revised to dual units, consistent with Section 1.3.
R 108-22	Ultrathin Bonded Wearing Course Design	5b	Editorially revised.
R 115-23	Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency	3a	Reclassified T 162 as R 115 without revisions because no test results are produced.
R 116-23	Grading or Verifying the Sealant Grade (SG) of a Hot-Poured Asphalt Crack Sealant	4e	Adopted PP 85 as a full standard practice, R 116, without revisions.
R 117-23	Emulsified Asphalt Content of Cold Recycled Mixture Designs	2a	Adopted PP 86 as a full standard practice, R 117, with editorial revisions.
R 118-23	Characterizing the Relaxation Behavior of Asphalt Binders Using the Delta Tc (ΔTc) Parameter	2b	Adopted PP 113 as a full standard practice, R 118, without revisions.

PART 2—STANDARD METHODS OF TEST

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T 97M/T 97-23	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
T 98M/T 98-12 (2020)	Fineness of Portland Cement by the Turbidimeter
T 99-22	Moisture–Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
T 100-22	Specific Gravity of Soils
T 102-22	Spot Test of Asphaltic Materials
T 103-22	Soundness of Aggregates by Freezing and Thawing
T 104-22	Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate
T 105-22	Chemical Analysis of Hydraulic Cement
T 106M/T 106-22	Compressive Strength of Hydraulic Cement Mortar (Using 50-mm or 2-in. Cube Specimens)
T 107M/T 107-22	Autoclave Expansion of Hydraulic Cement
T 110-03 (2020)	Moisture or Volatile Distillates in Asphalt Mixtures
T 111-22	Mineral Matter or Ash in Asphalt Materials
T 112-23	Clay Lumps and Friable Particles in Aggregate
T 113-22	Lightweight Particles in Aggregate
T 119M/T 119-23	Slump of Hydraulic Cement Concrete
T 121M/T 121-23	Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
T 129-23	Amount of Water Required for Normal Consistency of Hydraulic Cement Paste
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T 133-22	Density of Hydraulic Cement
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T 135-22	Wetting-and-Drying Test of Compacted Soil–Cement Mixtures
T 136-22	Freezing-and-Thawing Tests of Compacted Soil–Cement Mixtures
T 137-22	Air Content of Hydraulic Cement Mortar
T 140-20	Compressive Strength of Concrete Using Portions of Beams Broken in Flexure
T 143-13 (2021)	Sampling and Testing Calcium Chloride for Roads and Structural Applications
T 148-22	Measuring Length of Drilled Concrete Cores

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T 155-23	Water Retention by Liquid Membrane-Forming Curing Compounds for Concrete
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T 332-22	Determining Chloride Ions in Concrete and Concrete Materials by Specific Ion Probe
T 334-08 (2020)	Estimating the Cracking Tendency of Concrete
T 336-22	Coefficient of Thermal Expansion of Hydraulic Cement Concrete
T 345-12 (2020)	Passing Ability of Self-Consolidating Concrete (SCC) by J-Ring
T 347-13 (2021)	Slump Flow of Self-Consolidating Concrete (SCC)

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Concrete, Curing Materials, and Admixtures	
T 348-22	Air-Void Characteristics of Freshly Mixed Concrete by Buoyancy Change
T 349-13 (2021)	Filling Capacity of Self-Consolidating Concrete Using the Caisson Test
T 351-14 (2022)	Visual Stability Index (VSI) of Self-Consolidating Concrete (SCC)
T 352-14 (2022)	Determining Formwork Pressure of Fresh Self-Consolidating Concrete (SCC) Using Pressure Transducers
T 356-22	Determining Air Content of Hardened Portland Cement Concrete by High-Pressure Air Meter
T 357-22	Predicting Chloride Penetration of Hydraulic Cement Concrete by the Rapid Migration Procedure
T 358-22	Surface Resistivity Indication of Concrete's Ability to Resist Chloride Ion Penetration
T 359M/T 359-18 (2022)	Pavement Thickness by Magnetic Pulse Induction
T 363-22	Evaluating Stress Development and Cracking Potential due to Restrained Volume Change Using a Dual Ring Test
T 364-22	Determination of Composite Activation Energy of Aggregates due to Alkali–Silica Reaction (Chemical Method)
T 365-20	Quantifying Calcium Oxychloride Amounts in Cement Pastes Exposed to Deicing Salts
T 379-18 (2022)	Nonlinear Impact Resonance Acoustic Spectroscopy (NIRAS) for Concrete Specimens with Damage from Alkali-Silica Reaction (ASR)
T 395-22	Characterization of the Air-Void System of Freshly Mixed Concrete by the Sequential Pressure Method
T 396-22	Box Test in Slip Form Paving of Fresh Portland Cement Concrete
T 397-22	Uniaxial Response of Ultra-High Performance Concrete
T 402-23	Electrical Resistivity of a Concrete Cylinder Tested in a Uniaxial Resistance Test
T 403-23	Vibrating Kelly Ball (VKelly) Penetration in Fresh Portland Cement Concrete

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Hydraulic Cement	
T 98M/T 98-12 (2020)	Fineness of Portland Cement by the Turbidimeter
T 105-22	Chemical Analysis of Hydraulic Cement
T 106M/T 106-22	Compressive Strength of Hydraulic Cement Mortar (Using 50-mm or 2-in. Cube Specimens)
T 107M/T 107-22	Autoclave Expansion of Hydraulic Cement

STD. NO.	TITLE
Hydraulic Cement	
T 129-23	Amount of Water Required for Normal Consistency of Hydraulic Cement Paste
T 131-23	Time of Setting of Hydraulic Cement by Vicat Needle
T 132-22	Tensile Strength of Hydraulic Cement Mortars
T 133-22	Density of Hydraulic Cement
T 137-22	Air Content of Hydraulic Cement Mortar
T 153-22	Fineness of Hydraulic Cement by Air Permeability Apparatus
T 154-23	Time of Setting of Hydraulic Cement Paste by Gillmore Needles
T 162-22	Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency
T 185-23	Early Stiffening of Hydraulic Cement (Mortar Method)
T 186-23	Early Stiffening of Hydraulic Cement (Paste Method)
T 188-05 (2021)	Evaluation by Freezing and Thawing of Air-Entraining Additions to Hydraulic Cement
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T 323-03 (2020)	Determining the Shear Strength at the Interface of Bonded Layers of Portland Cement Concrete
T 353-14 (2022)	Particle Size Analysis of Hydraulic Cement and Related Materials by Light Scattering

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T 368-22	Measuring Low-Temperature Flexural Creep Stiffness of Hot-Poured Asphalt Crack Sealant by Bending Beam Rheometer (BBR)
T 369-22	Evaluation of the Low-Temperature Tensile Property of Hot-Poured Asphalt Crack Sealant by Direct Tension Test
T 370-22	Measuring Adhesion of Hot-Poured Asphalt Crack Sealant Using Direct Adhesion Tester
T 371-22	Measuring Interfacial Fracture Energy of Hot-Poured Asphalt Crack Sealant Using a Blister Test

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STD. NO.	TITLE
T 65M/T 65-23	Mass [Weight] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
T 213M/T 213-23	Mass [Weight] of Coating on Aluminum-Coated Iron or Steel Articles
T 243M/T 243-19 (2023)	Sampling Procedure for Impact Testing of Structural Steel
T 244-23	Mechanical Testing of Steel Products
T 337-09 (2023)	Non-Instrumental Determination of Metallic Zinc in Zinc-Rich Primers
T 338-09 (2023)	Analysis of Structural Steel Coatings for Hindered Amine Light Stabilizer (HALS)
T 339-22	Analysis of Structural Steel Coatings for Isocyanate Content
T 372M/T 372-17 (2021)	Sensitivity of Stainless Steel to Intergranular Attack
T 373M/T 373-17 (2021)	Comparative Qualitative Corrosion Characterization of Steel Bars Used for Concrete Reinforcement (Linear Polarization Resistance and Potentiodynamic Polarization Tests)
T 374M/T 374-17 (2021)	Comparative Qualitative Corrosion Characterization of Uncoated Chromium-Alloyed Steel Bars Used for Concrete Reinforcement (Tombstone Test)
T 375M/T 375-17 (2021)	Identification of Iron-Based Alloy Steel Bars for Concrete Reinforcement or Dowels by Handheld X-Ray Fluorescence (XRF) Spectrometer
T 376M/T 376-17 (2021)	Macrocell Slab Chloride Threshold

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T 384-23	Protective Sealers for Portland Cement Concrete
T 388-22	Detectable Warning Systems

STD. NO.	TITLE
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T 143-13 (2021)	Sampling and Testing Calcium Chloride for Roads and Structural Applications
T 237-22	Testing Epoxy Resin Adhesive
T 250-23	Thermoplastic Traffic Line Material
T 333-22	Linear Coefficient of Shrinkage on Cure of Adhesive Systems
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T 282-01 (2023)	Calibrating a Wheel Force or Torque Transducer Using a Calibration Platform (User Level)
T 317-04 (2022)	Prediction of Asphalt-Bound Pavement Layer Temperatures
T 360-16 (2020)	Measurement of Tire/Pavement Noise Using the On-Board Sound Intensity (OBSI) Method
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T 90-22	Determining the Plastic Limit and Plasticity Index of Soils
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T 100-22	Specific Gravity of Soils
T 134-22	Moisture–Density Relations of Soil–Cement Mixtures
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T 136-22	Freezing-and-Thawing Tests of Compacted Soil–Cement Mixtures
T 176-22	Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test
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T 194-22	Determination of Organic Matter in Soils by Wet Combustion
T 206-22	Penetration Test and Split-Barrel Sampling of Soils
T 207-22	Thin-Walled Tube Sampling of Soils
T 208-15 (2023)	Unconfined Compressive Strength of Cohesive Soil
T 211-90 (2021)	Determination of Cement Content in Cement-Treated Aggregate by the Method of Titration
T 215-23	Permeability of Granular Soils (Constant Head)
T 216-22	One-Dimensional Consolidation Properties of Soils
T 217-14 (2022)	Determination of Moisture in Soils by Means of a Calcium Carbide Gas Pressure Moisture Tester
T 218-86 (2022)	Sampling Hydrated Lime
T 219-22	Testing Lime for Chemical Constituents and Particle Sizes
T 220-22	Determination of the Strength of Soil–Lime Mixtures
T 221-90 (2021)	Repetitive Static Plate Load Tests of Soils and Flexible Pavement Components for Use in Evaluation and Design of Airport and Highway Pavements
T 222-81 (2021)	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 (2021)	Field Vane Shear Test in Cohesive Soil
T 225-16 (2020)	Diamond Core Drilling for Site Investigation
T 226-22	Triaxial Compressive Strength of Undrained Rock Core Specimens without Pore Pressure Measurements
T 232-90 (2022)	Determination of Lime Content in Lime-Treated Soils by Titration
T 233-22	Density of Soil In-Place by Block, Chunk, or Core Sampling
T 236-22	Direct Shear Test of Soils under Consolidated Drained Conditions
T 252-19 (2023)	Measurements of Pore Pressures in Soils
T 258-81 (2022)	Determining Expansive Soils
T 265-22	Laboratory Determination of Moisture Content of Soils
T 267-22	Determination of Organic Content in Soils by Loss on Ignition
T 272-18 (2022)	One-Point Method for Determining Maximum Dry Density and Optimum Moisture
T 273-86 (2022)	Soil Suction

STD. NO.	TITLE
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T 288-23	Determining Minimum Laboratory Soil Resistivity
T 289-22	Determining pH of Soil for Use in Corrosion Testing
T 290-95 (2020)	Determining Water-Soluble Sulfate Ion Content in Soil
T 291-22	Determining Water-Soluble Chloride Ion Content in Soil
T 296-22	Unconsolidated, Undrained Compressive Strength of Cohesive Soils in Triaxial Compression
T 298-15 (2023)	High-Strain Dynamic Testing of Piles
T 306-11 (2023)	Progressing Auger Borings for Geotechnical Explorations
T 307-99 (2021)	Determining the Resilient Modulus of Soils and Aggregate Materials
T 310-22	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 385-19 (2023)	Deep Foundation Elements under Bidirectional Static Axial Compressive Load
T 386-19 (2023)	Rapid Axial Compressive Load Testing of Deep Foundation Units
T 399-22	Determining In-Place Density and Moisture Content of Soil and Soil–Aggregate Using Complex Impedance Methodology

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 margin. Unballoted editorial changes do not receive the change bar; however, the subheader line below the designation number will indicate if the standard has been editorially revised.

Release: July 2023

Designation Number	Title	TS	Balloted Changes
T 11-23	Materials Finer Than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing	1c	Revised T 11 for harmonization with T 27 and T 30.
T 27-23	Sieve Analysis of Fine and Coarse Aggregates	1c	Revised T 27 for harmonization with T 11 and T 30.
T 44-23	Solubility of Bituminous Materials	2b	Revised T 44 for equivalency with ASTM D2042-22.
T 65M/T 65-23	Mass [Weight] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings	4f	Revised T 65M/T 65 for equivalency with ASTM A90/A90M-21.
T 97M/T 97-23	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)	3c	Revised for equivalency with ASTM C78/C78M-22.
T 112-23	Clay Lumps and Friable Particles in Aggregate	1c	Revised T 112 for equivalency with ASTM C142/C142M-17.
T 119M/T 119-23	Slump of Hydraulic Cement Concrete	3b	Revised for equivalecy with ASTM C143/C143M-20.
T 121M/T 121-23	Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete	3b	Revised for equivalency with ASTM C138/C138M-17a.
T 129-23	Amount of Water Required for Normal Consistency of Hydraulic Cement Paste	3a	Revised for equivalency with ASTM C187-16.
T 131-23	Time of Setting of Hydraulic Cement by Vicat Needle	3a	Revised for equivalency with ASTM C191-21.
T 152-23	Air Content of Freshly Mixed Concrete by the Pressure Method	3b	Revised for equivalency with ASTM C231/C231M-17a.
T 154-23	Time of Setting of Hydraulic Cement Paste by Gillmore Needles	3a	Revised for equivalency with ASTM C266-21
T 155-23	Water Retention by Liquid Membrane-Forming Curing Compounds for Concrete	3b	Revised for equivalency with ASTM C156-20.
T 157M/T 157-23	Air-Entraining Admixtures for Concrete	3b	Revised for equivalency with ASTM C233/C233M-18; designation number editorially revised to dual units, consistent with Section 1.2.
T 158M/T 158-23	Bleeding of Concrete	3b	Revised for equivalency with ASTM C232/C232M-21; designation number editorially revised to dual units, consistent with Section 1.3.
T 162-22	Mechanical Mixing of Hydraulic Cement Pastes and Mortars of Plastic Consistency	3a	Reclassified T 162 as R 115 without revisions because no test results are produced.
T 179M/T 179-23	Effect of Heat and Air on Asphalt Materials (Thin-Film Oven Test)	2b	Revised T 179M/T 179 for equivalency with ASTM D1754/D1754M-20, including change to dual units.
T 185-23	Early Stiffening of Hydraulic Cement (Mortar Method)	3a	Revised for equivalency with ASTM C359-21.
T 186-23	Early Stiffening of Hydraulic Cement (Paste Method)	3a	Revised for equivalency with ASTM C451-21.
T 192-23	Fineness of Hydraulic Cement by the 45-µm (No. 325) Sieve	3a	Revised as follows: Minor updates involving Section 2.2, Section 4.2, and Note 3.
T 196M/T 196-23	Air Content of Freshly Mixed Concrete by the Volumetric Method	3b	Revised for equivalency with ASTM C173/C173M-16.

Designation Number	Title	TS	Balloted Changes
T 197M/T 197-23	Time of Setting of Concrete Mixtures by Penetration Resistance	3b	Revised for equivalency with ASTM C403/C403M-16.
T 208-15 (2023)	Unconfined Compressive Strength of Cohesive Soil	1a	Reconfirmed for 2023 publication.
T 209-23	Theoretical Maximum Specific Gravity (Gmm) and Density of Asphalt Mixtures	2c	Revised as follows: Incorporated various changes involving vacuum measurement device. Modified term “accurate” to “readable.” Changed vacuum application rate and readability requirement.
T 213M/T 213-23	Mass [Weight] of Coating on Aluminum-Coated Iron or Steel Articles	4f	Revised T 213M/T 213 for equivalency with ASTM A428/A428M-21.
T 215-23	Permeability of Granular Soils (Constant Head)	1a	Revised as follows: Increased maximum limits for material passing #200 sieve in Section 1.3. Corrected the formula used to determine the viscosity ratio in Sections 12.2.1 and 18.4.1.
T 240-23	Effect of Heat and Air on a Moving Film of Asphalt Binder (Rolling Thin-Film Oven Test)	2b	Revised T 240 for equivalency with ASTM D2872-21.
T 243M/T 243-19 (2023)	Sampling Procedure for Impact Testing of Structural Steel	4f	Reconfirmed for 2023 publication.
T 244-23	Mechanical Testing of Steel Products	4f	Revised for equivalency with ASTM A370-21, to include material specifications to coincide with the T 384 test procedures. Revised Figures 14 and 16.
T 250-23	Thermoplastic Traffic Line Material	4c	Revised to allow screening of heavy metals in thermoplastic with XRF spectroscopy.
T 252-19 (2023)	Measurements of Pore Pressures in Soils	1b	Reconfirmed for 2023 publication.
T 277-23	Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration	3c	Revised for equivalency with ASTM C1202-22, then editorially revised for equivalency with ASTM C1202-22ε1.
T 280-23	Concrete Pipe, Manhole Sections, or Tile	4a	Revised T 280 for equivalency with ASTM C497-20e1.
T 282-01 (2023)	Calibrating a Wheel Force or Torque Transducer Using a Calibration Platform (User Level)	5a	Reconfirmed for 2023 publication.
T 285-89 (2023)	Bend Test for Bars for Concrete Reinforcement	4f	Reconfirmed for 2023 publication.
T 288-23	Determining Minimum Laboratory Soil Resistivity	1a	Significant editorial revisions including restructuring of paragraphs for clarity and removal of Figures 1 and 2.
T 298-15 (2023)	High-Strain Dynamic Testing of Piles	1b	Reconfirmed for 2023 publication.
T 306-11 (2023)	Progressing Auger Borings for Geotechnical Explorations	1b	Reconfirmed for 2023 publication.
T 318-15 (2023)	Water Content of Freshly Mixed Concrete Using Microwave Oven Drying	3b	Reconfirmed for 2023 publication.
T 324-23	Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures	2d	Revisions: Added new section 1.5. Updated Note 1. Added new Section 5.3 and Equation 2. Updated Note 3. Removed balance from apparatus section. Deleted existing Note 12 and added language to Section 9.1. Added new Note 12. Made significant revisions to annexes and appendix sections for calibration and verification purposes. Incorporated Section X.2 into annexes.
T 331-23	Bulk Specific Gravity (Gmb) and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method	2c	Revised T 331 Section 5.4 for equivalency with ASTM D6752/D6752M-18.
T 335-09 (2023)	Determining the Percentage of Fracture in Coarse Aggregate	1c	Reconfirmed for 2023 publication.
T 337-09 (2023)	Non-Instrumental Determination of Metallic Zinc in Zinc-Rich Primers	4c	Reconfirmed for 2023 publication.

Designation Number	Title	TS	Balloted Changes
T 338-09 (2023)	Analysis of Structural Steel Coatings for Hindered Amine Light Stabilizer (HALS)	4c	Reconfirmed for 2023 publication.
T 340-23	Determining Rutting Susceptibility of Asphalt Mixtures Using the Asphalt Pavement Analyzer (APA)	2d	Added language to allow use of two wheels throughout standard.
T 350-19 (2023)	Multiple Stress Creep Recovery (MSCR) Test of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)	2b	Reconfirmed for 2023 publication.
T 383-23	Evaluation of Asphalt Release Agents (ARAs)	2b	Revised per developments by AASHTO's National Transportation Product Evauation Program (NTPEP).
T 384-23	Protective Sealers for Portland Cement Concrete	4c	Revised to harmonize with M 224 and add material characterization testing, including an ATR-FTIR test procedure.
T 385-19 (2023)	Deep Foundation Elements under Bidirectional Static Axial Compressive Load	1b	Reconfirmed for 2023 publication.
T 386-19 (2023)	Rapid Axial Compressive Load Testing of Deep Foundation Units	1b	Reconfirmed for 2023 publication.
T 387-19 (2023)	Determining the Cracking Temperature of Asphalt Binder Using the Asphalt Binder Cracking Device (ABCD)	2b	Reconfirmed for 2023 publication.
T 400-23	Determining the Damage Characteristic Curve and Failure Criterion Using the Asphalt Mixture Performance Tester (AMPT) Cyclic Fatigue Test	2d	Revisions: New Note 12, Section 13.9, and Section 15, Precision and Bias. Updated Sections 13 and 14.
T 402-23	Electrical Resistivity of a Concrete Cylinder Tested in a Uniaxial Resistance Test	3c	Adopted TP 119 as a full standard test, T 402.
T 403-23	Vibrating Kelly Ball (VKelly) Penetration in Fresh Portland Cement Concrete	3b	Adopted TP 129 as a full standard test, T 403.
T 404-23	Evaluation of the Tracking Resistance of Hot-Poured Asphalt Crack Sealant by Dynamic Shear Rheometer (DSR)	4e	Adopted TP 126 as a full standard test, T 404, without revisions.
T 405-23	Determination of Asphalt Binder Resistance to Ductile Failure Using Double-Edge-Notched Tension (DENT) Test	2b	Adopted TP 113 as a full standard test, T 405, without revisions.
T 406-23	Determination of Performance Grade of Physically Aged Asphalt Binder Using Extended Bending Beam Rheometer (BBR) Method	2b	Adopted TP 122 as a full standard test, T 406, without revisions.
T 407-23	Determining the Interlayer Shear Strength (ISS) of Asphalt Pavement Layers	2c	Adopted TP 114 as a full standard test, T 407, without revisions.
T 408-23	Determining the Quality of Tack Coat Adhesion to the Surface of an Asphalt Pavement in the Field or Laboratory	2c	Adopted TP 115 as a full standard test, T 408, without revisions.
T 409-23	Determination of the Voids of Dry Compacted Filler	2c	Adopted TP 117 as a full standard test, T 409, without revisions.
T 410-23	Rutting and Fatigue Resistance of Asphalt Mixtures Using Incremental Repeated Load Permanent Deformation (iRLPD)	2d	Adopted TP 116 as a full standard test, T 410, with editorial revisions.
T 411-23	Determining the Damage Characteristic Curve and Failure Criterion Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT) Cyclic Fatigue Test	2d	Adopted TP 133 as a full standard test, T 411, with the following revisions: Added new Note 10, Section 13.9, and Section 15, Precision and Bias.

PART 3—AASHTO PROVISIONAL STANDARDS

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PP 103-21 (2022)	Sample Preparation and Polishing of Unbound Aggregates for Dynamic Friction Testing
PP 104-21 (2022)	Sample Preparation and Polishing of Asphalt Mixture Specimens for Dynamic Friction Testing
PP 105-20 (2022)	Balanced Design of Asphalt Mixtures
PP 106-23	Assessment of Static Performance in Transverse Pavement Profiling Systems
PP 107-23	Assessment of Body Motion Cancellation in Transverse Pavement Profiling Systems
PP 108-23	Assessment of Navigation Drift Mitigation in Transverse Pavement Profiling Systems
PP 109-23	Assessment of Highway Performance in Transverse Pavement Profiling Systems
PP 110-23	Assessment of Ground Reference Data for Transverse Pavement Profiling System Assessment
PP 111-23	Definition of Terms Related to Transverse Pavement Profiling Systems and Ground Reference Equipment
PP 112-21 (2023)	Recognizing Surrogate Test Methods
PP 113-21	Characterizing the Relaxation Behavior of Asphalt Binders Using the Delta Tc (ΔTc) Parameter
PP 114-22	Data Lot Names for Intelligent Construction Technologies
PP 115-23	Certification of High-Speed Macrotexture Measurement Equipment
PP 116-23	Operating Equipment for Measuring Macrotexture at Highway Speeds
PP 117-23	Durable Green Bike Lane Surface Treatments for Asphalt and Concrete Pavements
TP 113-22	Determination of Asphalt Binder Resistance to Ductile Failure Using Double-Edge-Notched Tension (DENT) Test
TP 114-18 (2022)	Determining the Interlayer Shear Strength (ISS) of Asphalt Pavement Layers
TP 115-16 (2022)	Determining the Quality of Tack Coat Adhesion to the Surface of an Asphalt Pavement in the Field or Laboratory
TP 116-22	Rutting and Fatigue Resistance of Asphalt Mixtures Using Incremental Repeated Load Permanent Deformation (iRLPD)
TP 117-22	Determination of the Voids of Dry Compacted Filler
TP 119-22	Electrical Resistivity of a Concrete Cylinder Tested in a Uniaxial Resistance Test
TP 120-22 (2023)	Pore Index for Carbonate Coarse Aggregate
TP 122-22	Determination of Performance Grade of Physically Aged Asphalt Binder Using Extended Bending Beam Rheometer (BBR) Method
TP 123-16 (2022)	Measuring Asphalt Binder Yield Energy and Elastic Recovery Using the Dynamic Shear Rheometer

STD. NO.	TITLE
TP 125-22 (2023)	Determining the Flexural Creep Stiffness of Asphalt Mixtures Using the Bending Beam Rheometer (BBR)
TP 126-22	Evaluation of the Tracking Resistance of Hot-Poured Asphalt Crack Sealant by Dynamic Shear Rheometer (DSR)
TP 127-22	Determining the Fracture Energy Density of Asphalt Binder Using the Binder Fracture Energy (BFE) Test
TP 128-22 (2023)	Evaluation of Oxidation Level of Asphalt Mixtures by a Portable Infrared Spectrometer
TP 129-21 (2022)	Vibrating Kelly Ball (VKelly) Penetration in Fresh Portland Cement Concrete
TP 130-18 (2022)	Producing Draw Down Panels and Measuring the Coefficient of Retroreflected Luminance (RL) of Pavement Markings in a Laboratory Panel
TP 131-18 (2022)	Determining the Dynamic Modulus of Asphalt Mixtures Using the Indirect Tension Test
TP 132-23	Determining the Dynamic Modulus for Asphalt Mixtures Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT)
TP 133-22	Determining the Damage Characteristic Curve and Failure Criterion Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT) Cyclic Fatigue Test
TP 134-22 (2023)	Stress Sweep Rutting (SSR) Test Using Asphalt Mixture Performance Tester (AMPT)
TP 135-22	Determining the Total Pore Volume in Hardened Concrete Using Vacuum Saturation
TP 136-22	Determining the Degree of Saturation of Hydraulic-Cement Concrete
TP 138-20 (2022)	Weight and Diameter for Carbon-Steel for Steel Wire and Welded Wire Reinforcement for Concrete
TP 139-22	Determining the Relative Density (Specific Gravity) and Absorption of Lightweight Aggregate for Internally Cured Concrete Mixtures
TP 140-22	Moisture Sensitivity Using Hydrostatic Pore Pressure to Determine Cohesion and Adhesion Strength of Compacted Asphalt Mixture Specimens
TP 141-22	Determining the Indirect Tensile Nflex Factor to Assess the Cracking Resistance of Asphalt Mixtures
TP 142-21 (2023)	Accelerated Determination of Potentially Deleterious Expansion of Concrete Cylinder due to Alkali–Silica Reactivity
TP 143-21 (2023)	Continuous Measurement of Sideway-Force Friction Number for Highway Pavements
TP 144-23	Determining the Potential Alkali–Silica Reactivity of Aggregates (TFHRC-TFAST)

PART 3—AASHTO PROVISIONAL STANDARDS

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Bituminous Materials	
TP 115-16 (2022)	Determining the Quality of Tack Coat Adhesion to the Surface of an Asphalt Pavement in the Field or Laboratory
TP 116-22	Rutting and Fatigue Resistance of Asphalt Mixtures Using Incremental Repeated Load Permanent Deformation (iRLPD)
TP 117-22	Determination of the Voids of Dry Compacted Filler
TP 122-22	Determination of Performance Grade of Physically Aged Asphalt Binder Using Extended Bending Beam Rheometer (BBR) Method
TP 123-16 (2022)	Measuring Asphalt Binder Yield Energy and Elastic Recovery Using the Dynamic Shear Rheometer
TP 125-22 (2023)	Determining the Flexural Creep Stiffness of Asphalt Mixtures Using the Bending Beam Rheometer (BBR)
TP 126-22	Evaluation of the Tracking Resistance of Hot-Poured Asphalt Crack Sealant by Dynamic Shear Rheometer (DSR)
TP 127-22	Determining the Fracture Energy Density of Asphalt Binder Using the Binder Fracture Energy (BFE) Test
TP 128-22 (2023)	Evaluation of Oxidation Level of Asphalt Mixtures by a Portable Infrared Spectrometer
TP 131-18 (2022)	Determining the Dynamic Modulus of Asphalt Mixtures Using the Indirect Tension Test
TP 132-23	Determining the Dynamic Modulus for Asphalt Mixtures Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT)
TP 133-22	Determining the Damage Characteristic Curve and Failure Criterion Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT) Cyclic Fatigue Test
TP 134-22 (2023)	Stress Sweep Rutting (SSR) Test Using Asphalt Mixture Performance Tester (AMPT)
TP 140-22	Moisture Sensitivity Using Hydrostatic Pore Pressure to Determine Cohesion and Adhesion Strength of Compacted Asphalt Mixture Specimens
TP 141-22	Determining the Indirect Tensile Nflex Factor to Assess the Cracking Resistance of Asphalt Mixtures

STD. NO.	TITLE
Box Culvert, Culvert Pipe, and Drain Tile	
MP 40-19 (2023)	Steel-Reinforced Polyethylene (SRPE) Corrugated Pipe 1650- to 3000-mm (66- to 120-in.) Diameter
MP 42-22	Steel-Reinforced Polyethylene (SRPE) Corrugated Pipe

STD. NO.	TITLE
Concrete, Curing Materials, and Admixtures	
PP 89-19 (2022)	Grinding the Ends of Cylindrical Concrete Specimens
TP 119-22	Electrical Resistivity of a Concrete Cylinder Tested in a Uniaxial Resistance Test
TP 129-21 (2022)	Vibrating Kelly Ball (VKelly) Penetration in Fresh Portland Cement Concrete
TP 135-22	Determining the Total Pore Volume in Hardened Concrete Using Vacuum Saturation
TP 136-22	Determining the Degree of Saturation of Hydraulic-Cement Concrete
TP 142-21 (2023)	Accelerated Determination of Potentially Deleterious Expansion of Concrete Cylinder due to Alkali–Silica Reactivity

STD. NO.	TITLE
Metallic Materials for Bridges	
TP 138-20 (2022)	Weight and Diameter for Carbon-Steel for Steel Wire and Welded Wire Reinforcement for Concrete

STD. NO.	TITLE
Miscellaneous	
MP 26-15 (2022)	Cotton Duck Fabric Bridge Bearings

STD. NO.	TITLE
Painting, Traffic Marking, and Signing	
PP 117-23	Durable Green Bike Lane Surface Treatments for Asphalt and Concrete Pavements
TP 130-18 (2022)	Producing Draw Down Panels and Measuring the Coefficient of Retroreflected Luminance (RL) of Pavement Markings in a Laboratory Panel

STD. NO.	TITLE
Pavement Structures	
MP 48-23	Equipment for Measuring Macrotexture of Pavements at Highway Speeds
PP 115-23	Certification of High-Speed Macrotexture Measurement Equipment
PP 116-23	Operating Equipment for Measuring Macrotexture at Highway Speeds

STD. NO.	TITLE
Pavement Surface Characteristics	
MP 35-22	Thin Overlay Treatments Using a Binder Resin System and Aggregate for Concrete Surfaces

STD. NO.	TITLE
Pavement Surface Characteristics	
MP 41-22	High Friction Surface Treatment for Asphalt and Concrete Pavements Using Calcined Bauxite
MP 47-22 (2023)	File Format of Two-Dimensional and Three-Dimensional (2D/3D) Pavement Image Data
PP 106-23	Assessment of Static Performance in Transverse Pavement Profiling Systems
PP 107-23	Assessment of Body Motion Cancellation in Transverse Pavement Profiling Systems
PP 108-23	Assessment of Navigation Drift Mitigation in Transverse Pavement Profiling Systems
PP 109-23	Assessment of Highway Performance in Transverse Pavement Profiling Systems
PP 110-23	Assessment of Ground Reference Data for Transverse Pavement Profiling System Assessment
PP 111-23	Definition of Terms Related to Transverse Pavement Profiling Systems and Ground Reference Equipment
TP 143-21 (2023)	Continuous Measurement of Sideway-Force Friction Number for Highway Pavements

STD. NO.	TITLE
Quality Assurance	
MP 39-22 (2023)	File Format of Intelligent Compaction Data
PP 97-19 (2023)	Determination of Constant Mass
PP 98-20 (2023)	Asphalt Surface Dielectric Profiling System Using Ground Penetrating Radar
PP 112-21 (2023)	Recognizing Surrogate Test Methods
PP 114-22	Data Lot Names for Intelligent Construction Technologies

STD. NO.	TITLE
Soils and Stabilization	
PP 92-19 (2022)	Preparation of Test Specimens Using the Plastic Mold Compaction Device
PP 102-20 (2022)	Digital Interchange of Geotechnical Data

LIST OF TECHNICAL CHANGES—PART 3

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, the subheader line below the designation number will indicate if the standard has been editorially revised.

Release: July 2023

Designation Number	Title	TS	Balloted Changes
MP 26-15 (2022)	Cotton Duck Fabric Bridge Bearings	4e	Adopted MP 26 as a full standard specification, M 351.
MP 31-22	Materials Used in Cold Recycled Mixtures with Emulsified Asphalt	2a	Adopted MP 31 as a full standard specification, M 352, without revisions.
MP 39-22 (2023)	File Format of Intelligent Compaction Data	5c	Reconfirmed for two years for 2023 publication; Year 5 of 8 in Provisional life cycle.
MP 40-19 (2023)	Steel-Reinforced Polyethylene (SRPE) Corrugated Pipe 1650- to 3000-mm (66- to 120-in.) Diameter	4b	Reconfirmed for two years for 2023 publication; Year 5 of 8 in Provisional life cycle.
MP 47-22 (2023)	File Format of Two-Dimensional and Three-Dimensional (2D/3D) Pavement Image Data	5a	Reconfirmed for two years for 2023 publication; Year 3 of 8 in Provisional life cycle.
MP 48-23	Equipment for Measuring Macrotexture of Pavements at Highway Speeds	5a	One of three new provisional standards addressing the measurement of pavement macrotexture at highway speeds.
PP 85-18 (2021)	Grading or Verifying the Sealant Grade (SG) of a Hot-Poured Asphalt Crack Sealant	4e	Adopted PP 85 as a full standard practice, R 116, without revisions.
PP 86-20 (2021)	Emulsified Asphalt Content of Cold Recycled Mixture Designs	2a	Adopted PP 86 as a full standard practice, R 117, with editorial revisions.
PP 97-19 (2023)	Determination of Constant Mass	5c	Reconfirmed for two years for 2023 publication; Year 5 of 8 in Provisional life cycle.
PP 98-20 (2023)	Asphalt Surface Dielectric Profiling System Using Ground Penetrating Radar	5c	Reconfirmed for two years for 2023 publication; Year 5 of 8 in Provisional life cycle.
PP 99-23	Preparation of Small Cylindrical Performance Test Specimens Using the Superpave Gyratory Compactor (SGC) or Field Cores	2d	Revised extensively.
PP 106-23	Assessment of Static Performance in Transverse Pavement Profiling Systems	5a	Minor revisions. One of five standards, all first published in 2021, addressing the assessments of different functions for transverse pavement profilers (TPP).
PP 107-23	Assessment of Body Motion Cancellation in Transverse Pavement Profiling Systems	5a	Minor revisions. One of five standards, all first published in 2021, addressing the assessments of different functions for transverse pavement profilers (TPP).
PP 108-23	Assessment of Navigation Drift Mitigation in Transverse Pavement Profiling Systems	5a	Minor revisions. One of five standards, all first published in 2021, addressing the assessments of different functions for transverse pavement profilers (TPP).
PP 109-23	Assessment of Highway Performance in Transverse Pavement Profiling Systems	5a	Minor revisions. One of five standards, all first published in 2021, addressing the assessments of different functions for transverse pavement profilers (TPP).
PP 110-23	Assessment of Ground Reference Data for Transverse Pavement Profiling System Assessment	5a	Minor revisions. One of five standards, all first published in 2021, addressing the assessments of different functions for transverse pavement profilers (TPP).
PP 111-23	Definition of Terms Related to Transverse Pavement Profiling Systems and Ground Reference Equipment	5a	Revised some definitions based on lessons learned from field work.
PP 112-21 (2023)	Recognizing Surrogate Test Methods	5c	Reconfirmed for two years for 2023 publication; Year 3 of 8 in Provisional life cycle.

Designation Number	Title	TS	Balloted Changes
PP 113-21	Characterizing the Relaxation Behavior of Asphalt Binders Using the Delta Tc (ΔTc) Parameter	2b	Adopted PP 113 as a full standard practice, R 118, without revisions.
PP 115-23	Certification of High-Speed Macrotexture Measurement Equipment	5a	One of three new provisional standards addressing the measurement of pavement macrotexture at highway speeds.
PP 116-23	Operating Equipment for Measuring Macrotexture at Highway Speeds	5a	One of three new provisional standards addressing the measurement of pavement macrotexture at highway speeds.
PP 117-23	Durable Green Bike Lane Surface Treatments for Asphalt and Concrete Pavements	4c	New provisional practice.
TP 113-22	Determination of Asphalt Binder Resistance to Ductile Failure Using Double-Edge-Notched Tension (DENT) Test	2b	Adopted TP 113 as a full standard test, T 405, without revisions.
TP 114-18 (2022)	Determining the Interlayer Shear Strength (ISS) of Asphalt Pavement Layers	2c	Adopted TP 114 as a full standard test, T 407, without revisions.
TP 115-16 (2022)	Determining the Quality of Tack Coat Adhesion to the Surface of an Asphalt Pavement in the Field or Laboratory	2c	Adopted TP 115 as a full standard test, T 408, without revisions.
TP 116-22	Rutting and Fatigue Resistance of Asphalt Mixtures Using Incremental Repeated Load Permanent Deformation (iRLPD)	2d	Adopted TP 116 as a full standard test, T 410, without revisions.
TP 117-22	Determination of the Voids of Dry Compacted Filler	2c	Adopted TP 117 as a full standard test, T 409, without revisions.
TP 119-22	Electrical Resistivity of a Concrete Cylinder Tested in a Uniaxial Resistance Test	3c	Adopted TP 119 as a full standard test, T 402.
TP 120-22 (2023)	Pore Index for Carbonate Coarse Aggregate	1c	Extended for one year for 2023 publication; Year 7 of 8 in Provisional life cycle.
TP 122-22	Determination of Performance Grade of Physically Aged Asphalt Binder Using Extended Bending Beam Rheometer (BBR) Method	2b	Adopted TP 122 as a full standard test, T 406, without revisions.
TP 125-22 (2023)	Determining the Flexural Creep Stiffness of Asphalt Mixtures Using the Bending Beam Rheometer (BBR)	2d	Extended for one year for 2023 publication; Year 7 of 8 in Provisional life cycle.
TP 126-22	Evaluation of the Tracking Resistance of Hot-Poured Asphalt Crack Sealant by Dynamic Shear Rheometer (DSR)	4e	Adopted TP 126 as a full standard test, T 404, without revisions.
TP 128-22 (2023)	Evaluation of Oxidation Level of Asphalt Mixtures by a Portable Infrared Spectrometer	2c	2023 publication; Year 8 of 8 in Provisional life cycle.
TP 129-21 (2022)	Vibrating Kelly Ball (VKelly) Penetration in Fresh Portland Cement Concrete	3c	Adopted TP 129 as a full standard test, T 403.
TP 132-23	Determining the Dynamic Modulus for Asphalt Mixtures Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT)	2d	Revised significantly as follows: Updated Section 6.5. Added new Sections 9.4.9–9.4.11, including new Note 2 and Table 1. Updated section 9.5.2, including adding new Note 4. Updated Section 9.6.
TP 133-22	Determining the Damage Characteristic Curve and Failure Criterion Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT) Cyclic Fatigue Test	2d	Adopted TP 133 as a full standard test, T 411, with the following revisions: [pull from handoff form, ballot item 33; query if not provided]
TP 134-22 (2023)	Stress Sweep Rutting (SSR) Test Using Asphalt Mixture Performance Tester (AMPT)	2d	Reconfirmed for two years for 2023 publication; Year 5 of 8 in Provisional life cycle.

Designation Number	Title	TS	Balloted Changes
TP 142-21 (2023)	Accelerated Determination of Potentially Deleterious Expansion of Concrete Cylinder due to Alkali–Silica Reactivity	3c	Reconfirmed for two years for 2023 publication; Year 3 of 8 in Provisional life cycle.
TP 143-21 (2023)	Continuous Measurement of Sideway-Force Friction Number for Highway Pavements	5a	Reconfirmed for two years for 2023 publication; Year 3 of 8 in Provisional life cycle.
TP 144-23	Determining the Potential Alkali–Silica Reactivity of Aggregates (TFHRC-TFAST)	1c	Revised extensively.

HISTORY OF CURRENT AND FORMER AASHTO PROVISIONAL MATERIALS STANDARDS

JULY 2023

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
Specifications					
MP 1	Performance Graded Asphalt Binder	1994	Adopted	2002	M 320
MP 1a	Performance Graded Asphalt Binder	1996	Adopted	2005	
MP 2	Superpave Volumetric Mix Design	1996	Adopted	2004	M 323
MP 5	Bridge Deck Cathodic Protection	1996	Deleted	1999	—
MP 6	Corrugated Polyethylene Pipe, 1050 and 1200 mm Diameter	1996	Adopted	1999	M 294
MP 7	Corrugated Polyethylene Pipe, 1350 and 1500 mm Diameter	1998	Adopted	2003	
MP 8	Designing Stone Matrix Asphalt (SMA)	2000	Adopted	2008	M 325
MP 9	Compost for Erosion/Sediment Control (Filter Berms)	2003	Adopted	2010	R 51
MP 10	Compost for Erosion/Sediment Control (Compost Blankets)	2003	Adopted	2010	R 52
MP 11	Inertial Profiler	2003	Adopted	2010	M 328
MP 12	Detectable Warning Surfaces	2004	Adopted	2015	M 333
MP 13	Stainless Clad Deformed and Plain Round Steel Bars for Concrete Reinforcement	2004	Adopted	2011	M 329M/M 329
MP 14	Smoothness of Pavement at the Approaches to Weight-in-Motion (WIM) Scales	2005	Adopted	2013	M 331
MP 15	Use of Reclaimed Asphalt Shingles as an Additive in Hot-Mix Asphalt	2006	Deleted	2014	—
MP 16	Reclaimed Concrete Aggregate for Use as Coarse Aggregate in Hydraulic Cement	2007	Deleted	2016	[b]
MP 17	Pavement Ride Quality When Measured Using Inertial Profiling Systems	2004	Adopted	2010	R 54
MP 18	Uncoated, Corrosion-Resistant, Deformed and Plain Chromium Alloyed, Billet-Steel Bars for Concrete Reinforcement and Dowels	2009	Adopted	2017 (June)	M 334M/M 334 and T 372M/T 372 through T 376M/T 376

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
MP 19	Performance-Graded Asphalt Binder Using Multiple Stress Creep Recovery (MSCR) Test	2010	Adopted	2014	M 332
MP 20	Steel-Reinforced Polyethylene (PE) Ribbed Pipe, 300- to 1500-mm (12- to 60-in.) Diameter	2010	Adopted	2018 (June)	M 335
MP 21	Polypropylene Pipe, 300- to 500-mm (12- to 60-in.)	2011	Adopted	2013	M 330
MP 22	Fiber-Reinforced Polymer Composite Materials for Highway and Bridge Structures	2013	Adopted	2021	M 337
MP 23	Reclaimed Asphalt Shingles for Use in Asphalt Mixtures	2014	Adopted	2022	M 350
MP 24	Waterborne White and Yellow Traffic Paints	2014	Adopted	2022	M 348
MP 25	Performance-Graded Hot-Poured Asphalt Crack Sealant	2015	Adopted	2021	M 338
MP 26	Cotton Duck Fabric Bridge Bearings	2015	Adopted	2023	M 351
MP 27	Materials for Emulsified Asphalt Chip Seals	2016	Adopted	2022	M 340
MP 28	Materials for Microsurfacing	2016	Adopted	2022	M 341
MP 29	*This standard number was inadvertently skipped.*				
MP 30	Steel Wire and Welded Wire, Plain and Deformed, for Concrete Reinforcement	2017	Adopted	2018 (June)	M 336M/M 336
MP 31	Materials for Cold Recycled Mixtures with Emulsified Asphalt	2017	Adopted	2023	M 352
MP 32	Materials for Slurry Seal	2017	Adopted	2022	M 342
MP 33	Materials for Emulsified Asphalt Fog Seal	2017	Adopted	2022	M 343
MP 34	Materials for Sand Seals	2018	Adopted	2022	M 344
MP 35	Thin Overlay Treatments Using a Binder Resin System and Aggregate for Concrete Surfaces	2018			
MP 36	Materials for Asphalt Tack Coat	2018	Adopted	2022	M 349
MP 37	Performance-Graded Asphalt Binder for Surface Treatments	2018			
MP 38	Mix Design of Cold Recycled Mixture with Foamed Asphalt	2018			
MP 39	File Format of Intelligent Construction Data	2019			
MP 40	Steel-Reinforced Polyethylene (PE) Ribbed Pipe 1650- to 3000-mm (66- to 120-in.) Diameter	2019			

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
MP 41	High Friction Surface Treatment for Asphalt and Concrete Pavements Using Calcined Bauxite	2019			
MP 42	Steel-Reinforced Polyethylene (SRPE) Corrugated Pipe	2020			
MP 43	Materials for Emulsified Asphalt Scrub Seal	2020	Adopted	2022	M 345
MP 44	Materials for Ultrathin Bonded Wearing Course	2020	Adopted	2022	M 346
MP 45	Materials for Full-Depth Reclamation Mixtures with Emulsified Asphalt	2020	Adopted	2022	M 347
MP 46	Balanced Mix Design	2020			
MP 47	File Format of Two-Dimensional and Three-Dimensional (2D/3D) Pavement Image Data	2021			
MP 48	Equipment for Measuring Macrotexture of Pavements at Highway Speeds	2023			
Practices					
PP 1	Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)	1994	Adopted	2002	R 28
PP 2	Mixture Conditioning of Hot-Mix Asphalt (HMA)	1995	Adopted	2002	R 30
PP 3	Preparing Hot Mix Asphalt (HMA) Specimens by Means of the Rolling Wheel Compactor	1995	Deleted	2003	—
PP 5	Laboratory Evaluation of Modified Asphalt Systems	1994	Deleted	1998	—
PP 6	Grading or Verifying the Performance Grade of an Asphalt Binder	1994	Adopted	2002	R 29
PP 7	Calibrating the Load Cell and Deflection Sensors for a Falling Weight Deflectometer	1995	Adopted	2003	R 32
PP 8	Calibrating the Reference Load Cell Used for reference Calibrations for Falling Weight Deflectometer	1995	Adopted	2003	R 33
PP 10	Operational Guidelines on Test Pits for Evaluating Pavement Performance	1994	Deleted	1995	—[c]
PP 19	Volumetric Analysis of Compacted Hot Mix Asphalt (HMA)	1994	Deleted	2002	—
PP 20	Evaluating the Performance of Crack Sealing Treatments on Asphalt Surfaced Pavement	1995	Deleted	2004	—
PP 21	Testing and Evaluating Cold Mix Patching Materials	1995	Deleted	2002	—

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
PP 22	Selecting and Specifying Crack Sealants for Asphalt Surfaced Pavement	1996	Deleted	2002	—
PP 23	Evaluating the Condition of Portland Cement Concrete Bridge Components	1996	Deleted	2003	—
PP 25	Evaluating the Performance of Joint Seals in Portland Cement Concrete Pavement	1996	Deleted	2002	—
PP 26	Certifying Suppliers of Performance Graded Asphalt Binders	1997	Adopted	2001	R 26
PP 28	Superpave Volumetric Design for Hot-Mix Asphalt (HMA)	1996	Adopted	2004	R 35
PP 29	Evaluating Deicing Chemicals	1996	Adopted	2003	R 34
PP 30	Evaluation of Coating Systems with Zinc Rich Primers	1996	Adopted	2002	R 31
PP 31	Measuring Pavement Profile Using a Rod and Level	1997	Adopted	2005	R 40
PP 32	Measuring Pavement Profile Using a Dipstick®	1997	Adopted	2005	R 41[d]
PP 33	Decommissioning Geotechnical Exploratory Boreholes	1997	Adopted	1998	R 22
PP 34	Estimating the Cracking Tendency of Concrete	1998	Adopted	2008	T 334
PP 35	Evaluation of Superpave™ Gyratory Compactors (SGCs)	1998	Deleted	2007	—
PP 36	Assessment of Corrosion of Steel Piling for Non-Marine Applications	1998	Adopted	2002	R 27
PP 37	Determination of International Roughness Index (IRI) to Quantify Roughness of Pavements	1999	Combined and Adopted	2007	R 43
PP 37M	Quantifying Roughness of Pavements	1999			
PP 38	Determining Maximum Rut Depth in Asphalt Pavements	1999	Adopted	2008	R 48[e]
PP 39	Estimating Faulting of Concrete Pavements	1999	Adopted	2004	R 36
PP 40	Application of Ground Penetrating Radar (GPR) to Highways	2000	Adopted	2004	R 37
PP 41	Designing Stone Matrix Asphalt (SMA)	2000	Adopted	2008	R 46
PP 42	Determination of Low-Temperature Performance Grade (PG) of Asphalt Binders	2001	Adopted	2009	R 49
PP 44	Quantifying Cracks in Asphalt Pavement Surface	2001	Adopted	2010	R 55[f]
PP 45	Qualification of Deformed and Plain Steel Bar Producing Mills	2001	Adopted	2010	R 53[g]

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
PP 46	Geosynthetic Reinforcement of the Aggregate Base Course of Flexible Pavement Structures	2001	Adopted	2009	R 50
PP 47	Evaluation of Different Superpave™ Gyratory Compactors (SGCs) Used in the Design and the Field Management of Superpave™ Mixtures	2002	Deleted	2009	—
PP 48	Evaluation of the Superpave™ Gyratory Compactor (SGC) Internal Angle of Gyration	2003	Deleted	2010	—
PP 49	Certification of Inertial Profiling Systems	2003	Adopted	2010	R 56
PP 50	Operating Inertial Profilers and Evaluating Pavement Profiles	2003	Adopted	2010	R 57
PP 51	Pavement Ride Quality When Measured Using Inertial Profiling Systems	2003	Adopted	2010	R 54[h]
PP 52	Developing a Quality Assurance Plan for Hot-Mix Asphalt (HMA)	2005	Adopted	2006	R 42
PP 53	Design Considerations When Using Reclaimed Asphalt Shingles (RAS) in New Hot Mix Asphalt (HMA)	2006	Deleted	2014	—
PP 54	Match Curing of Concrete Test Specimens	2006	Adopted	2016 (April)	R 72
PP 55	Overcoating Field Test Program for Evaluating Protective Coatings on Existing Bridges or Salvaged Beams	2006	Deleted	2012	—
PP 56	Evaluating the Engineering and Environmental Suitability of Recycled Materials	2006	Adopted	2014	R 65
PP 57	Establishing Requirements for and Performing Equipment Calibrations, Standardizations, and Checks	2006	Adopted	2012	R 61
PP 58	Static Segregation of Hardened Self-Consolidating Concrete (SCC) Cylinders	2008	Adopted	2017 (April)	R 81[i]
PP 59	Coal Combustion Fly Ash for Embankments	2009	Deleted	2016 (August)	—
PP 60	Preparation of Cylindrical Performance Test Specimens Using the Superpave Gyratory Compactor (SGC)	2009	Adopted	2017 (August)	R 83
PP 61	Developing Dynamic Modulus Master Curves for Asphalt Mixtures Using the Asphalt Mixture Performance Tester (AMPT)	2009	Adopted	2017 (August)	R 84
PP 62	Developing Dynamic Modulus Master Curves for Hot Mix Asphalt (HMA)	2009	Adopted	2013	R 62
PP 63	Pipe Joint Selection for Highway Culvert and Storm Drains	2009	Adopted	2017 (June)	R 82

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
PP 64	Determining Aggregate Source Shape Values from Digital Image Analysis Shape Properties	2010	Adopted	2018 (August)	R 91
PP 65	Determining the Reactivity of Concrete Aggregates and Selecting Appropriate Measures for Preventing Deleterious Expansion in New Concrete Construction	2010	Adopted	2016 (April)	R 80
PP 66	Determination of Long-Term Strength for Geosynthetic Reinforcement	2010	Adopted	2015	R 69
PP 67	Quantifying Cracks in Asphalt Pavement Surfaces from Collected Images Utilizing Automated Methods	2010	Adopted	2018 (April)	R 85
PP 68	Collecting Images of Pavement Surfaces for Distress Detection	2010	Adopted	2018 (April)	R 86
PP 69	Determining Pavement Deformation Parameters and Cross Slope from Collected Transverse Profiles	2010	Adopted	2018 (April)	R 87
PP 70	Collecting the Transverse Pavement Profile	2010	Adopted	2018 (April)	R 88
PP 71	Certifying Suppliers of Emulsified Asphalt	2011	Adopted	2016 (August)	R 77
PP 72	Recovering Residue from Emulsified Asphalt Using Low-Temperature Evaporative Techniques	2011	Adopted	2016 (August)	R 78
PP 73	Quality Assurance, Job Site Quality Control, and Reapplication of Protective Sealers for Portland Cement Concrete	2011	Adopted	2019 (June)	R 94
PP 74	Determination of Size and Shape of Glass Beads Used in Traffic Markings by Means of Computerized Optical Method	2011	Adopted	2020 (June)	R 98
PP 75	Vacuum Drying Compacted Asphalt Specimens	2013	Adopted	2016 (August)	R 79
PP 76	Troubleshooting Asphalt Specimen Volumetric Differences between Superpave Gyratory Compactors (SGCs) Used in the Design and the Field Management of Superpave Mixtures	2013	Adopted	2021	R 99
PP 77	Materials Selection and Mixture Design of Permeable Friction Courses (PFCs)	2014	Adopted	2022	R 113
PP 78	Design Considerations When Using Reclaimed Asphalt Shingles (RAS) in Asphalt Mixtures	2014	Adopted	2022	R 114
PP 79	High Friction Surface Treatment for Asphalt and Concrete Pavements	2014	Reclassified	2019 (June)	MP 41
PP 80	Continuous Thermal Profile of Asphalt Mixture Construction	2014	Adopted	2022	R 110

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
PP 81	Intelligent Compaction Technology for Embankment and Asphalt Pavement Applications	2014	Adopted	2022	R 111
PP 82	Emulsified Asphalt Chip Seal Design	2016	Adopted	2022	R 102
PP 83	Microsurfacing Design	2016	Adopted	2022	R 103
PP 84	Performance Engineered Concrete Pavement Mixtures	2017	Adopted	2022	R 101
PP 85	Grading or Verifying the Sealant Grade (SG) of a Hot-Poured Asphalt Crack Sealant	2017	Adopted	2023	R 116
PP 86	Emulsified Asphalt Content of Cold Recycled Mixture Designs	2017	Adopted	2023	R 117
PP 87	Slurry Seal Design	2017	Adopted	2022	R 104
PP 88	Emulsified Asphalt Fog Seal Design	2017	Adopted	2022	R 105
PP 89	Grinding the Ends of Cylindrical Concrete Specimens	2018			
PP 90	Sand Seal Design	2018	Adopted	2022	R 106
PP 91	Emulsified Asphalt Scrub Seal Design	2018	Adopted	2022	R 107
PP 92	Preparation of Test Specimens Using the Plastic Mold Compaction Device	2018			
PP 93	Asphalt Tack Coat Design	2018	Adopted	2022	R 112
PP 94	Determining Optimum Asphalt Content of Cold Recycled Mixture with Foamed Asphalt	2018			
PP 95	Preparation of Indirect Tension Performance Test Specimens	2018			
PP 96	Developing Dynamic Modulus Master Curves for Hot Mix Asphalt (HMA) Using the Indirect Tension Testing Method	2018			
PP 97	Determination of Constant Mass	2019			
PP 98	Asphalt Surface Dielectric Profiling System Using Ground Penetrating Radar	2019			
PP 99	Preparation of Small Cylindrical Performance Test Specimens Using the Superpave Gyratory Compactor (SGC) or Field Cores	2019			
PP 100	Ultrathin Bonded Wearing Course Design	2020	Adopted	2022	R 108
PP 101	Emulsified Asphalt Content of Full-Depth Reclamation Mixture Design	2020	Adopted	2022	R 109

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
PP 102	Digital Interchange of Geotechnical Data	2020			
PP 103	Sample Preparation and Polishing of Unbound Aggregates for Dynamic Friction Testing	2020			
PP 104	Sample Preparation and Polishing of Asphalt Mixture Specimens for Dynamic Friction Testing	2020			
PP 105	Balanced Design of Asphalt Mixtures	2020			
PP 106	Assessment of Static Performance in Transverse Pavement Profiling Systems	2021			
PP 107	Assessment of Body Motion Cancellation in Transverse Pavement Profiling Systems	2021			
PP 108	Assessment of Navigation Drift Mitigation in Transverse Pavement Profiling Systems	2021			
PP 109	Assessment of Highway Performance in Transverse Pavement Profiling Systems	2021			
PP 110	Assessment of Ground Reference Data for Transverse Pavement Profiling System Assessment	2021			
PP 111	Definition of Terms Related to Transverse Pavement Profiling Systems and Ground Reference Equipment	2021			
PP 112	Recognizing Surrogate Test Methods	2021			
PP 113	Characterizing the Relaxation Behavior of Asphalt Binders Using the Delta T_c (ΔT_c) Parameter	2021	Adopted	2023	R 118
PP 114	Data Lot Names for Use with Intelligent Construction Technologies	2022			
PP 115	Certification of High-Speed Macrotexture Measurement Equipment	2023			
PP 116	Operating Equipment for Measuring Macrotexture at Highway Speeds	2023			
PP 117	Durable Green Bike Lane Surface Treatments for Asphalt and Concrete Pavements	2023			
Tests					
TP 1	Determining the Flexural Creep Stiffness of Asphalt Binder Using the Bending Beam Rheometer (BBR)	1994	Adopted	2002	T 313
TP 2	Quantitative Extraction and Recovery of Asphalt Binder from Hot Mix Asphalt (HMA)	1995	Adopted	2003	T 319

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
TP 3	Determining the Fracture Properties of Asphalt Binder in Direct Tension (DT)	1994	Adopted	2002	T 314
TP 4	Preparing and Determining the Density of Hot-Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor	1994	Adopted	2001	T 312
TP 5	Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)	1995	Adopted	2002	T 315
TP 6	Measurement of Initial Asphalt Adsorption and Desorption in the Presence of Moisture	1994	Deleted	1999	—
TP 7	Determining the Permanent Deformation and Fatigue Cracking Characteristics of Hot Mix Asphalt (HMA) Using the Simple Shear Test (SST) Device	1995	Adopted	2003	T 320
TP 8	Determining the Fatigue Life of Compacted Hot Mix Asphalt (HMA) Subjected to Repeated Flexural Bending	1995	Adopted	2003	T 321
TP 9	Determining the Creep Compliance and Strength of Hot Mix Asphalt (HMA) Using the Indirect Tensile Test Device	1995	Adopted	2003	T 322
TP 10	Thermal Stress Restrained Specimen Tensile Strength	1994	Deleted	2002	—
TP 11	Rapid Determination of Corrosion Rate of Uncoated Steel in Reinforced Concrete	1996	Deleted	2004	—
TP 12	Determining the Hydraulic Fracture of Coarse Aggregate	1994	Deleted	2001	—
TP 14	Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction	1994	Adopted	1996	T 303
TP 17	Resistance of Concrete to Rapid Freezing and Thawing	1994	Deleted	2002	—
TP 18	Method for Determining the Fundamental Transverse Frequency and Quality Factor of Concrete Prism Specimens	1995	Deleted	2003	—
TP 19	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)	1994	Deleted	2002	—
TP 20	Compressive Strength of Cylindrical Concrete Specimens	1994	Adopted	1997	T 22M/T 22
TP 22	Rapid Determination of the Chloride Penetrability of Concrete Using AC Impedance	1995	Deleted	2003	—
TP 23	Water Content of Freshly Mixed Concrete Using Microwave Oven Drying	1994	Adopted	2002	T 318
TP 24	Determining the Density of Freshly Mixed Concrete in Place Using a Twin-Probe Nuclear Density Gauge	1995	Deleted	2003	—

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
TP 26	Determining the Relative Permeability of Concrete by Surface Air Flow	1995	Deleted	2003	—
TP 28	Detection of Voids under Rigid Pavement	1995	Deleted	2003	—
TP 29	Determining the Shear Strength at the Interface of Bonded Layers of Portland Cement Concrete	1995	Adopted	2003	T 323
TP 31	Determining the Resilient Modulus of Bituminous Mixtures by Indirect Tension	1995	Deleted	2003	—
TP 33	Uncompacted Void Content of Fine Aggregate (As Influenced by Particle Shape, Surface Texture, and Grading)	1994	Adopted	1996	T 304
TP 34	Determining Moisture Sensitivity Characteristics of Compacted Bituminous Mixtures Subjected to Hot and Cold Climate Conditions	1994	Deleted	1999	—
TP 35	Determining the Relative Effectiveness of Penetrating Concrete Sealers by Electrical Resistance	1994	Deleted	2002	—
TP 36	Evaluating Asphalt-Covered Concrete Bridge Decks Using Pulsed Radar	1994	Deleted	2002	—
TP 37	Determining the Condition Rating of Preformed Membranes on Concrete Bridge Decks Using Pulse Velocity	1994	Deleted	2002	—
TP 39	Determining the Maximum Specific Gravity of Bituminous Paving Mixtures	1995	Adopted	1999	T 209
TP 40	Determining the Percent Asphalt Required for Coating Aggregates Used in Cold Mix Patching Materials	1995	Deleted	2002	—
TP 41	Determining the Percent Asphalt Required Based on Stripping of Aggregates Used in Cold Mix Patching Materials	1995	Deleted	2002	—
TP 42	Percent Asphalt Based on Drainability of Aggregates Used in Cold Mix Patching Materials	1995	Deleted	2002	—
TP 43	Workability of Cold Mix Patching Materials	1995	Deleted	2002	—
TP 44	Cohesion of Cold Mix Patching Materials	1995	Deleted	2002	—
TP 46	Determining the Resilient Modulus of Soils and Aggregate Materials	1995	Adopted	1999	T 307
TP 47	Determining the Ecological Effects of Deicing Chemicals	1995	Deleted	2002	—
TP 48	Viscosity Determination of Asphalt Binder Using Rotational Viscometer	1995	Adopted	2002	T 316

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
TP 50	Determining the Relative Effectiveness of Penetrating Concrete Sealers by Water Absorption	1996	Deleted	2004	—
TP 51	Testing Cathodic Protection Materials and Systems for Bridge Decks	1996	Deleted	2004	—
TP 52	Estimating the Strength of Concrete in Transportation Construction by Maturity Tests	1996	Adopted	2004	T 325
TP 53	Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method	1996	Adopted	1999	T 308
TP 54	Determining Early Stiffening Characteristics of Portland Cement Paste (Mini Slump Cone Method)	1997	Deleted	2004	—
TP 55	Determining Chloride Ions in Concrete and Concrete Materials by Specific Ion Probe	1998	Adopted	2007	T 332
TP 56	Uncompacted Void Content of Coarse Aggregate (As Influenced by Particle Shape, Surface Texture, and Grading)	1998	Adopted	2005	T 326
TP 57	Methylene Blue Value of Clays, Mineral Fillers, and Fines	1998	Adopted	2007	T 330
TP 58	Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus	1999	Adopted	2005	T 327
TP 59	Determining Air Content of Hardened Portland Cement Concrete by High-Pressure Air Meter	1999	Adopted	2015	T 356
TP 60	Coefficient of Thermal Expansion of Hydraulic Cement Concrete	2000	Adopted	2009	T 336
TP 61	Determining the Percentage of Fracture in Coarse Aggregate	2002	Adopted	2009	T 335
TP 62	Determining Dynamic Modulus of Hot-Mix Asphalt Concrete Mixtures	2003	Adopted	2011	T 342
TP 63	Determining Rutting Susceptibility of Asphalt Paving Mixtures Using the Asphalt Pavement Analyzer (APA)	2003	Adopted	2010	T 340
TP 64	Predicting Chloride Penetration of Hydraulic Cement Concrete by the Rapid Migration Procedure	2003	Adopted	2015	T 357
TP 65	Non-Instrumental Determination of Metallic Zinc in Zinc-Rich Primers	2003	Adopted	2009	T 337
TP 66	Analysis of Structural Steel Coatings for Hindered Amine Light Stabilizer (HALS)	2003	Adopted	2009	T 338
TP 67	Analysis of Structural Steel Coatings for Isocyanate Content	2003	Adopted	2009	T 339
TP 68	Density of In-Place Hot-Mix Asphalt (HMA) Pavement by Electronic Surface Contact Devices	2004	Adopted	2012	T 343

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
TP 69	Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method	2004	Adopted	2007	T 331
TP 70	Multiple Stress Creep Recovery (MSCR) Test of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)	2007	Adopted	2014	T 350
TP 71	Evaluation of Superpave Gyratory Compactor (SGC) Internal Angle of Gyration Using Simulated Loading	2007	Adopted	2012	T 344
TP 72	Quantitative Determination of the Percentage of Lime in Hot Mix Asphalt (HMA)	2008	Adopted	2016 (August)	T 362
TP 73	Slump Flow of Self-Consolidating Concrete (SCC)	2008	Adopted	2013	T 347
TP 74	Passing Ability of Self-Consolidating Concrete (SCC) by J-Ring	2008	Adopted	2012	T 345
TP 75	Air-Void Characteristics of Freshly Mixed Concrete by Buoyancy Change	2008	Adopted	2013	T 348
TP 76	Measurement of Tire/Pavement Noise Using the On-Board Sound Intensity (OBSI) Method	2008	Adopted	2016 (April)	T 360
TP 77	Specific Gravity and Absorption of Aggregate by Volumetric Immersion Method	2009	Adopted	2015	T 354
TP 78	Detecting the Presence of Phosphorous in Asphalt Binder	2009	Adopted	2017 (August)	T 377[c]
TP 79	Determining the Dynamic Modulus and Flow Number for Asphalt Mixtures Using the Asphalt Mixture Performance Tester (AMPT)	2009	Adopted	2017 (August)	T 378
TP 80	Visual Stability Index (VSI) of Self-Consolidating Concrete (SCC)	2009	Adopted	2014	T 351
TP 81	Determining Aggregate Shape Properties by Means of Digital Image Analysis	2010	Adopted	2018 (August)	T 381
TP 82	Bulk Specific Gravity (G_{mb}) of Compacted Bituminous Mixtures Using Water Displacement Measured by Pressure Sensor	2010	Deleted	2018 (August)	—
TP 83	Sampling and Fabrication of 50-mm (2-in.) Cube Specimens Using Grout (Non-Shrink) or Mortar	2010	Adopted	2014	R 64
TP 84	Evaluation of Adhesive Anchors in Concrete Under Sustained Loading Conditions	2010	Deleted	2018 (June)	—
TP 85	Apparent Viscosity of Hot-Poured Bituminous Crack Sealant Using Brookfield Rotational Viscometer RV Series Instrument	2010	Adopted	2017 (June)	T 366

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
TP 86	Accelerated Aging of Bituminous Sealants and Fillers with a Vacuum Oven	2010	Adopted	2017 (June)	T 367[j]
TP 87	Measure Low Temperature Flexural Creep Stiffness of Bituminous Sealants and Fillers by Bending Beam Rheometer (BBR)	2010	Adopted	2017 (June)	T 368
TP 88	Evaluation of the Low-Temperature Tensile Property of Bituminous Sealants by Direct Tension Test	2010	Adopted	2017 (June)	T 369
TP 89	Measuring Adhesion of Hot-Poured Crack Sealant Using Direct Adhesion Tester	2010	Adopted	2017 (June)	T 370
TP 90	Measuring Interfacial Fracture Energy of Hot-Poured Crack Sealant Using a Blister Test	2010	Adopted	2017 (June)	T 371
TP 91	Determining Asphalt Binder Bond Strength by Means of the Asphalt Bond Strength (ABS) Test	2011	Adopted	2016 (August)	T 361
TP 92	Determining the Cracking Temperature of Asphalt Binder Using the Asphalt Binder Cracking Device (ABCD)	2011	Adopted	2019 (July)	T 387
TP 93	Determining Formwork Pressure of Fresh Self-Consolidating Concrete Using Pressure Transducers	2011	Adopted	2014	T 352
TP 94	Filling Capacity of Self-Consolidating Concrete Using the Caisson Test	2011	Adopted	2013	T 349
TP 95	Surface Resistivity Indication of Concrete's Ability to Resist Chloride Ion Penetration	2011	Adopted	2015	T 358
TP 96	Protective Sealers for Portland Cement Concrete	2011	Adopted	2019 (June)	T 384
TP 97	Glass Beads Used in Pavement Markings	2011	Adopted	2012	T 346
TP 98	Determining the Influence of Road Surfaces on Vehicle Noise Using the Statistical Isolated Pass-By (SIP) Method	2011	Adopted	2020 (April)	T 389
TP 99	Determining the Influence of Road Surfaces on Traffic Noise Using the Continuous-Flow Traffic Time-Integrated Method (CTIM)	2011	Adopted	2020 (April)	T 390
TP 100	Deep Foundation Elements under Bidirectional Static Axial Compressive Load	2012	Adopted	2019 (July)	T 385
TP 101	Estimating Fatigue Resistance of Asphalt Binders Using the Linear Amplitude Sweep	2012	Adopted	2020 (July)	T 391
TP 102	Evaluation of Asphalt Release Agents	2012	Adopted	2018 (August)	T 383

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
TP 103	Detectable Warning Systems	2012	Adopted	2020 (June)	T 388
TP 104	Rapid Axial Compressive Load Testing of Deep Foundation Units	2013	Adopted	2019 (July)	T 386
TP 105	Determining the Fracture Energy of Asphalt Mixtures Using the Semicircular Bend Geometry (SCB)	2013	Adopted	2021	T 394
TP 106	Determination of Heavy Metal Content of Glass Beads Using X-Ray Fluorescence (XRF)	2013	Adopted	2021	T 392
TP 107	Determining the Damage Characteristic Curve of Asphalt Mixtures from Direct Tension Cyclic Fatigue Tests	2014	Adopted	2022	T 400
TP 108	Determining the Abrasion Loss of Asphalt Mixture Specimens	2014	Adopted	2022	T 401
TP 109	Nonlinear Impact Resonance Acoustic Spectroscopy (NIRAS) for Concrete Specimens with Damage from the Alkali-Silica Reaction (ASR)	2014	Adopted	2018 (April)	T 379
TP 110	Potential Alkali Reactivity of Aggregates and Effectiveness of ASR Mitigation Measures (Miniature Concrete Prism Test, MCPT)	2014	Adopted	2018 (April)	T 380
TP 111	Measuring Retroreflectivity of Pavement Marking Materials Using a Mobile Retroreflectivity Unit	2014	Adopted	2022	T 398
TP 112	Determining In-Place Density and Moisture Content of Soil and Soil-Aggregate Using Complex Impedance Methodology	2014	Adopted	2022	T 399
TP 113	Determination of Asphalt Binder Resistance to Ductile Failure Using Double-Edge-Notched Tension (DENT) Test	2015	Adopted	2023	T 405
TP 114	Determining the Interlayer Shear Strength (ISS) of Asphalt Pavement Layers	2015	Adopted	2023	T 407
TP 115	Determining the Quality of Tack Coat Adhesion to the Surface of an Asphalt Pavement in the Field or Laboratory	2015	Adopted	2023	T 408
TP 116	Rutting and Fatigue Resistance of Asphalt Mixtures Using Incremental Repeated Load Permanent Deformation (iRLPD)	2015	Adopted	2023	T 410
TP 117	Determination of the Voids of Dry Compacted Filler	2015	Adopted	2023	T 409
TP 118	Characterization of the Air-Void System of Freshly Mixed Concrete by the Sequential Pressure Method	2015	Adopted	2022	T 395
TP 119	Electrical Resistivity of a Concrete Cylinder Tested in a Uniaxial Resistance Test	2015	Adopted	2023	T 402
TP 120	Pore Index for Carbonate Coarse Aggregate	2016			

Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
TP 121	Determining the Viscosity of Emulsified Asphalt by a Rotational Paddle Viscometer	2016	Adopted	2018 (August)	T 382
TP 122	Determination of Performance Grade of Physically Aged Asphalt Binder Using Extended Bending Beam Rheometer (BBR) Method	2016	Adopted	2023	T 406
TP 123	Measuring Asphalt Binder Yield Energy and Elastic Recovery Using the Dynamic Shear Rheometer	2016			
TP 124	Determining the Fracture Potential of Asphalt Mixtures Using the Illinois Flexibility Index Test (I-FIT)	2016	Adopted	2021	T 393
TP 125	Determining the Flexural Creep Stiffness of Asphalt Mixtures Using the Bending Beam Rheometer (BBR)	2016			
TP 126	Evaluation of the Tracking Resistance of Hot-Poured Asphalt Crack Sealant by Dynamic Shear Rheometer (DSR)	2017	Adopted	2023	T 404
TP 127	Determining the Fracture Energy Density of Asphalt Binder Using the Binder Fracture Energy (BFE) Test	2017			
TP 128	Evaluation of Oxidation Level of Asphalt Mixtures by a Portable Infrared Spectrometer	2017			
TP 129	Vibrating Kelly Ball (VKelly) Penetration in Fresh Portland Cement Concrete	2018	Adopted	2023	T 403
TP 130	Producing Drawdown Panels and Measuring the Coefficient of Retroreflected Luminance (RL) of Pavement Markings in a Laboratory Panel	2018			
TP 131	Determining Dynamic Modulus of Asphalt Concrete Using the Indirect Tension Test	2018			
TP 132	Determining the Dynamic Modulus for Asphalt Mixtures Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT)	2019			
TP 133	Determining the Damage Characteristic Curve and Failure Criterion Using Small Specimens in the Asphalt Mixture Performance Tester (AMPT)	2019	Adopted	2023	T 411
TP 134	Stress Sweep Rutting (SSR) Test Using Asphalt Mixture Performance Tester (AMPT)	2019			
TP 135	Determining the Total Pore Volume in Hardened Concrete Using Vacuum Saturation	2020			
TP 136	Determining the Degree of Saturation of Hydraulic-Cement Concrete	2020			

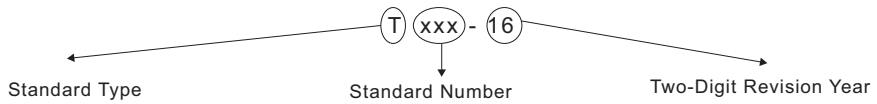
Provisional Standard Number	Title	First Publ. Year	Final Disposition	Disposit. Year[a]	Full Std. No.
TP 137	Box Test in Slip Form Paving of Fresh Portland Cement Concrete	2020	Adopted	2022	T 396
TP 138	Weight and Diameter for Carbon-Steel for Steel Wire and Welded Wire Reinforcement for Concrete	2020			
TP 139	Determining the Specific Gravity and Absorption of Lightweight Aggregate for Internally Cured Concrete Mixtures	2020			
TP 140	Moisture Sensitivity Using Hydrostatic Pore Pressure to Determine Cohesion and Adhesion Strength of Compacted Asphalt Mixture Specimens	2020			
TP 141	Determining the Indirect Tensile Nflex Factor to Assess the Cracking Resistance of Asphalt Mixtures	2020			
TP 142	Accelerated Determination of Potentially Deleterious Expansion of Concrete Cylinder due to Alkali–Silica Reactivity	2021			
TP 143	Continuous Measurement of Sideway-Force Friction Number for Highway Pavements	2021			
TP 144	Determining the Potential Alkali–Silica Reactivity of Aggregates (TFHRC-TFAST)	2021			

[a] Disposition month is listed only for 2016–2020, in which standards were released in April, June, or July.
[b] Discontinued notice omitted.
[c] Adopted in 1995 as R 19. R 19 was discontinued in 2004.
[d] Adopted in 2005 as R 41. R 41 was discontinued in 2019.
[e] Adopted in 2008 as R 48. R 48 was discontinued in 2018.
[f] Adopted in 2010 as R 55. R 55 was discontinued in 2018.
[g] Adopted in 2010 as R 53. R 53 was discontinued in 2015.
[h] Reclassified as a provisional specification MP 17 in 2007 then reclassified again as a practice when adopted as a full standard.
[i] Discontinued in 2016 then adopted in 2017.
[j] Adopted in 2017 (June) as T 367. T 367 was reclassified as R 95 in 2019.

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. A provisional that is subsequently adopted as a full standard will receive a new number; likewise a standard that changes types (e.g. test to practice).

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 Committee on Materials and Pavements. 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 Committee 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.

Designation Key

A key is provided below the designation number. The information on the left indicates what year the standard was most recently technically revised, or when it was first published, adopted, or reclassified. If the standard has been reconfirmed or extended, the center tab will read "Reviewed but Not Updated:" and the year; otherwise, it will be empty. If unballoted technical corrections or clarifications have been made by the author subcommittee, the right tab will read "Editorially Revised:" and the year; otherwise, it will be empty.