

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 ASTM C76-22.
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 ASTM A709/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 (ΔT_c) Parameter	2b	Adopted PP 113 as a full standard practice, R 118, without revisions.

LIST OF TECHNICAL CHANGES—PART 2

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Release: July 2023

Designation Number	Title	TS	Balloted Changes
T 11-23	Materials Finer Than 75- μ m (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 equivalency 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- μ m (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 C1202-22e1.
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 Evaluation 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.

LIST OF TECHNICAL CHANGES—PART 3

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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 Gyrotory 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 (ΔT_c) 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.