EFFECTIVE 07/01/09

Summary of Administrative Revisions to Standard Specifications
700 Series

Section	Description of Revision
ALL	• Formatting in accordance with CSI standards o All Paragraphs identified by a letter ▪ Sub-paragraphs identified by a number • Replace pronouns with appropriate noun references • Delete number word references and retain numeric number only • Modify grammar structure for clarity • Edit cross-references • Delete references to self (Uniform Standard Specifications) • Delete metric units • Delete references to design and procedural guidelines • Reformat Tables for consistency and clarity • Delete references to codes and standards that do not specifically relate to the section

SECTION 702

CONCRETE CURING MATERIALS AND ADMIXTURES

SCOPE

702.01.01 MATERIALS COVERED

A. This specification covers concrete curing materials, air-entraining admixtures, water retardants, pozzolans, and hydrated lime. ~~Attention is directed to~~Comply with Section 722, "Water" for mixing and curing. The ~~c~~Contractor shall submit a request to use any one of the following for approval by the Engineer as prescribed in Subsection 702.03.06~~07~~.

REQUIREMENTS

702.02.01 BLANK

PHYSICAL PROPERTIES AND TESTS

702.03.01 CURING MATERIALS

A. Curing materials shall conform to the requirements of the following tests, except the curing compound shall not react harmfully with the components of concrete or contain oils, waxes, or other materials which would prevent bonding of traffic marking paints. The film of curing compound shall be continuous, uniform, and free from pinholes, bubbles, or blisters.:

1. ~~a)~~ Burlap Cloth made from Jute or Kenaf: AASHTO M 182.
2. ~~b)~~ Waterproof Paper for Curing Concrete: AASHTO M 171.
3. ~~c)~~ Liquid Membrane-Forming Compounds for Curing Concrete: ASTM C 309.
4. ~~d)~~ Pigmented Curing Compound for Portland Cement Concrete pavement: ASTM C 309~~**~~, except the loss of water from the surface in the water retention test shall not exceed 1.50 ounces per square foot in 72 hours.
5. ~~e)~~ White Pigmented Curing Compound for Bridge Decks: ASTM C 309~~***~~. Type 2 Class B resin type and shall be poly-alpha-methyl-styrene with the loss of water from the surface in the water retention test shall not exceed 0.50 ounce per square foot in 24 hours or more nor 1.50 ounces per square foot in 72 hours.
6. ~~f)~~ Plastic Sheeting: ASTM C 171.
7. ~~g)~~ White Polyethylene Sheeting (film) for Curing Concrete: ASTM C 171.

~~*Except the curing compound shall not react harmfully with the components of concrete or contain oils, waxes, or other materials which would prevent bonding of traffic marking paints. The film of curing compound shall be continuous, uniform, and free from pinholes, bubbles, or blisters.~~
~~**Except the loss of water from the surface in the water retention test shall not exceed 1.50 oz/ft2 (0.45kg/m2) in seventy-two (72) hours.~~
~~*** Type 2 Class B resin type and shall be poly-alpha-methyl-styrene with the loss of water form the surface in the water retention test shall not exceed 0.50 oz/ft2 (0.15kg/m2) in twenty four (24) hours or more and 1.50 oz/ft2 (0.45 kg/m2) in seventy-two (72) hours.~~

702.03.02 AIR-ENTRAINING ADMIXTURES

A. Air-entraining admixtures shall ~~the requirements of~~ ASTM C~~-~~260.

702.03.03 ADMIXTURE~~S~~ OTHER THAN AIR-ENTRAINING

A. These admixtures shall ~~meet the requirements of~~comply with ASTM ~~Designation~~ C~~-~~494 and shall be clearly marked as to Type A, B, C, D, E, F, or G.

702.03.04 POZZOLANS (FLY ASH)

A. Fly Ash admixture shall conform to ~~the requirements of~~ Section 729, "Fly Ash.~~".~~

702.03.05 HYDRATED LIME

A. Hydrated lime shall conform to ~~the requirements of~~ ASTM C~~-~~207, Type N.

702.03.06 SUBMITTAL

A. Curing compounds and admixtures shall be tested and certified ~~per~~in accordance with the Table 1 frequency.

1. Prior to the use of these materials, the Contractor shall submit to the Engineer for approval a document certifying that the material meets these specifications and requirements.

2. A test certificate shall be included with the certifying document.

B. The material supplier for Portland ~~C~~cement ~~C~~concrete materials, ~~P~~plantmix ~~B~~bituminous materials, or any material production that requires the use of admixtures shall attach the certificate to the mix design submittal as indicated in Table 1. All subsequent certificates shall be on file and accessible to the Engineer for audit purposes.

C. The Statute of Limitations duration for the record storage shall be as required by the Nevada Revised Statutes.

~~Table 1 - SUBMITTAL REQUIREMENTS~~		
~~Item~~	~~Requirement~~	~~Frequency~~
~~All curing materials~~	~~Sample and certification~~	~~1 per project~~
~~All admixture material~~	~~Certificate with copy of test for lot used~~	~~1 per lot~~

Table 1 - Quality Control Testing		
Material	Certificate	Frequency
All curing materials	Sample and certification	1 per project
All admixture material	Certificate with copy of test for lot used	1 per lot

SECTION 703

BITUMINOUS MATERIALS

SCOPE

703.01.01 MATERIALS COVERED

A. This specification covers the quality of asphalt cement, liquid asphalt, emulsified asphalt, cationic emulsion, anionic emulsion and rubber-asphalt crack sealant.

REQUIREMENTS

703.02.01 CONTRACTOR'S RESPONSIBILITY

A. Bituminous material failing the test requirements of this section, ~~(~~including tolerances,~~)~~ ~~of the tests hereinafter prescribed~~ shall be subject to ~~the provisions of~~ Subsection 109.02, "Scope of Payment.~~,~~" ~~and attention is directed thereto.~~

703.02.02 MATERIAL SOURCE RESPONSIBILITY

A. Bituminous materials supplied under these specifications shall be provided from a source authorized by the ~~Entity~~ Engineer and/or IQAC. The process for authorization may be obtained from the ~~Entity~~ Contracting Agency's Public Works Construction Management Division.

703.02.03 SHIPPING NOTICE

A. Shipping notices shall be mailed upon making shipment and shall contain the following information:

1. ~~(a)~~ Consignee and destination,
2. ~~(b)~~ Agency contract number,
3. ~~(c)~~ Delivery point,
4. ~~(d)~~ Date shipped,
5. ~~(e)~~ Car initials or number of truck transport delivery ticket number,
6. ~~(f)~~ Type and grade of material,
7. ~~(g)~~ Quantity loaded,
8. ~~(h)~~ Loading temperature,
9. ~~(i)~~ Net quantity,
10. ~~(j)~~ Signature of shipper or authorized representative,

B. When shipments of materials arrive on the project after normal working hours, the Contractor shall notify the Engineer sufficiently in advance to make arrangements for an inspector to be present when the material is sampled. All sampling by the Vendor or Contractor shall be performed ~~by,~~ or observed by an NAQTC certified technician.

C. Three copies of the shipping notice shall be mailed to the Contracting Agency.

PHYSICAL PROPERTIES AND TESTS

703.03.01 REFINERY TEST REPORT

A. Refinery test reports shall be mailed to the Engineer as soon as tests have been completed, and the report shall contain the following data:

1. ~~(a)~~ Date of shipment,
2. ~~(b)~~ Car initials or number of truck transport delivery ticket number,
3. ~~(c)~~ Destination and consignee,
4. ~~(d)~~ Contracting Agency contract number (or purchase order number, if applicable),
5. ~~(e)~~ Type and grade of material,
6. ~~(f)~~ Certificate of grade (certify that material conforms to these specifications, and itemize results on tests performed and date of test),
7. ~~(g)~~ Signature of refinery's authorized representative,

B. The certificate of compliance shall be used as a basis of permitting immediate use of the material on the job and shall represent conditional acceptance only. The certificate of compliance shall include a copy of the tests for that lot shipment.

703.03.02 ASPHALT CEMENTS

A. Asphalt cement shall be prepared by the distillation of crude petroleum. This asphalt shall be homogeneous, free from water, and shall not foam when heated to ~~three hundred forty-seven (~~347~~)~~ degrees ~~F~~ahrenheit ~~(175°C)~~.

B. These specifications cover the following viscosity grades: AC-2.5, AC-5, AC-10, AC-20, AC-30, AC-40 and the Superpave Performance Grades (PG) for the Southern Nevada region as listed in Table 1, Table 2, Table 2A, and Table 2B. The ~~P~~performance ~~G~~grades are to be used only when required in the Contracting Agency's ~~Contract s~~Special ~~p~~Provisions for ~~C~~capital ~~I~~improvements or ~~Agency P~~policy and ~~P~~procedures.

TABLE 1 - LOCATION OF BITUMINOUS GRADE USE

Location	Viscosity Grades
Clark County Region below 6,000 feet elevation	PG 76-22CC, AC-30, or PG 64-22*
Mountain Roads at ~~/~~ and above 6,000 feet elevation	PG 64-34CC

* Sixty (60') right of way or less

C. The various grades set forth above shall conform to the requirements and the methods of testing shown in Table~~s~~ 2, Table 2A, and Table 2B.

1. Performance grade ~~(PG)~~ material must have been prepared from crude petroleum product.
2. The asphalt cements shall be homogenous, free from water and shall not foam when heated to ~~three hundred forty-seven (~~347~~)~~ degrees ~~F~~ahrenheit ~~(175°C)~~.
3. Blending of asphalt cements to produce a specified performance grade shall result in a uniform, homogenous blend with no separation.

4. Modified binders shall be blended at the source of supply and delivered as a completed mixture to the job site.

5. It shall not be transported via railroad car.

6. Only elastomeric Styrene Butadiene Styrene (SBS), Styrene-Butadiene (SB), Styrene-Butadiene Rubber (SBR), and Styrene Ethylbutylene Styrene (SEBS) rubber shall be added to the base binder asphalt cement, to produce a binder that complies with specification requirements.

703.03.03 LIQUID ASPHALTS

A. Liquid asphalts shall consist of materials conforming to the following classifications: ~~,~~

1. Rapid curing (RC) products: ~~ designated by the letters RC, shall consist of p~~P~~aving~~ asphalt with a penetration of approximately ~~eighty five (~~85~~)~~ to ~~one hundred (~~100~~)~~ fluxed or blended with a naphtha solvent.

2. Medium curing (MC) products: ~~,~~ ~~designated by the letters MC, shall consist of p~~P~~aving~~ asphalt fluxed or blended with a kerosene solvent.

3. Slow curing (SC) products: ~~,~~ ~~designated by the letter SC, shall consist of n~~N~~atural~~ crude oils or residual oils from crude asphaltic petroleum.

B. When tested in accordance with the standard methods of AASHTO and ASTM, the grades of liquid asphalt shall conform to the requirements specified in Table~~s~~ 2, Table 3, and Table 4.

703.03.04 EMULSIFIED ASPHALT

A. Emulsified asphalt for slurry seal shall conform to CQS-1h as specified in ~~-~~Table 6 when tested in accordance with AASHTO and ASTM.

703.03.05 SLURRY SEAL

A. The slurry seal and its components shall conform to the requirements of Table 7 when tested in accordance with AASHTO, ASTM, and ISSA procedures.

703.03.06 MICROSURFACING

A. The microsurfacing and its components shall conform to the requirements of Table 8 when tested in accordance with AASHTO, ASTM, and International Slurry Seal Association (ISSA) procedures.

703.03.07 POLYMER MODIFIED EMULSION MEMBRANE

A. This material shall consist of a polymer modified asphalt emulsion. Its role is to form a water impermeable seal at the existing pavement surface and to bond the new hot mix to the existing surface. The product shall be smooth and homogeneous and conform to the requirements in Table 10.

TABLE 2 - NEVADA TABLE 2 REQUIREMENTS FOR ASPHALT CEMENT GRADED BY VISCOSITY AT 140°F (Grading Based on Original Asphalt)

Test	AASHTO Test Method	VISCOSITY GRADE					
		AC-2.5	AC-5	AC-10	AC-20	AC-30	AC-40
Viscosity at 140°F poise	T202	200 - 300	400 - 600	800 - 1,200	1,600 - 2,400	2,400 - 3,600	3,200 - 4,800
Viscosity at 275°F c~~s~~St, minimum	T201	125	175	250	300	350	400
Penetration at 77°F 100 g/5 seconds, minimum	T49	220	140	80	60	50	40
Flash point (C.O.C., °F minimum)	T48	325	350	425	450	450	450
Solubility in Trichloroethylene (percent, minimum)	T44	99	99	99	99	99	99
Ductility at 39°F 1 cm/min. cm minimum	T51	50	25	15	5	--	--
Tests on Residue From RTF~~C~~O							
Loss on heating, percent maximum	T240	--	1	0.5	0.5	0.5	0.5
Viscosity at 140°F poise maximum	T202	1,000	2,000	4,000	8,000	12,000	16,000

TABLE 2A - PERFORMANCE GRADE FOR ORIGINAL MATERIALS

~~Characteristics~~Test	Test Method	PG 76-22CC Modified	PG 64-34CC Modified	PG 64-22
Original Materials				
Flash Point Degrees (°C) - minimum	NDOT T716	230		
Viscosity (Brookfield) Maximum 3.0 Pas (3000cP) Test Temp. °C	ASTM D4402	135		
Dynamic Shear G*/sin ä = minimum 1.0 kPa @ 10 rad/s Test Temp. °C	AASHTO T315	76	64	64
Ductility at 39.2°F, 5 cm/min. cm - minimum	NDOT T746	20	30	30
#10 Sieve Test, Pass/Fail	NDOT T730	Pass		
Solubility in Trichloroethylene, percent (%) - minimum	AASHTO T44	99		
Toughness in-lb - minimum	ASTM D 5801	150	75	N/A
Tenacity in-lb - minimum	ASTM D 5801	100	50	N/A
If T&T fails, Elastic Recovery, percent (%) - minimum	AASHTO T 301	60	60	N/A

TABLE 2B - PERFORMANCE GRADE FOR RTFO AND PAV CONDITIONING

Tests On Residue From RTFO AASHTO T-240				
~~Characteristics~~Test	Test Method	PG 76-22CC Modified	PG 64-34CC Modified	PG 64-22
Ductility at 39.2°F, 1 cm/min. cm - minimum	NDOT T746	5	10	10
Mass Loss, Percent (%) - maximum	NDOT T728	0.5		
Dynamic Shear, G*/sin ä = minimum 2.2 kPa @ 10 rad/s Test Temp. in °C	AASHTO T315	76	64	64
Test On Residue After PAV				
PAV, Test Temp. in °C	AASHTO R28	100	100	100
Dynamic Shear, G*/sin ä = Max 5,000 kPa @ 10 rad/s Test Temp. in °C	AASHTO T315	31	19	25
BBR - Creep Stiffness, S = 300 Mpa maximum, m-value = 0.30 minimum @ 60s Test Temp. in °C	AASHTO T313	-12	-24	-12
Direct Tension, Failure Strain = 1.0% minimum @ 1.0 mm/min. Test Temp. in °C	AASHTO T314	-12	-24	-12

TABLE 3 - UNIFORM PACIFIC COAST SPECIFICATIONS FOR RAPID CURING (RC) LIQUID ASPHALTS

~~Characteristics~~Test	AASHTO Test Method	ASTM Test Method	GRADES							
			RC-70		RC-250		RC-800		RC-3000	
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Kinematic Viscosity at 140°F c~~s~~St	--	D2170	70	140	250	500	800	1,600	3,000	6,000
Flash Point (Tag Open Cup ~~Tag~~), °F	T79	D1310	--	--	80	--	80	--	80	--
Distillation										
Distillate percent of total distillate to 680°F	--	--	10	--	--	--	--	--	--	--
to 437°F	T78	D402	50	--	30	--	15	--	--	--
to 500°F	--		70	--	60	--	45	--	25	--
to 600°F	--	--	85	--	80	--	75	--	70	--
Residue from distillation to 680°F, volume percent by difference	--	--	55	--	65	--	75	--	80	--
Test on Reside from Distillation										
Penetration, 77°F, 100g/5 seconds	T49	D5	80	120	80	120	80	120	80	120
Ductility, 77°F, cm*	T51	D113	100	--	100	--	100	--	100	--
Solubility in Trichloroethylene, %	T44	D2042	99.5	--	99.5	--	99.5	--	99.5	--
Water, %	T55	D95	--	0.2	--	0.2	--	0.2	--	0.2
GENERAL REQUIREMENT: The material shall not foam when heated to application temperature recommended by the Asphalt Institute.										
* If ductility is less than 100, material will be accepted if ductility at 60°F is 100 minimum at a pull rate of 5 cm/min										

TABLE 4 - UNIFORM PACIFIC COAST SPECIFICATIONS FOR MEDIUM CURING (MC) LIQUID ASPHALTS

~~Characteristics~~Test	AASHTO Test Method	ASTM Test Method	GRADES							
			MC-70		MC-250		MC-800		MC-3000	
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Kinematic Viscosity at 140°F c~~s~~St	T201	D2170	70	140	250	500	800	1,600	3,000	6,000
Flash Point (Tag Open Cup~~Tag~~), °F	T79	D1310	100	--	150	--	150	--	150	--
Distillation										
Distillate percent of total distillate to 680°F	--	--	--	--	--	--	--	--	--	--
to 437°F	--	--	--	20	--	10	--	--	--	--
to 500°F	T78	D402	20	60	15	55	--	35	--	15
to 600°F	--	--	65	90	60	87	45	80	15	75
Residue from distillation to 680°F, volume percent by difference	--	--	55	--	67	--	75	--	80	--
Test on Reside from Distillation										
Penetration, 77°F, 100g/5 seconds	T49	D5	120	250	120	250	120	250	120	250
Ductility, 77°F, cm*	T51	D113	100	--	100	--	100	--	100	--
Solubility in Trichloroethylene, %	T44	D2042	99.5	--	99.5	--	99.5	--	99.5	--
Water, %	T55	D95	--	0.2	--	0.2	--	0.2	--	0.2
GENERAL REQUIREMENT: The material shall not foam when heated to application temperature recommended by the Asphalt Institute.										
* If penetration of residue is more than 200 and ductility at 77°F is less than 100, material will be accepted if ductility at 60°F is 100+										

TABLE 5 - UNIFORM PACIFIC COAST SPECIFICATIONS FOR SLOW CURING (MC) LIQUID ASPHALTS

~~Characteristics~~Test	AASHTO Test Method	ASTM Test Method	GRADES							
			SC-70		SC-250		SC-800		SC-3000	
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Kinematic Viscosity at 140°F c~~s~~St	T201	D2170	70	140	250	500	800	1,600	3,000	6,000
Flash Point (Tag Open Cup~~Tag~~), °F*	T48	D1310	150	--	175	--	200	--	250	--
Distillation										
Total Distillate to 680°F, % by volume	T78	D402	10	30	4	20	2	12	--	5
Tests on Residue From Distillation										
Kinematic Viscosity of Distillation Residue at 140°F, st~~r~~okes	T201	D2170	4	70	8	85	20	140	40	350
~~Residue~~Ductility at 77°F, 5cm/min., cm~~s~~	T51	D113	100	--	100	--	100	--	100	--
Solubility in Trichloroethylene, %	T44	D2042	99.5	--	99.5	--	99.5	--	99.5	--
Water, %	T55	D95	--	0.5	--	0.5	--	0.5	--	0.5
* Flash point by Cleveland Open Cup may be used for products having a flash point greater than 175°F										

TABLE 6 - UNIFORM PACIFIC COAST SPECIFICATIONS FOR ANIONIC EMULSIFIED ASPHALTS

~~Grade~~Test	AASHTO Test Method	ASTM Test Method	Rapid Setting				Slow Setting			
			RS-1		RS-2		SS-1		SS-1h	
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Test on Emulsions										
Viscosity SSF @ 77°F, sec.	T72	D88	20	100	--	--	20	100	20	100
Viscosity SSF @ 122°F, sec.	T72	D88	--	--	75	400	--	--	--	--
Settlement, 5 days, % [1]	T59	D244	--	5	--	5	--	5	--	5
Storage Stability, 1 day, % [2]	T59	D244	--	1	--	1	--	1	--	1
Demulsibility, 35ml .02N, Calcium Chloride. % [3]	T59	D244	60	--	60	--	--	--	--	--
Cement Mixing Test, %	T59	D244	--	--	--	--	--	2.0	--	2.0
Sieve Test, %	D59	D244	--	0.10	--	0.10	--	0.10	--	0.10
Residue by distillation, %	T59	D244	55	--	63	--	57	--	57	--
Test on Residue from Distillation Test [4]										
Penetration @ 77°F, 100g, 5sec.	T49	D5	100	200	100	200	100	200	40	90
Ductility @ 77°F, 5m/min., cm	T51	D113	40	--	40	--	40	--	40	--
Solubility in Trichloroethylene, %	T44	D2042	97.5	--	97.5	--	97.5	--	97.5	--

[1] The test requirement for settlement may be waived when the emulsified asphalt is used in less than 5 days' time, or the purchaser may require that the settlement test be run from the time the sample is received until it is used, if the elapsed time is less than 5 days.
[2] The 24-hour 1-day storage stability test may be used instead of the 5-day settlement test.
[3] The demulsibility test shall be made within 30 days from the date of shipment.
[4] A harder base asphalt meeting current paving asphalt specifications may be specified with the provision that the test requirements on the Residue from Distillation be waived.

TABLE 7 - UNIFORM PACIFIC COAST SPECIFICATIONS FOR CATONIC EMULSIFIED ASPHALTS

~~Grade~~Test	Test Method		Rapid Setting				Medium Setting				Slow Setting				Quick Setting [6]			
			CRS-1		CRS-2		CMS-2S		CMS-2		CMS-2H		CSS-1		CSS-1h		CQS-1h	
	AASHTO	ASTM	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Test on Emulsions																		
Viscosity SSF @ 77°F, sec.	T72	D88	--	--	--	--	--	--	--	--	--	--	20	100	20	100	20	100
Viscosity SSF @ 122°F, sec.	T72	D88	20	100	100	400	50	450	50	450	50	450	--	--	--	--	--	--
Settlement, 5 days, % [1]	T59	D244	--	5	--	5	--	5	--	5	--	5	--	5	--	5	--	5
Storage Stability, 1 day [2]	T59	D244	--	1	--	1	--	1	--	1	--	1	--	1	--	1	--	1
Demulsibility, 35 ml 0.8% sodium dioctyl sulfosuccinate, % [3]	T59	D244	40	--	40	--	--	--	--	--	--	--	--	--	--	--	--	--

Coating Ability/Water Resistance:	T59	D244	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Coating, dry aggregate			--	--	--	--	Good	--	Good	--	Good	--	--	--	--	--	--	--
Coating, after spraying			--	--	--	--	Fair	--	Fair	--	Fair	--	--	--	--	--	--	--
Coating, wet aggregate			--	--	--	--	Fair	--	Fair	--	Fair	--	--	--	--	--	--	--
Coating, after spraying			--	--	--	--	Fair	--	Fair	--	Fair	--	--	--	--	--	--	--
Particle Charge Test	T59	D244	Positive		Positive		Positive		Positive		Positive		Positive [5]		Positive [5]		Positive	
Sieve Test, %	T59	D244	--	0.10	--	0.10	--	0.10	--	0.10	--	0.10	--	0.10	--	0.10	--	0.10
Cement Mixing Test, %	T59	D244	--	--	--	--	--	--	--	--	--	--	--	2.0	--	2.0	--	--
Distillation																		
Oil Distillate by volume of emulsion, %	T59	D244	--	3	--	3	--	20	--	12	--	12	--	--	--	--	--	--
Residue, %	T59	D244	60	--	65	--	60	--	65	--	65	--	57	--	57	--	60	--
Tests on Residue from Distillate Test [4]																		
Penetration, 77°F, 100g, 5sec.	T49	D5	100	250	100	250	100	250	100	250	40	90	100	250	40	90	45	60
Ductility, 77°F, 5cm/min., cm	T51	D113	40	--	40	--	40	--	40	--	40	--	40	--	40	--	40	--
Solubility in Trichloroethylene, %	T44	D2042	97.5	--	97.5	--	97.5	--	97.5	--	97.5	--	97.5	--	97.5	--	97.5	--

[1] The test requirement for settlement may be waived when the emulsified asphalt is used in less than 5 days' time, or the purchaser may require that the settlement test be run from the time the sample is received until it is used, if the elapsed time is less than 5 days.
[2] The 24-hour 1-day storage stability test may be used instead of the 5-day settlement test.
[3] The demulsibility test shall be made within 30 days from the date of shipment.
[4] A harder base asphalt meeting current paving asphalt specifications may be specified with the provision that the test requirements on the Residue from Distillation be waived.
[5] Must meet a PH requirement of 6.7 maximum (ASTM E70) if the Particle Charge Test result is inconclusive.
[6] Does not apply to polymer modified emulsion.

TABLE 8 SPECIFICATION FOR SLURRY SEAL MIX

TEST ON MIXTURE	TEST METHOD	REQUIREMENTS
Residual Asphalt, % of dry wt. of aggregate	--	7.5 - 13.5
Consistency, flow	ASTM D3910/ISSA T106	2 - 3 cm
Wet Cohesion, 30-minute set	ISSA T139	12 -13 kg/cm
Wet Cohesion, 60-minute set	ISSA T139	20 - 21 kg/cm
Set Time, 30 minutes	ASTM D3910	Negative
Excess Asphalt by LWT and Sand Adhesion	ASTM T109	50 g/ft² max.
Wet Stripping, % coating	ASTM T114	90 min.
Wet track Abrasion (6-day soak)	ASTM D3910/ISSA T100	75 g/ft² max.
Wet track Abrasion (1-hour soak)	ASTM D3910/ISSA T100	75 g/ft² max.
System Compatibility	ISSA T115	Pass
Mix time @ 77°F	ASTM D3910/ISSA T113	Controllable to 180 sec. minimum

TABLE 9 SPECIFICATION FOR MICRO-SURFACING MIX

TEST ON MIXTURE	TEST METHOD	REQUIREMENTS
Residual Asphalt, % of dry wt. of aggregate	--	5.5 - 9.5
Wet Cohesion, 30-minute set	ISSA T139	12 kg/cm
Wet Cohesion, 60-minute set	ISSA T139	20 kg/cm
Excess Asphalt by LWT and Sand Adhesion	ISSA T109	50 g/ft² max.
Wet Stripping, % coating	ISSA T114	90 min.
Wet track Abrasion (6-day soak)	ASTM D3910/ISSA T100	75 g/ft² max.
Wet track Abrasion (1-hour soak)	ASTM D3910/ISSA T100	50 g/ft² max.
Mix time @ 77°F	ASTM D3910/ISSA T113	Controllable to 120 sec minimum
Mix time @ 104°F	ASTM D3910/ISSA T113	Controllable to 120 sec minimum
Lateral Displacement	ISSA T147	5% max.
Classification Compatibility	ISSA T144	(AAA, BAA) 11 grade points minimum

Table 10 - SPECIFICATION FOR POLYMER MODIFIED EMULSION MEMBRANE

TEST ON EMULSION	Method	Min.	Max.
Viscosity @ 77°F, SSF	ASTM D88	20	100
Sieve Test, %	AASHTO T59	--	0.05
24-Hour Storage Stability, % [1]	AASHTO T59	--	1
Residue from Distillation @ 400°F, %	AASHTO T59	63	--
Oil portion from distillation ml of oil per 100 g emulsion [2]	AASHTO T59	63	--
TEST ON RESIDUE FROM DISTILLATION			
Solubility in TCE, % [3]	AASHTO T44	97.5	--
Elastic Recovery @ 50°F, % [4]	AASHTO T301	58	--
Penetration @ 77°F, 100 g, 5 sec, dmm	AASHTO T49	60	150

[1] After standing undisturbed for 24 hours, the surface shall show no white, milky colored substance, but shall be a smooth homogeneous color throughout.

[2] ASTM D244 with modifications to include a 400°F ± 10°F maximum temperature to be held for a period of 15 minutes. Alternatively, ASTM D244 (Sections 21-27) Residue by Evaporation may be utilized as a surrogate procedure. However, Residue by Distillation is preferred and shall be used as the reference procedure.

[3] ASTM D5546, "~~Test Method for Solubility of Polymer-Modified Asphalt Materials in 1,1,1-Trichloroethane~~Standard Test Method for Solubility of Asphalt Binders in Toluene by Centrifuge," may be substituted where polymers block the filter in Method D2042.

[4] ASTM D5976, "Standard Specification for Type I Polymer Modified Asphalt Cement for Use in Pavement Construction," Section 6.2 with exception that the elongation is 20 cm and the test temperature is 50°F.