



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N758 CM
Indianapolis, Indiana 46204

www.in.gov/indot

Eric Holcomb, Governor
Mike Smith, Commissioner

AGENDA

August 15, 2024, Standards Committee Meeting

MEMORANDUM

July 30, 2024

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Agenda for the August 15, 2024, Standards Committee Meeting

A Standards Committee meeting is scheduled for 09:00 a.m. on Thursday, August 15, and will be held virtually via *Teams* (Microsoft application). Please contact Scott Trammell (strammell@indot.in.gov) for instructions on how to join this event.

The following items are listed for consideration:

A. GENERAL BUSINESS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

1. *Approval of the Minutes from the [July 18](#) meeting*

B. CONCEPTUAL PROPOSAL

(No items on this agenda)

C. STANDARD SPECIFICATIONS, SPECIAL PROVISIONS, AND STANDARD DRAWINGS PROPOSAL

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

[Item No. 1](#) [Mr. Reilman](#) [pg. 3](#)

2024 Standard Specifications:

703.06

Placing and Fastening

707.04

Steel and Concrete Requirements

910.01

Reinforcing Bars, Dowel Bars and WWR

[Item No. 2](#) [Mr. White](#) [pg. 11](#)

2024 Standard Specifications:

702.28

Basis of Payment

[Item No. 3](#) [Mr. Reilman](#) [pg. 15](#)

2024 Standard Specifications:

902.01(b)

Asphalt Emulsions

cc: Committee Members
FHWA
ICI

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Specification currently do not allow welding of reinforcing bars. Fabrication of certain precast concrete elements would benefit from using reinforcing cages that are welded instead of tied.

PROPOSED SOLUTION: Incorporate proposed changes to allow ASTM A706 weldable grade rebar to be used in addition to A615 rebar. Also where allowed in the specifications, if weldable grade rebar is used, allow it to be welded.

APPLICABLE STANDARD SPECIFICATIONS: 703, 707, 910

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE:

APPLICABLE RECURRING SPECIAL PROVISIONS: create new 703 RSP

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc: Jim Reilman, Pete White

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:
Required for all contracts, except mowing, herbicide, sweeping, light bulb replacement, or tree removal/trimming.

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: (317) 522-9692

Date: 7/18/24

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Approved Materials List? Yes

Will this proposal improve:

Construction costs? Yes

Construction time? N/A

Customer satisfaction? N/A

Congestion/travel time? N/A

Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? N/A

Will this item improve safety:

For motorists? N/A

For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? N/A

Design process? N/A

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? N/A

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

REVISION TO THE 2024 STANDARD SPECIFICATIONS

SECTION 703 - REINFORCING BARS

703.06 Placing and Fastening

SECTION 707 – PRECAST CONCRETE AND PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS

707.04 Steel and Concrete Requirements

SECTION 910 METAL MATERIALS

910.01 Reinforcing Bars, Dowel Bars and WWR

[**Sponsor Note**/Mr. Reilman: Proposed changes shown highlighted gray, if approved, to consider for an RSP and incorporation into the 2026 Standard Specifications.

Shown changes shaded in orange are edits approved by the Standards Committee at the [July 18, 2024](#) meeting and are for incorporation into the 2026 Standard Specifications ONLY.]

The Standard Specifications are revised as follows:

SECTION 703, BEGIN LINE 52, INSERT AS FOLLOWS:

703.06 Placing and Fastening

(a) General Requirements

Reinforcing bars shall not be ordered for piers or bents to be founded on soil or rock until the foundation conditions have been investigated. The bottom elevations of such footings will then be determined. Written permission will then be given to order such reinforcing bars. Sufficient excavation and all necessary soundings shall be made as directed so that exact bottom elevations of footings may be determined.

All dimensions shown on the plans for spacing of reinforcing bars apply to centers of bars unless otherwise noted. All bars shall be accurately placed and, during placing of the concrete, held firmly in the position as shown on the plans. Distances from the forms shall be maintained by means of chairs, ties, hangers, or other approved support devices. All reinforcing bars shall be wired rigidly or fastened securely at sufficient intervals to hold the bars in place. *Welding of reinforcing bars shall not be performed except as noted in 703.06(c).* Epoxy coated reinforcing bars shall be tied with epoxy coated or plastic coated tie wire. ~~Chairs and supports holding upper layers of reinforcing bars shall support the transverse bars.~~ The upper layer and lower layer of reinforcing bars in RCBA's and bridge floors shall be tied or fastened at a minimum of every other intersection of the longitudinal and transverse bars to prevent an upward or a lateral movement of a bar from the planned position.

Layers of reinforcing bars shall be separated by ~~spacers~~ *support devices in accordance with 910.01(b)11 or epoxy coated reinforcing bars. Epoxy coated reinforcing bars used to separate and support layers of reinforcing bars shall be shop bent to the dimensions required to secure the layers of reinforcing bars in the positions shown on the plans. The size and spacing of support devices or epoxy coated reinforcing bars used as supports shall be such that the plan reinforcing bars are not displaced by the weight of the concrete, upper layers of reinforcing bars, or construction loads, but in no case shall the spacing exceed 4 ft in any direction.* Reinforcing bars shall be separated from horizontal surfaces by being suspended or supported on approved ~~chairs and spacers~~ *support devices* capable of supporting the designed loads. Supports and spacers shall be of such shape as to be easily encased in concrete. That portion which is in contact with the forms shall be non-corrosive and non-staining material. They shall be of an approved type. ~~Vertical~~

REVISION TO THE 2024 STANDARD SPECIFICATIONS

SECTION 703 - REINFORCING BARS

703.06 Placing and Fastening

SECTION 707 – PRECAST CONCRETE AND PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS

707.04 Steel and Concrete Requirements

SECTION 910 METAL MATERIALS

910.01 Reinforcing Bars, Dowel Bars and WWR

~~stirrups shall always pass around main tension members and shall be securely attached thereto.~~ The use of pebbles, pieces of broken stone or bricks, metal pipe, wooden blocks, and similar devices for holding bars in position will not be allowed.

SECTION 703, BEGIN LINE 81, DELETE AND INSERT AS FOLLOWS:

After being placed, reinforcing bars will be inspected and approved before the concrete is deposited. The positions of the reinforcing bars shall not be disturbed both during and after depositing the concrete. All concrete placed in violation of this requirement may be rejected and its removal will be required. Where reinforcing bars project from construction joints, all mortar clinging to the reinforcing bars from previous pours shall be removed before the next enveloping pour is made.

(b) Splicing and Lapping

1. Reinforcing Bars

All reinforcing bars shall be furnished in the full lengths shown on the plans unless splices are indicated. No other splicing will be allowed except with written permission. Unless otherwise shown on the plans, reinforcing bars shall be lapped 32 diameters to make a splice. Construction joints shall not be made within the limits of lapped bars. For lapped splices, reinforcing bars shall be placed in contact and rigidly clamped or wired in an approved manner. Insofar as possible, splices shall be staggered and well distributed or located at points of low tensile stress. Splices will not be allowed at points where the section does not provide a distance of at least 2 in. between the splice and the nearest adjacent bar or surface of the concrete.

When splicing is indicated or allowed, an appropriate splice system on the QPL of Reinforcing Bar Splicing Systems may be used in lieu of lapped bars. The splicing system shall be installed in accordance with the manufacturer's recommendations. If an offset splicing system is selected, it shall only be used on spiral, hoop, or ring-type reinforcement.

~~WWR, when required, shall be placed as shown on the plans or as otherwise directed. The sheets shall overlap sufficiently to maintain uniform strength and shall be securely fastened at lapped ends and edges. The laps shall be no less than one mesh in width.~~

2. Spiral Reinforcement

Spiral reinforcement, consisting of evenly spaced continuous spirals, shall be held firmly in place by attachment to vertical reinforcement. The spirals shall be held true to line by vertical spacers. Anchorage for spiral reinforcement shall be provided with 1 1/2 extra turns of the spiral rod or wire at each end of the spiral unit. Splices in spiral rods or wire shall be made with a lap of 1 1/2 turns.

REVISION TO THE 2024 STANDARD SPECIFICATIONS

SECTION 703 - REINFORCING BARS

703.06 Placing and Fastening

SECTION 707 – PRECAST CONCRETE AND PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS

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3. Threaded Tie Bar Assemblies

Threaded tie bar assemblies may be used in lieu of spliced reinforcing bars shown on the plans. Threaded tie bar assemblies shall achieve the minimum strength in accordance with 910.01(b)2. The Contractor shall coat any exposed part of threaded bar assemblies in accordance with 910.01(b)2.

(c) Welding Reinforcing Bars in Precast and Precast Prestressed Concrete Structural Members

In lieu of tying or using WWR in accordance with 737, reinforcing bars used in precast and precast prestressed concrete structural members may be welded in accordance with the following:

1. *Reinforcing bars that are welded shall be in accordance with 910.01(b)1.*
2. *All welding procedures and welders shall be qualified to AWS D1.4. All welds shall be QC inspected by an AWS Certified Welding Inspector or at a minimum approved by an AWS Certified Welding Inspector. Welds shall have a satisfactory appearance. Notching, or undercutting of the reinforcing bars, or bars with a loss of cross-section resulting from welding will be cause for rejection of the damaged bars and the bars shall be replaced as directed.*
3. *Welding shall only be done at intersections of reinforcing bars. Reinforcing bars shall not be spliced by welding.*
4. *Sheets of reinforcing bars created by welding the intersections of reinforcing bars together shall be made continuous by providing lap splices in accordance with AASHTO LRFD Bridge Design Specifications and 703.06.*
5. *Epoxy-coated reinforcing bars that are to be welded shall have the epoxy coating removed in the vicinity of the weld. Once the welded area has cooled below 90°F (32°C) and before visible oxidation appears, the weld and surrounding bare metal shall be cleaned and recoated in accordance with 910.01(b)9.*

SECTION 703, BEGIN LINE 157, DELETE AND INSERT AS FOLLOWS:

The cost of ~~metal chairs~~ *support devices or epoxy coated reinforcing bars used as supports*, spacers, clips, wire, or other mechanical means used for fastening or holding reinforcement in place, and laps shall be included in the cost of reinforcing bars. The cost of coating materials and repair of damaged or removed coating materials on reinforcing

REVISION TO THE 2024 STANDARD SPECIFICATIONS

SECTION 703 - REINFORCING BARS

703.06 Placing and Fastening

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bars and on metal chairs, spacers, clips, or other mechanical means used for fastening or holding reinforcement in place, and laps shall be included in the cost of epoxy coated reinforcing bars. If threaded tie bar assemblies are used in lieu of spliced reinforcing bars as shown on the plans, the cost of such assemblies shall be included in the cost of reinforcing bars.

If WWR is required, the cost of furnishing and placing shall be included in the cost of the concrete in which it is placed.

SECTION 707, BEGIN LINE 84, INSERT AS FOLLOWS:

707.04 Steel and Concrete Requirements

(a) Reinforcing Bars

A tight coat of concrete grout extending 1/2 in. maximum from the top of precast concrete and precast prestressed concrete structural members will be allowed to remain on reinforcing bars extending from precast concrete and precast prestressed concrete structural members. All loose and flaky material on these reinforcing bars shall be removed. Lap splices shall be in accordance with 703.06. *In lieu of tying or using WWR in accordance with 737, reinforcing bars used in precast or precast prestressed concrete structural members may be welded in accordance with 703.06(c).*

SECTION 707, BEGIN LINE 558, INSERT AS FOLLOWS:

Reinforcing bars, WWR, prestressing strands, elastomeric bearing pads, modifications to bearing pads, bearing beams required for box beams, bearing assemblies required for I-beams, bulb-T beams, U-beams, box beams, bearing plates, threaded reinforcing bars, threaded inserts in fascia beams, hex bolts, sealer on the outside face and bottom flange of fascia beams and on the tops of all beams, working drawings and design calculations, and necessary incidentals shall be included in the cost of the pay items of this section.

All costs associated with welding weldable reinforcing bars, including but not limited to welding consumables, qualifying procedures and welders to AWS D1.4, other AWS D1.4 documents, QC inspection and approval by an AWS certified welding inspector, and all other items incidental to this work shall be included in the cost of the pay items of this section.

The cost of tensioning rods and steel plates shall be included in the cost of the pay items of this section.

SECTION 910, BEGIN LINE 22, INSERT AS FOLLOWS:

(b) Specific Requirements

REVISION TO THE 2024 STANDARD SPECIFICATIONS

SECTION 703 - REINFORCING BARS

703.06 Placing and Fastening

SECTION 707 – PRECAST CONCRETE AND PRECAST PRESTRESSED CONCRETE STRUCTURAL MEMBERS

707.04 Steel and Concrete Requirements

SECTION 910 METAL MATERIALS

910.01 Reinforcing Bars, Dowel Bars and WWR

1. Billet Steel Bars

Billet steel bars shall be in accordance with ASTM A615 *or ASTM A706*.

When the specifications allow for welding of bars and the Contractor chooses to weld, only bars produced to meet the requirements of ASTM A706 and marked with a W or bars produced to meet the requirements of ASTM A706 and marked with both an S and W shall be welded. Bars marked only with an S shall not be welded.

SECTION 910, BEGIN LINE 93, INSERT AS FOLLOWS:

8. Steel Spiral Reinforcement

Steel spiral reinforcement shall be either:

- a. deformed billet steel, ASTM A615 *or ASTM A706*, grade 60, or
- b. cold drawn steel wire, ASTM A1064.

SECTION 910, BEGIN LINE 135, INSERT AS FOLLOWS:

10. Dowel Bars

Dowel bars shall be plain billet steel in accordance with ASTM A615, grade 40 or higher, *or ASTM A706 grade 60 or higher*, except that the bend test and elongation requirements will not apply. The dowel bar area and weight for the nominal bar diameter shall be as follows:

COMMENTS AND ACTION

703.06 Placing and Fastening
 707.04 Steel and Concrete Requirements
 910.01 Reinforcing Bars, Dowel Bars and WWR

DISCUSSION:

<p>Motion: Second: Ayes: Nays: FHWA Approval:</p>	<p>Action: <input type="checkbox"/> Passed as Submitted <input type="checkbox"/> Passed as Revised <input type="checkbox"/> Withdrawn</p>
<p>2024 Standard Specifications Sections: 703.06 pg. 650; 707.04 pg. 665; 910.01 pg. 1051. Recurring Special Provisions or Plan Details: NONE</p> <p>Standard Drawing affected: NONE</p> <p>Design Manual Chapter: NONE</p> <p>GIFE Section: NONE</p>	<p><input type="checkbox"/> 2026 Standard Specifications <input type="checkbox"/> Revise Pay Items List <input type="checkbox"/> Notification to Designers if change is <u>not</u> addressed by RSP</p> <p><input type="checkbox"/> Create RSP (No. __) Effective:</p> <p><input type="checkbox"/> Revise RSP (No. __) Effective:</p> <p><input type="checkbox"/> Standard Drawing Effective:</p> <p><input type="checkbox"/> Create RPD (No. __) Effective:</p> <p><input type="checkbox"/> GIFE Update <input type="checkbox"/> Frequency Manual Update <input type="checkbox"/> SiteManager Update</p>

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Section 702.28 of the *Standard Specifications* currently indicates that the cost of polychloroprene sheeting and high density bearing strips, which are used in semi-integral end bent construction, shall be included in the cost of concrete A, substructure. However, when existing end bents are converted to semi-integral the type of concrete that is most often used is class C, and class A might not be included in the contract. Roofing felt is also often used in semi-integral end bent conversions, but isn't currently included in the list of incidental items.

PROPOSED SOLUTION: Revise 702.28 to indicate that the cost of polychloroprene sheeting, high density bearing strips, and roofing felt shall be included in the cost of other items in that section.

APPLICABLE STANDARD SPECIFICATIONS: 702.28

APPLICABLE STANDARD DRAWING: N/A

APPLICABLE DESIGN MANUAL CHAPTER: 17 and 409 (no changes required)

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISION OR PLAN DETAILS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee including Jim Reilman, Mike Koch, and Stephanie Wagner.

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: All contracts that include 702 pay items.

IMPACT ANALYSIS (attach report):

Submitted By: Pete White

Title: Design Manager

Division: INDOT Bridge Engineering

E-mail: pewwhite@indot.in.gov

Date: July 17, 2024

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Qualified Products List (QPL)? No

Will this proposal improve:

Construction costs? No

Construction time? No

Customer satisfaction? No

Congestion/travel time? No

Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? No

For construction workers? No

Will this proposal improve quality for:

Construction procedures/processes? Yes

Asset preservation? No

Design process? No

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

Federal or State regulations? No

AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

REVISION TO THE 2024 STANDARD SPECIFICATIONS

SECTION 702 – STRUCTURAL CONCRETE

702.28 Basis of Payment

(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 702, BEGIN LINE 1384, INSERT AS FOLLOWS:

The cost of forms, PVC for bridge floor drains, falsework, falsework piling, centering, expansion joints, preformed expansion joint filler, waterproofing, curing, finishing, *roofing felt, polychloroprene sheeting, high density bearing strips*, and necessary incidentals shall be included in the cost of the pay items *within this section*. The cost of placing epoxy resin adhesive on existing concrete surfaces shall be included in the cost of new concrete which abuts the existing concrete. Payment for concrete used in footings in class X excavation will be made at the contract unit price only for the cubic yards placed within the neat lines of the footings as shown on the plans or as revised.

SECTION 702, BEGIN LINE 1410, DELETE AS FOLLOWS:

~~The cost of furnishing and installing polychloroprene sheeting shall be included in the cost of concrete, A, substructure.~~

~~The cost of high density plastic bearing strips shall be included in the cost of concrete, A, substructure.~~

COMMENTS AND ACTION

702.28 Basis of Payment

DISCUSSION:

Motion:	Action:
Second:	<input type="checkbox"/> Passed as Submitted
Ayes:	<input type="checkbox"/> Passed as Revised
Nays:	<input type="checkbox"/> Withdrawn
FHWA Approval:	
2024 Standard Specifications Sections: 702.28 pg. 649.	<input type="checkbox"/> 2026 Standard Specifications
Recurring Special Provisions or Plan Details: NONE	<input type="checkbox"/> Revise Pay Items List
Standard Drawing affected: NONE	<input type="checkbox"/> Notification to Designers if change is <u>not</u> addressed by RSP
Design Manual Chapter: 17 and 409 (no changes required)	<input type="checkbox"/> Create RSP (No. __) Effective:
GIFE Section: NONE	<input type="checkbox"/> Revise RSP (No. __) Effective:
	<input type="checkbox"/> Standard Drawing Effective:
	<input type="checkbox"/> Create RPD (No. __) Effective:
	<input type="checkbox"/> GIFE Update
	<input type="checkbox"/> Frequency Manual Update
	<input type="checkbox"/> SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Section 902 contains a requirement for force ratio for AE-90S. This test is not commonly used anymore and has become outdated with today's availability of material.

PROPOSED SOLUTION: Update the emulsion table to remove the force ratio requirement for AE-90S

APPLICABLE STANDARD SPECIFICATIONS: 902.01

APPLICABLE STANDARD DRAWINGS: N/A

APPLICABLE DESIGN MANUAL SECTION: N/A

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISIONS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad Hoc. Asphalt Institute, National Center for Pavement Preservation, poll of emulsion suppliers currently on QPL

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: Not needed, 2026 speck book

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Division: Materials and Tests

E-mail: jreilman@indot.in.gov

Date: 7/22/24

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No

Will approval of this item affect the Qualified Products List (QPL)? No

Will this proposal improve:

Construction costs? no

Construction time? no

Customer satisfaction? no

Congestion/travel time? no

Ride quality? no

Will this proposal reduce operational costs or maintenance effort? no

Will this item improve safety:

For motorists? no

For construction workers? no

Will this proposal improve quality for:

Construction procedures/processes? no

Asset preservation? no

Design process? no

Will this change provide the contractor more flexibility? no

Will this proposal provide clarification for the Contractor and field personnel? no

Can this item improve/reduce the number of potential change orders? no

Is this proposal needed for compliance with:

Federal or State regulations? no

AASHTO or other design code? no

Is this item editorial? no

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda: Most states have dropped this test (except for maybe two) to help with identifying polymer modification in PG binders. Not many labs run it, there is the Elastic Recovery requirement in the AE-90S spec to aid in determining the presence of polymer.

REVISION TO THE 2024 STANDARD SPECIFICATIONS

SECTION 902 - ASPHALT MATERIALS
 902.01(b) Asphalt Emulsions

The Standard Specifications are revised as follows:

SECTION 902, BEGIN LINE 69, DELETE AS FOLLOWS:

Characteristics ⁽¹⁾	Test Method	AE-90		AE-90S		AE-NT		AE-F		AE-150		AE-PL	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Test on Emulsion													
Viscosity, Saybolt Furol at 25°C (77°F), s or Viscosity, Rotational Paddle at 25°C (77°F), mPa*s	AASHTO T 59					15 30	100 200		100 200	50 100			115 230
Viscosity, Saybolt Furol at 50°C (122°F), s or Viscosity, Rotational Paddle at 50°C (122°F), mPa*s	AASHTO T 59	50 100		50 100						75 150	300 600		
Demulsibility w/35 mL, 0.02N CaCl ₂ , %	AASHTO T 59			30									
Demulsibility w/50 mL, 0.10N CaCl ₂ , %	AASHTO T 59	75											
Oil Distillate by Distillation, mL/100 g Emulsion ⁽²⁾	AASHTO T 59		4.0		3.0		4.0		4.0		7.0		3.0
Residue by Distillation, %	AASHTO T 59	65		65 ⁽⁴⁾		50		27	35	65		30	
Sieve Test, sample retained, %	AASHTO T 59		0.10		0.10		0.30		0.10		0.10		0.10
Penetrating Ability, mm	902.02(u)												6.0
Stone Coating Test, %	902.02(r)3a	90								90			
Settlement, % (5 days)	AASHTO T 59		5.0				5.0						
Storage Stability, %	AASHTO T 59				1.0								
Tests on Residue													
Penetration (0.1 mm) at 25°C (77°F), 100g, 5 s ⁽³⁾	AASHTO T 49	100	200	90	150		40		90				
Penetration (0.1 mm) at 25°C (77°F), 50g, 5 s ⁽³⁾	AASHTO T 49									100	300		
Ductility at 25°C (77°F), mm	AASHTO T 51	400											
Ash Content, %	AASHTO T 111		1.0		1.0		1.0		1.0		1.0		1.0
Float Test at 60°C (140°F), s ⁽³⁾	AASHTO T 50	1200		1200						1200			
Force Ratio	AASHTO T 300			0.30									
Elongation Recovery, at 4°C (39°F)	AASHTO T 301			58									
Notes: ⁽¹⁾ Broken samples or samples more than 14 days old will not be tested. ⁽²⁾ Oil distillate shall be in accordance with ASTM D396, table 1, grade No. 1. ⁽³⁾ The Engineer may waive the test. ⁽⁴⁾ Maximum temperature to be held for 15 minutes at 350 ±9°F (175 ±5°C).													

COMMENTS AND ACTION

902.01(b) Asphalt Emulsions

DISCUSSION:

Motion:	Action:
Second:	<input type="checkbox"/> Passed as Submitted
Ayes:	<input type="checkbox"/> Passed as Revised
Nays:	<input type="checkbox"/> Withdrawn
FHWA Approval:	
2024 Standard Specifications Sections: 902.01 pg. 987 - 988.	<input type="checkbox"/> 2026 Standard Specifications
Recurring Special Provisions or Plan Details: NONE	<input type="checkbox"/> Revise Pay Items List
Standard Drawing affected: NONE	<input type="checkbox"/> Notification to Designers if change is <u>not</u> addressed by RSP
Design Manual Chapter: NONE	<input type="checkbox"/> Create RSP (No. __) Effective:
GIFE Section: NONE	<input type="checkbox"/> Revise RSP (No. __) Effective:
	<input type="checkbox"/> Standard Drawing Effective:
	<input type="checkbox"/> Create RPD (No. __) Effective:
	<input type="checkbox"/> GIFE Update
	<input type="checkbox"/> Frequency Manual Update
	<input type="checkbox"/> SiteManager Update