



SCOPE OF ACCREDITATION TO ISO/IEC 17043:2023

AASHTO RE:SOURCE
 4441 Buckeystown Pike, Suite A
 Frederick, MD 21704
 Tracy Barnhart tbarnhart@ashtoresource.org

PROFICIENCY TESTING PROVIDER

Valid To: March 31, 2029

Certificate Number: 4159.01

In recognition of the successful completion of the A2LA evaluation process, this proficiency testing provider has been found to meet ISO/IEC 17043:2023, “Conformity Assessment – General Requirements for the Competence of Proficiency Testing Providers”. Accreditation is granted to this provider to provide proficiency testing samples in the following programs:

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Soil Classification and Compaction	1. Total material passing the 2.00-mm (No. 10) sieve 2. Total material passing the 0.425-mm (No. 40) sieve 3. Total material passing the 0.075-mm (No. 200) sieve 4. Total material smaller than 0.02 mm 5. Total material smaller than 0.002 mm 6. Total material smaller than 0.001 mm	AASHTO T 88 Standard Method of Test for Particle Size Analysis of Soils ASTM D422 Standard Test Method for Particle-Size Analysis
	1. Liquid limit	AASHTO T 89 Standard Method of Test for Determining the Liquid Limit of Soils ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
	1. Plastic limit	AASHTO T 90 Standard Method of Test for Determining the Plastic Limit and Plasticity Index of Soils ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
	1. Shrinkage limit (Water Submersion Method)	ASTM D4943 Standard Test Method for Shrinkage Factors of Cohesive Soils by the Water Submersion Method

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Soil Classification and Compaction (cont)	<ol style="list-style-type: none"> 1. Optimum moisture content (Standard) 2. Maximum dry density (Standard) 	<p>AASHTO T 99 Standard Method of Test for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop</p> <p>ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft³ (600 kN-m/m³))</p>
	<ol style="list-style-type: none"> 1. Specific gravity, passing 2.00 mm (No. 10), TX / 20°C 	<p>AASHTO T 100 Standard Method of Test for Specific Gravity of Soils</p> <p>ASTM D854 Standard Test Methods for Specific Gravity of Soil Solids by Water Pycnometer</p>
	<ol style="list-style-type: none"> 1. Optimum moisture content (Modified) 2. Maximum dry density (Modified) 	<p>AASHTO T 180 Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop</p> <p>ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))</p>
	<ol style="list-style-type: none"> 1. Particle diameter (D) at 4 minutes of sedimentation 2. Particle diameter (D) at 30 minutes of sedimentation 3. Particle diameter (D) at 60 minutes of sedimentation 4. Particle diameter (D) at 240 minutes of sedimentation 5. Particle diameter (D) at 1440 minutes of sedimentation 6. Total percent finer (Nm) at 4 minutes of sedimentation 7. Total percent finer (Nm) at 30 minutes of sedimentation 8. Total percent finer (Nm) at 60 minutes of sedimentation 9. Total percent finer (Nm) at 240 minutes of sedimentation 10. Total percent finer (Nm) at 1440 minutes of sedimentation 	<p>ASTM D7928 Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis</p>

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Soil Classification and Compaction (cont).	1. Organic content	<p>AASHTO T 267 Standard Test Method for Determination of Organic Content in Soils by Loss on Ignition</p> <p>ASTM D2974 Standard Test Methods for Determining the Water (Moisture) Content, Ash Content, and Organic Material of Peat and Other Organic Soils</p>
	1. Soil resistivity	<p>AASHTO T 288 Standard Method of Test for Determining Minimum Laboratory Soil Resistivity</p> <p>ASTM G187 Standard Test Method for Measurement of Soil Resistivity Using the Two-Electrode Soil Box Method</p>
Soil Resistance R-Value	<ol style="list-style-type: none"> 1. Water (Moisture) content as received 2. R-Value at 300 psi (2068 kPa) exudation pressure 	<p>AASHTO T 190 Standard Method of Test for Resistance R-Value and Expansion Pressure of Compacted Soils</p> <p>ASTM D2844 Standard Test Method for Resistance R-Value and Expansion Pressure of Compacted Soils</p>
California Bearing Ratio (CBR)	<ol style="list-style-type: none"> 1. Water (Moisture) content as Received 2. Water content immediately Before Compaction 3. Water content of unused material immediately after compaction 4. Dry unit weight of compacted specimen before soaking 5. Swell - percentage of initial specimen height 6. CBR (corrected) at 0.1 in. penetration 7. CBR (corrected) at 0.2 in. penetration 	<p>AASHTO T 193 Standard Method of Test for The California Bearing Ratio</p> <p>ASTM D1883 Standard Test Method for California Bearing Ratio (CBR) of Laboratory-Compacted Soils</p>
Aggregate Gradation and Gravity	1. Percentage finer than the 75- μ m sieve by washing	<p>AASHTO T 11 Standard Method of Test for Materials Finer Than 75-μm (No. 200) Sieve in Mineral Aggregates by Washing</p> <p>ASTM C117 Standard Test Method for Materials Finer than 75-μm (No. 200) Sieve in Mineral Aggregates by Washing</p>

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Aggregate Gradation and Gravity (cont)	<ol style="list-style-type: none"> 1. Total material passing the 25.0-mm (1-in.) sieve 2. Total material passing the 19.0-mm (3/4-in.) sieve 3. Total material passing the 12.5-mm (1/2-in.) sieve 4. Total material passing the 9.5-mm (3/8-in.) sieve 5. Total material passing the 4.75-mm (No. 4) sieve 6. Total material passing the 2.36-mm (No. 8) sieve 7. Total material passing the 1.18-mm (No. 16) sieve 8. Total material passing the 600-μm (No. 30) sieve 9. Total material passing the 300-μm (No. 50) sieve 10. Total material passing the 150-μm (No. 100) sieve 11. Total material passing the 75-μm (No. 200) sieve 	<p>AASHTO T 27 Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates</p> <p>ASTM C136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates</p>
	<ol style="list-style-type: none"> 1. Bulk specific gravity [or relative density, OD for C128] 2. Bulk specific gravity, SSD [or relative density, SSD for C128] 3. Apparent specific gravity [or apparent relative density for C128] 4. Absorption 	<p>AASHTO T 85 Standard Method of Test for Specific Gravity and Absorption of Coarse Aggregate</p> <p>ASTM C127 Standard Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate</p>
	<ol style="list-style-type: none"> 1. Bulk specific gravity [or relative density, OD for C127] 2. Bulk specific gravity, SSD [or relative density, SSD for C127] 3. Apparent specific gravity [or apparent relative density for C127] 4. Absorption 	<p>AASHTO T 85 Standard Method of Test for Specific Gravity and Absorption of Coarse Aggregate</p> <p>ASTM C127 Standard Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate</p>
	<ol style="list-style-type: none"> 1. Sand Equivalent value 	<p>AASHTO T 176 Standard Method of Test for Plastic Fines in Graded Aggregates and Soils by Use of the Sand Equivalent Test</p> <p>ASTM D2419 Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate</p>
	<ol style="list-style-type: none"> 1. Uncompacted voids, test run #1 2. Uncompacted voids, test run #2 3. Uncompacted voids, average of two runs 	<p>AASHTO T 304 Standard Method of Test for Uncompacted Void Content of Fine Aggregate</p> <p>ASTM C1252 Standard Test Methods for Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading)</p>

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Aggregate Degradation	1. Percentage of loss by abrasion and impact	<p>AASHTO T 96 Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine</p> <p>ASTM C131 Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine</p>
	<ol style="list-style-type: none"> 1. Sodium sulfate-percentage of 19.0 to 9.5-mm fraction passing 8.0-mm sieve 2. Sodium sulfate-percentage of 9.5 to 4.75-mm fraction passing 4.0-mm sieve 3. Magnesium sulfate-percentage of 19.0 to 9.5-mm fraction passing 8.0-mm sieve 4. Magnesium sulfate-percentage of 9.5 to 4.75-mm fraction passing 4.0-mm sieve 	<p>AASHTO T 104 Standard Method of Test for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate</p> <p>ASTM C 88 Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate</p>
	1. Percentage of loss in the Micro-Deval	<p>AASHTO T 327 Standard Method of Test for Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus</p> <p>ASTM D6928 Standard Test Method for Resistance of Coarse Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus</p>
	1. Micro-Deval abrasion loss	ASTM D7428 Standard Test Method for Resistance of Fine Aggregate to Degradation by Abrasion in the Micro-Deval Apparatus
Viscosity Graded Asphalt Cement	1. Corrected flash point	<p>AASHTO T 48 Standard Method of Test for Flash Point of Asphalt Binder by Cleveland Open Cup</p> <p>ASTM D92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester</p>

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Viscosity Graded Asphalt Cement (cont)	1. Penetration of original sample at 25 °C, 100 g, 5 s 2. Penetration of original sample at 4 °C, 200 g, 60 s	AASHTO T 49 Standard Method of Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for Penetration of Bituminous Materials
	1. Kinematic viscosity of original asphalt at 135 °C	AASHTO T 201 Standard Method of Test for Kinematic Viscosity of Asphalts (Bitumens) ASTM D2170 Standard Test Method for Kinematic Viscosity of Asphalts
	1. Viscosity of original asphalt at 60 °C	AASHTO T 202 Standard Method of Test for Viscosity of Asphalts by Vacuum Capillary Viscometer ASTM D2171 Standard Test Method for Viscosity of Asphalts by Vacuum Capillary Viscometer
	1. Specific gravity (relative density) at 25/25 °C	AASHTO T 228 Standard Method of Test for Specific Gravity of Semi-Solid Asphalt Materials ASTM D70 Standard Test Method for Density of Semi-Solid Asphalt Binder (Pycnometer Method)
	1. Change in mass	AASHTO T 240 Standard Method of Test for Effect of Heat and Air on a Moving Film of Asphalt Binder (Rolling Thin-Film Oven Test) ASTM D2872 Standard Test Method for Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test)
Viscosity Graded Asphalt Cement - Tests on Rolling Thin Film Oven (RTFO) Residue	1. Penetration of RTFO residue at 25 °C, 100 g, 5 s 2. Penetration of RTFO residue at 4 °C, 200 g, 60 s	AASHTO T 49 Standard Method of Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for Penetration of Bituminous Materials



<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Viscosity Graded Asphalt Cement - Tests on Rolling Thin Film Oven (RTFO) Residue (cont)	1. Kinematic viscosity of RTFO residue at 135 °C	AASHTO T 201 Standard Method of Test for Kinematic Viscosity of Asphalts (Bitumens) ASTM D2170 Standard Test Method for Kinematic Viscosity of Asphalts
	1. Viscosity of RTFO residue at 60 °C	AASHTO T 202 Standard Method of Test for Viscosity of Asphalts by Vacuum Capillary Viscometer ASTM D2171 Standard Test Method for Viscosity of Asphalts by Vacuum Capillary Viscometer
Performance Graded Asphalt Binder – Tests on Original Binder	1. Corrected flash point	AASHTO T 48 Standard Method of Test for Flash Point of Asphalt Binder by Cleveland Open Cup ASTM D92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester
	1. Specific gravity (relative density) at 25/25 °C	AASHTO T 228 Standard Method of Test for Specific Gravity of Semi-Solid Asphalt Materials ASTM D70 Standard Test Method for Density of Semi-Solid Asphalt Binder (Pycnometer Method)
	1. Average percent elongation recovery	AASHTO T 301 Standard Method of Test for Elastic Recovery Test of Asphalt Materials by Means of a Ductilometer ASTM D6084 Standard Test Method for Elastic Recovery of Asphalt Materials by Ductilometer
	1. Complex shear modulus, G* 2. Phase angle, δ 3. G* / sin δ (Original)	AASHTO T 315 Standard Method of Test for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR) ASTM D7175 Standard Test Method for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Performance Graded Asphalt Binder – Tests on Original Binder (cont)	1. Rotational viscosity at 135 °C	AASHTO T 316 Standard Method of Test for Viscosity Determination of Asphalt Binder Using Rotational Viscometer ASTM D4402 Standard Test Method for Viscosity Determination of Asphalt at Elevated Temperatures Using a Rotational Viscometer
	1. Ash content of the residue	ASTM D8078 Standard Test Method for Ash Content of Asphalt and Emulsified Asphalt Residues
Performance Graded Asphalt Binder - Tests on Rolling Thin Film Oven (RTFO) Material	1. Change in mass	AASHTO T 240 Standard Method of Test for Effect of Heat and Air on a Moving Film of Asphalt Binder (Rolling Thin-Film Oven Test) ASTM D2872 Standard Test Method for Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test)
	1. Complex shear modulus, G* 2. Phase angle, δ 1. G* / sin δ (Original)	AASHTO T 315 Standard Method of Test for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR) ASTM D7175 Standard Test Method for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer
	1. Average percent recovery at 0.1 kPa, R0.1 2. Average percent recovery at 3.2 kPa, R3.2 3. Percent difference in recovery between 0.1 and 3.2 kPa, Rdiff 4. Non-recoverable creep compliance at 0.1 kPa, Jnr0.1 5. Non-recoverable creep compliance at 3.2 kPa, Jnr3.2 6. Percent difference of non-recoverable creep compliance, Jnr-diff	AASHTO T 350 Standard Method of Test for Multiple Stress Creep Recovery (MSCR) Test of Asphalt Binder Using a Dynamic Shear Rheometer (DSR) ASTM D7405 Standard Test Method for Multiple Stress Creep and Recovery (MSCR) of Asphalt Binder Using a Dynamic Shear Rheometer

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Performance Graded Asphalt Binder - Tests on Pressurized Aging Vessel (PAV) Residue	Not Applicable – the referenced standards under ‘Test Method Titles/Type of PT Item(s)’ column are sample conditioning procedures/methods which support the testing for the applicable PT scheme. Therefore, there is no measurand or characteristic to be identified.	<p>Sample Conditioning Procedures/Methods:</p> <p>AASHTO R 28 Standard Practice for Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)</p> <p>ASTM D6521 Standard Practice for Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)</p>
	<ol style="list-style-type: none"> 1. Estimated stiffness (Trial 1) 2. Estimated stiffness (Trial 2) 3. Estimated stiffness (Average) 4. Estimated slope, m-value (Trial 1) 5. Estimated slope, m-value (Trial 2) 6. Estimated slope, m-value (Average) 	<p>AASHTO T 313 Standard Method of Test for Determining the Flexural Creep Stiffness of Asphalt Binder Using the Bending Beam Rheometer (BBR)</p> <p>ASTM D6648 Standard Test Method for Determining the Flexural Creep Stiffness of Asphalt Binder Using the Bending Beam Rheometer (BBR)</p>
	<ol style="list-style-type: none"> 1. Complex shear modulus, G^* 2. Phase angle, δ 2. $G^* / \sin \delta$ (Original) 	<p>AASHTO T 315 Standard Method of Test for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR)</p> <p>ASTM D7175 Standard Test Method for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer</p>
Slurry and Micro Systems	<ol style="list-style-type: none"> 1. Water (moisture) content as received 	<p>AASHTO T 255 Standard Method of Test for Total Evaporable Moisture Content of Aggregate by Drying</p> <p>ASTM C566 Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying</p>

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Slurry and Micro Systems (cont)	1. Loss corrected to C-100 mixer	ISSA TB-100 Test Method for Wet Track Abrasion of Slurry Surfacing Systems ASTM D3910 Standard Practices for Design, Testing, and Construction of Slurry Seal ASTM D6372 Standard Practice for Design, Testing, and Construction of Microsurfacing
	1. Cycle number where "audible tackiness" is determined 2. Mass of adhered sand	ISSA TB-109 Test Method for Measurement of Excess Asphalt In Bituminous Mixtures by Use of a Loaded Wheel Tester and Sand Adhesion
	1. Time to "break" 2. Time to clear water set	ISSA TB-113 Test Method for Determining Mix Time for Slurry Surfacing Systems
	1. Torque value at time 30 minutes 2. Torque value at time 60 minutes 3. Torque value at time 90 minutes	ISSA TB-139 Test Method to Determine Set and Cure Development of Slurry Surfacing Systems by Cohesion Tester ASTM D3910 Standard Practices for Design, Testing, and Construction of Slurry Seal ASTM D6372 Standard Practice for Design, Testing, and Construction of Microsurfacing
	1. Percent vertical displacement as percent of original thickness 2. Percent lateral displacement as percent increase of width	ISSA TB-147 Test Method for Measurement of Stability and Resistance to Compaction, Vertical and Lateral Displacement of Multilayered Fine Aggregate Cold Mixes ASTM D6372 Standard Practice for Design, Testing, and Construction of Microsurfacing

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Unmodified Emulsified Asphalt	1. Saybolt furol viscosity	AASHTO T 59 Standard Method of Test for Emulsified Asphalts ASTM D7496 Standard Test Method for Viscosity of Emulsified Asphalt by Saybolt Furol Viscometer
	1. Apparent viscosity at 50°C	AASHTO T 382 Standard Method of Test for Determining the Viscosity of Emulsified Asphalt by a Rotational Paddle Viscometer ASTM D7226 Standard Test Method for Determining the Viscosity of Emulsified Asphalts Using a Rotational Paddle Viscometer
Emulsified Asphalt – Tests on Residue by Distillation	1. Percent solubility of the residue	AASHTO T 44 Standard Method of Test for Solubility of Bituminous Materials ASTM D2042 Standard Test Method for Solubility of Asphalt Materials in Trichloroethylene
	1. Penetration of the residue @ 25 °C (Distillation)	AASHTO T 49 Standard Method of Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for Penetration of Bituminous Materials
	1. Percent residue 2. Percent oil distillate by volume of emulsion	AASHTO T 59 Standard Method of Test for Emulsified Asphalts ASTM D6997 Standard Test Method for Distillation of Emulsified Asphalt
Emulsified Asphalt – Tests on Residue by Evaporation	1. Percent Solubility of the Residue (Distillation)	AASHTO T 44 Standard Method of Test for Solubility of Bituminous Materials ASTM D2042 Standard Test Method for Solubility of Asphalt Materials in Trichloroethylene

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Unmodified Emulsified Asphalt – Tests on Residue by Evaporation (cont)	1. Penetration of the Residue @ 25 °C (Distillation)	AASHTO T 49 Standard Method of Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for Penetration of Bituminous Materials
	1. Percent Residue - average of beakers	AASHTO T 59 Standard Method of Test for Emulsified Asphalts ASTM D6934 Standard Test Method for Residue by Evaporation of Emulsified Asphalt
	1. Ash Content of the Residue (Performance Graded Asphalt)	ASTM D8078 Standard Test Method for Ash Content of Asphalt and Emulsified Asphalt Residues
Polymer – Modified Emulsified Asphalt	1. Saybolt Furol Viscosity	AASHTO T 59 Standard Method of Test for Emulsified Asphalts ASTM D7496 Standard Test Method for Viscosity of Emulsified Asphalt by Saybolt Furol Viscometer
	1. Apparent Viscosity	AASHTO T 382 Standard Method of Test for Determining the Viscosity of Emulsified Asphalt by a Rotational Paddle Viscometer ASTM D7226 Standard Test Method for Determining the Viscosity of Emulsified Asphalts Using a Rotational Paddle Viscometer
Polymer – Modified Emulsified Asphalt – Tests on Residue by Distillation	1. Percent Residue 2. Percent oil distillate by volume of emulsion	AASHTO T 59 Standard Method of Test for Emulsified Asphalts ASTM D6997 Standard Test Method for Distillation of Emulsified Asphalt
	1. Penetration of the residue @ 25 °C (Distillation)	AASHTO T 49 Standard Method of Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for

		Penetration of Bituminous Materials
--	--	-------------------------------------

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Polymer – Modified Emulsified Asphalt – Tests on Residue by Distillation (cont)	1. Percent elongation recovery (Distillation)	AASHTO T 301 Standard Method of Test for Elastic Recovery Test of Asphalt Materials by Means of a Ductilometer ASTM D6084 Standard Test Method for Elastic Recovery of Asphalt Materials by Ductilometer
	1. Ash content of the residue (Distillation)	ASTM D8078 Standard Test Method for Ash Content of Asphalt Binder and Emulsified Asphalt Residues
Polymer – Modified Emulsified Asphalt – Tests on Residue by Evaporation	1. Percent residue – average of beakers	AASHTO T 59 Standard Method of Test for Emulsified Asphalts ASTM D6934 Standard Test Method for Residue by Evaporation of Emulsified Asphalt
	1. Penetration of the residue @ 25 °C (Evaporation)	AASHTO T 49 Standard Method of Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for Penetration of Bituminous Materials
	1. Percentage elongation recovery (Evaporation)	AASHTO T 301 Standard Method of Test for Elastic Recovery Test of Asphalt Materials by Means of a Ductilometer ASTM D6084 Standard Test Method for Elastic Recovery of Asphalt Materials by Ductilometer
	1. Ash content of the residue (Evaporation)	ASTM D8078 Standard Test Method for Ash Content of Asphalt Binder and Emulsified Asphalt Residues
Polymer – Modified Emulsified Asphalt – Tests on Residue by Vacuum Distillation	1. Percent Residue (Vacuum Distillation)	ASTM D7403 Standard Test Method for Determination of Residue of Emulsified Asphalt by Low Temperature Vacuum Distillation
	1. Percent of the residue @ 25 °C (Vacuum	AASHTO T 49 Standard Method of



	Distillation)	Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for Penetration of Bituminous Materials
--	---------------	--

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Polymer – Modified Emulsified Asphalt – Tests on Residue by Vacuum Distillation (cont)	1. Percent elongation recovery (Vacuum Distillation)	AASHTO T 301 Standard Method of Test for Elastic Recovery Test of Asphalt Materials by Means of a Ductilometer ASTM D6084 Standard Test Method for Elastic Recovery of Asphalt Materials by Ductilometer
	1. Ash content of the residue (Vacuum Distillation)	ASTM D8078 Standard Test Method for Ash Content of Asphalt Binder and Emulsified Asphalt Residues
Polymer – Modified Emulsified Asphalt by Low Temp Evaporation	1. Penetration of the residue @ 25 °C (Low Temp Evaporation)	AASHTO T 49 Standard Method of Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for Penetration of Bituminous Materials
	1. Percent elongation recovery (Low Temp Evaporation)	AASHTO T 301 Standard Method of Test for Elastic Recovery Test of Asphalt Materials by Means of a Ductilometer ASTM D6084 Standard Test Method for Elastic Recovery of Asphalt Materials by Ductilometer
	1. Ash content of the residue (low Temp Evaporation)	ASTM D8078 Standard Test Method for Ash Content of Asphalt Binder and Emulsified Asphalt Residues
	1. Percent residue	ASTM D8467 Standard Test Method for Determination of Emulsified Asphalt Residue By Quick Boil
Asphalt Mixture Solvent Extraction	1. Sample mass, assume moisture free 2. Percent asphalt	AASHTO T 164 Standard Method of Test for Quantitative Extraction of Asphalt Binder from Hot Mix

		<p>Asphalt (HMA)</p> <p>ASTM D2172 Standard Test Methods for Quantitative Extraction of Asphalt Binder from Asphalt Mixtures</p> <p>AASHTO T 319 Standard Method of Test for Quantitative Extraction and Recovery of Asphalt Binder from Asphalt Mixtures</p> <p>ASTM D8159 Standard Test Method for Automated Extraction of Asphalt Binder from Asphalt Mixtures</p>
--	--	---

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Asphalt Mixture Solvent Extraction (cont)	<ol style="list-style-type: none"> 1. Mass removed by washing over 75-μm (No. 200) sieve 2. Total material passing the 12.5-mm (1/2 in.) sieve 3. Total material passing the 9.5-mm (3/8 in.) sieve 4. Total material passing the 4.75-mm (No. 4) sieve 5. Total material passing the 2.36-mm (No. 8) sieve 6. Total material passing the 1.18-mm (No. 16) sieve 7. Total material passing the 600-μm (No. 30) sieve 8. Total material passing the 300-μm (No. 50) sieve 9. Total material passing the 150-μm (No. 100) sieve 10. Total material passing the 75-μm (No. 200) sieve 	<p>AASHTO T 30 Standard Method of Test for Mechanical Analysis of Extracted Aggregate</p> <p>ASTM D5444 Standard Test Method for Mechanical Size Analysis of Extracted Aggregate</p>
Asphalt Mixture Solvent Extraction - Recovery and Testing of Asphalt Residue	Not Applicable – the referenced standards under ‘Test Method Titles/Type of PT Item(s)’ column are sample conditioning procedures/methods which support the testing for the applicable PT scheme. Therefore, there is no measurand or characteristic to be identified.	<p>Sample Conditioning Procedures/Methods:</p> <p>AASHTO R 59 Standard Practice for Recovery of Asphalt Binder from Solution by Abson Method</p> <p>ASTM D1856 Standard Test Method for Recovery of Asphalt From Solution by Abson Method</p>
	Not Applicable – the referenced standards under ‘Test Method Titles/Type of PT Item(s)’ column are sample conditioning procedures/methods which support the testing for the applicable PT scheme. Therefore, there is no measurand or characteristic to be identified.	<p>Sample Conditioning Procedures/Methods:</p> <p>AASHTO T 319 Standard Method of Test for Quantitative Extraction and Recovery of Asphalt Binder from</p>



		Asphalt Mixtures ASTM D5404 Standard Practice for Recovery of Asphalt from Solution Using the Rotary Evaporator
	1. Penetration of the residue @ 25°C, 100 g, 5 s (Abson)	AASHTO T 49 Standard Method of Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for Penetration of Bituminous Materials

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
	1. $G^* / \sin \delta$ tested as original binder (Abson)	AASHTO T 315 Standard Method of Test for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR) ASTM D7175 Standard Test Method for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer
	1. Penetration of the residue @ 25°C, 100 g, 5 s (Rotavapor)	AASHTO T 49 Standard Method of Test for Penetration of Bituminous Materials ASTM D5 Standard Test Method for Penetration of Bituminous Materials
	1. $G^* / \sin \delta$ tested as original binder (Rotavapor)	AASHTO T 315 Standard Method of Test for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR) ASTM D7175 Standard Test Method for Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer
Asphalt Mixture Gyratory	1. Specific gravity of mineral filler	AASHTO T 100 Standard Method of Test for Specific Gravity of Soils
	1. Maximum specific gravity	AASHTO T 166 Standard Method of

		<p>Test for Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens</p> <p>ASTM D2726 Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures</p>
--	--	--

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Asphalt Mixture Gyratory (cont)	1. Bulk specific gravity (Saturated Surface-Dry Method)	<p>AASHTO T 209 Standard Method of Test for Theoretical Maximum Specific Gravity (Gmm) and Density of Asphalt Mixtures</p> <p>ASTM D2041 Standard Test Method for Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures</p>
	1. Height during compaction after 8 gyrations 2. Height during compaction after 100 gyrations 3. Percent of maximum specific gravity after 8 gyrations 4. Percent of maximum specific gravity after 100 gyrations	<p>AASHTO T 312 Standard Method of Test for Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyratory Compactor</p> <p>ASTM D6925 Standard Test Method for Preparation and Determination of the Relative Density of Asphalt Mix Specimens by Means of the Superpave Gyratory Compactor</p>
	1. Bulk specific gravity (Vacuum Sealing Method)	<p>AASHTO T 331 Standard Method of Test for Bulk Specific Gravity (Gmb) and Density of Compacted Hot Mix Asphalt (HMA) Using Automatic Vacuum Sealing Method</p> <p>ASTM D6752 Standard Test Method for Bulk Specific Gravity and</p>



		Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method
Asphalt Mixture Marshall Design	1. Average bulk specific gravity	AASHTO T 166 Standard Method of Test for Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens ASTM D2726 Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Asphalt Mixture Marshall Design	1. Maximum specific gravity	AASHTO T 209 Standard Method of Test for Theoretical Maximum Specific Gravity (Gmm) and Density of Asphalt Mixtures ASTM D2041 Standard Test Method for Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures
	1. Average Marshall stability	AASHTO T 245 Standard Method of Test for Resistance to Plastic Flow of Asphalt Mixtures Using Marshall Apparatus ASTM D6926 Standard Practice for Preparation of Asphalt Mixture Specimens Using Marshall Apparatus
	1. Average Marshall flow	AASHTO T 245 Standard Method of Test for Resistance to Plastic Flow of Asphalt Mixtures Using Marshall Apparatus ASTM D6927 Standard Test Method for Marshall Stability and Flow of Asphalt Mixtures
	1. Percent air voids	AASHTO T 269 Standard Method of

		<p>Test for Percent Air Voids in Compacted Dense and Open Asphalt Mixtures</p> <p>ASTM D3203 Standard Test Method for Percent Air Voids in Compacted Asphalt Mixtures</p>
	1. Bulk specific gravity (Vacuum Sealing Method)	<p>AASHTO T 331 Standard Method of Test for Bulk Specific Gravity (Gmb) and Density of Compacted Hot Mix Asphalt (HMA) Using Automatic Vacuum Sealing Method</p> <p>ASTM D6752 Standard Test Method for Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method</p>

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Asphalt Mixture Marshall Design (cont)	1. Overall average specimen height	ASTM D3549 Standard Test Method for Thickness or Height of Compacted Asphalt Mixture Specimens
Asphalt Mixture Hveem Design – California Kneading Compaction (HCA)	1. Bulk specific gravity (Saturated Surface-Dry Method)	<p>AASHTO T 166 Standard Method of Test for Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens</p> <p>ASTM D2726 Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures</p>
	1. Bulk specific gravity (Vacuum Sealing Method)	<p>AASHTO T 331 Standard Method of Test for Bulk Specific Gravity (Gmb) and Density of Compacted Hot Mix Asphalt (HMA) Using Automatic Vacuum Sealing Method</p> <p>ASTM D6752 Standard Test Method for Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method</p>
	1. Maximum specific gravity	AASHTO T 209 Standard Method of



		<p>Test for Theoretical Maximum Specific Gravity (Gmm) and Density of Asphalt Mixtures</p> <p>ASTM D2041 Standard Test Method for Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures</p>
	<ol style="list-style-type: none"> 1. Specimen height (nearest 0.01 in.) 2. Stabilometer value uncorrected 3. Stabilometer value corrected 	<p>AASHTO T 246 Standard Method of Test for Resistance to Deformation and Cohesion of Hot Mix Asphalt (HMA) by Means of Hveem Apparatus</p> <p>ASTM D1560 Standard Test Methods for Resistance to Deformation and Cohesion of Asphalt Mixtures by Means of Hveem Apparatus</p>
<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Asphalt Mixture Hveem Design – California Kneading Compaction (HCA) (cont)	<ol style="list-style-type: none"> 1. Percent air voids 	<p>AASHTO T 269 Standard Method of Test for Percent Air Voids in Compacted Dense and Open Asphalt Mixtures</p> <p>ASTM D3203 Standard Test Method for Percent Air Voids in Compacted Asphalt Mixtures</p>
Asphalt Mixture HVEEM Design – Gyrotory Shear Compaction (HTX)	<ol style="list-style-type: none"> 1. Bulk specific gravity (Saturated Surface-Dry Method) 	<p>AASHTO T 166 Standard Method of Test for Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens</p> <p>ASTM D2726 Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures</p>
	<ol style="list-style-type: none"> 1. Bulk specific gravity (Vacuum Sealing Method) 	<p>AASHTO T 331 Standard Method of Test for Bulk Specific Gravity (Gmb) and Density of Compacted Hot Mix Asphalt (HMA) Using Automatic Vacuum Sealing Method</p> <p>ASTM D6752 Standard Test Method</p>

		for Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method
	1. Maximum specific gravity	AASHTO T 209 Standard Method of Test for Theoretical Maximum Specific Gravity (Gmm) and Density of Asphalt Mixtures ASTM D2041 Standard Test Method for Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures
	1. Specimen height (nearest 0.01 in.)	TEX 206-F Compacting Specimens Using the Texas Gyrotory Compactor (TGC)
	1. Stabilometer value uncorrected	TEX 208-F Test for Stabilometer Value of Bituminous Mixtures ASTM D1560 Standard Test Methods for Resistance to Deformation and Cohesion of Asphalt Mixtures by Means of Hveem Apparatus

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Asphalt Mixture HVEEM Design – Gyrotory Shear Compaction (HTX) (cont)	1. Percent air voids	AASHTO T 269 Standard Method of Test for Percent Air Voids in Compacted Dense and Open Asphalt Mixtures ASTM D3203 Standard Test Method for Percent Air Voids in Compacted Asphalt Mixtures
Asphalt Mixture HVEEM Design – 4-in. Superpave Gyrotory Compaction (HCO)	1. Bulk specific gravity (Saturated Surface-Dry Method)	AASHTO T 166 Standard Method of Test for Bulk Specific Gravity (Gmb) of Compacted Hot Mix Asphalt (HMA) Using Saturated Surface-Dry Specimens ASTM D2726 Standard Test Method



		for Bulk Specific Gravity and Density of Non-Absorptive Compacted Asphalt Mixtures
	1. Bulk specific gravity (Vacuum Sealing Method)	AASHTO T 331 Standard Method of Test for Bulk Specific Gravity (Gmb) and Density of Compacted Hot Mix Asphalt (HMA) Using Automatic Vacuum Sealing Method ASTM D6752 Standard Test Method for Bulk Specific Gravity and Density of Compacted Asphalt Mixtures Using Automatic Vacuum Sealing Method
	1. Maximum specific gravity	AASHTO T 209 Standard Method of Test for Theoretical Maximum Specific Gravity (Gmm) and Density of Asphalt Mixtures ASTM D2041 Standard Test Method for Theoretical Maximum Specific Gravity and Density of Asphalt Mixtures
	1. Specimen height (nearest 0.1 mm.)	CP-L 5115 Standard Method for Preparing and Determining the Density of Bituminous Mixture
	1. Stabilometer value uncorrected 2. Stabilometer value corrected	AASHTO T 246 Standard Method of Test for Resistance to Deformation and Cohesion of Hot Mix Asphalt (HMA) by Means of Hveem Apparatus CP-L 5106 Resistance to Deformation of Bituminous Mixtures by Means of Hveem Apparatus

<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
------------------------------	--	--

<p>Asphalt Mixture HVEEM Design – 4-in. Superpave Gyrotory Compaction (HCO) (cont)</p>	<p>1. Percent air voids</p>	<p>AASHTO T 269 Standard Method of Test for Percent Air Voids in Compacted Dense and Open Asphalt Mixtures</p> <p>ASTM D3203 Standard Test Method for Percent Air Voids in Compacted Asphalt Mixtures</p>
<p>Asphalt Mixture Ignition Oven</p>	<p>1. Initial (as received) mass of pre-mixed HMA sample 2. Correction factor for asphalt binder content 3. Corrected asphalt binder content</p>	<p>AASHTO T 308 Standard Method of Test for Determining the Asphalt Binder Content of Asphalt Mixtures by the Ignition Method</p> <p>ASTM D6307 Standard Test Method for Asphalt Content of Asphalt Mixture by Ignition Method</p>
	<p>1. Mass removed by washing over the 75-μm (No. 200) sieve 2. Total material passing the 12.5-mm (1/2 in.) sieve 3. Total material passing the 9.5-mm (3/8 in.) sieve 4. Total material passing the 4.75-mm (No. 4) sieve 5. Total material passing the 2.36-mm (No. 8) sieve 6. Total material passing the 1.18-mm (No. 16) sieve 7. Total material passing the 600-μm (No. 30) sieve 8. Total material passing the 300-μm (No. 50) sieve 9. Total material passing the 150-μm (No. 100) sieve 10. Total material passing the 75-μm (No. 200) sieve</p>	<p>AASHTO T30 Standard Method of Test for Mechanical Analysis of Extracted Aggregate</p> <p>ASTM D5444 Standard Test Method for Mechanical Size Analysis of Extracted Aggregate</p>
<p>Asphalt Mixture – Hamburg Wheel-Track</p>	<p>1. Average number of gyrations to achieve specimen height of 62mm</p>	<p>AASHTO T 312 Standard Method of Test for Preparing and Determining the Density of Asphalt Mixture Specimens by Means of the Superpave Gyrotory Compactor</p> <p>ASTM D6925 Standard Test Method for Preparation and Determination of the Relative Density of Asphalt Mix Specimens by Means of the Superpave Gyrotory Compactor</p>
	<p>1. Average dry mass of the specimen prior to bulk specific gravity testing 2. Average bulk specific gravity of extruded specimen, Gmb</p>	<p>AASHTO T 166 Standard Method of Test for Bulk Specific Gravity (Gmb) of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens</p> <p>ASTM D2726 Standard Test Method for Bulk Specific Gravity and Density of Non-Absorptive</p>

		Compacted Bituminous Mixtures
<u>PT Scheme¹</u>	<u>Measurands or Properties/Characteristics Tested</u>	<u>Test Method Titles/Type of PT Item(s)</u>
Asphalt Mixture Hamburg Wheel-Track (cont)	1. Average percent air voids	AASHTO T 269 Standard Method of Test for Percent Air Voids in Compacted Dense and Open Asphalt Mixtures ASTM D3203 Standard Test Method for Percent Air Voids in Compacted Asphalt Mixtures
	1. Rut depth at 5000 passes 2. Rut depth at 10000 passes 3. Rut depth at 15000 passes 4. Rut depth at 20000 passes 5. Stripping inflection point (SIP) 6. Rut depth at SIP 7. Number of passes to failure	AASHTO T 324 Standard Method of Test for Hamburg Wheel-Track Testing of Compacted Asphalt Mixtures
Paint	1. Load to produce 200 r/min 2. Krebs unit viscosity at 25°C	ASTM D562 Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer
	1. Drying time for No-Pick-Up - 15 mil film	ASTM D711 Standard Test Method for No-Pick-Up Time of Traffic Paint
	1. Density at 25°C	ASTM D1475 Standard Test Method for Density of Liquid Coatings, Inks, and Related Products
	1. Percent volatile matter	ASTM D2369 Standard Test Method for Volatile Content of Coatings
	1. Percent pigment	ASTM D3723 Standard Test Method for Pigment Content of Water-Emulsion Paints by Low-Temperature Ashing

¹Details on these schemes can be found at <http://aashtoresource.org/psp/samples-types-and-tests>.



Accredited Proficiency Testing Provider

A2LA has accredited

AASHTO RE:SOURCE

Frederick, MD

This accreditation covers the specific proficiency testing schemes listed on the agreed upon Scope of Accreditation.

This provider is accredited in accordance with the recognized International Standard ISO/IEC 17043: 2023 *Conformity assessment - General requirements for the competence of proficiency testing providers*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system.



Presented this 31st day of January 2025.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4159.01
Valid to March 31, 2029

For the proficiency testing schemes to which this accreditation applies, please refer to the provider's Scope of Accreditation.