

# AASHTO Preservation Management Emulsion Task Force (ETF) Meeting Notes

The Heritage Group Innovation Center and Research Lab  
6320 Intech Way (near 71st Street and I-465), Indianapolis, IN 46278

**May 30-31<sup>st</sup> 2024**

## Attendees:

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Thursday, May 30<sup>th</sup>

8:00 a.m. – 8:15 a.m.      **Welcome, Introductions/ Roll Call and Housekeeping**      **Senger**

8:15 a.m. – 8:30 a.m.      **ETF Review**  
a. Review of Meeting Minutes (December 2023)      **Senger**  
<https://www.pavementpreservation.org/wp-content/uploads/ETF/2023-12-12/2023-12-12-Minutes.pdf>  
b. Agenda Review

No comments on previous meeting minutes.

8:30 a.m. – 9:00 a.m.      **AASHTO Committee on Materials & Pavements Update**  
a. TS 2a – Emulsified Asphalts      **Pfeifer**

- Midyear meeting in late January.
- No ballot items.
- Annual COMP meeting August 4-8 in Madison WI.
- Awaiting 9-63 will have a provisional standard.

b. TS 5b – Bridge & Pavement Preservation      **Ilg**

- Need a release to use photographs in the new standard.
- NCHRP projects for UBWC and sand seals will soon be balloted.
- Will need to re-ballot the tack coat guide spec.

c. TS 2b/5c – Quality Assurance and Environmental      **Biehl**

2b

- Not a lot of work recently with emulsions.
- Lot of work with DSR harmonizing viscosity for binders.
- A lot of inconsistencies between AASHTO and ASTM standards for residue recovery. Working to harmonize these. 9-63 should help with this.
- EPA ban on trichloroethylene was discussed at the last meeting. ETF had submitted a synthesis to NCHRP on this but was not picked up. No word on comments about the proposed rule.
- EPA is currently evaluating comments and discussing a range of phase-out periods.

5c

- Eric did not attend the December meeting.
- CIR and CCPR guide specs are under ballot now. Needed to rewrite it into AASHTO standard format.

PPT from Darren Hazlett

- a. NCHRP 9-62 Rapid Tests and Specifications for Construction of Asphalt-Treated Cold Recycled Pavements

Completed 8/31/22

- b. NCHRP 14-43 Construction Guide Specifications for Cold Central Plant Recycling and Cold In-Place Recycling

Completed 8/31/22

TRB webinar was held last year. Slides and recording:

[https://www.nationalacademies.org/event/821\\_12-2023\\_trb-webinar-sustainable-and-low-carbon-solutions-for-asphalt-pavements](https://www.nationalacademies.org/event/821_12-2023_trb-webinar-sustainable-and-low-carbon-solutions-for-asphalt-pavements)

- c. NCHRP 14-44 Construction Guide Specifications for Slurry Seals, Scrub Seals, and Tack Coats

Completed 3/1/22

TRB webinar was held last year. Slides and recording:

<https://www.nationalacademies.org/event/04-19-2023/trb-webinar-guide-specifications-constructing-slurry-seals-scrub-seals-and-tack-coats>

- d. NCHRP 14-48 Construction Guide Specifications for Pavement Treatments - Sand Seals and Ultra-thin Bonded Surface Treatments

Completed 4/9/24

Delivered to AASHTO. ETF needs to review the standards.

- e. NCHRP 10-114 Developing Performance and Safety Specifications for Rejuvenating Seals (Presentation)

Target completion date 8/4/25.

Raquel was not able to travel to provide an update.

- f. NCHRP 10-124 Development of Field Test to Determine Actual Percent Embedment of Chip Seal Aggregate

Adriana provided an update later in the agenda.

Target completion 3/21/27

- g. NCHRP 10-134 Performance-Based Tests for Asphalt Emulsion Treatments as part of Agency Acceptance and Incentive Programs

Proposals accepted up to 5/14/24

- h. Submitted Research Needs Statements 2025
  - Pavement Markings - selected
  - Emulsion-based High-Friction Treatments - selected
  - Slurry and Micro surfacing Sampling from Paver– not selected
  - Pavement Preservation Equipment QA – not selected
- i. Synthesis 55-04 Current Practices and Guidelines for Full-Depth Reclamation (FDR). Completion date 3/25/24.

**9:30 a.m. – 10:00 a.m.      Stakeholder Updates      Shields**  
 a. FP<sup>2</sup> (Todd S) b. AEMA (Arlis K) c. ARRA (Chris H/Megan S)  
 d. ISSA (Rex E) e. FHWA (PPTFG) (Todd S) f. NCPP (Todd S)

FP2, FHWA PPTFG, NCPP (Todd) – slides

AEMA (Arlis) – EPD’s being developed. Arkansas developed a national certification course/program up and running.

ARRA (Mike) – EPDs being developed. Reviewing Road Resource content and updating. Working on FAA spec. CR committee looking at field sampling best practices. Board meeting next week, the main topic is strategic plan. Seeking a new technical director (Steve Cross has retired).

ISSA (Rex) – slides. Revising web-based training for micro and chip, developing new one for combination treatments. Revising the slurry inspection manual into an app. Chris Hollenback is the new technical director, as Bob Jermaine is retiring.

**10:30 a.m. – 11:10 a.m.      NCHRP 9-63 EAPG Update      Harder**

Greg made a presentation. Looking for an additional 12 projects.

**11:10 a.m. – 11:40 a.m.      NCHRP 10-124, Chip Seal Embedment Test      Vargas**

Adriana made a presentation. The project just officially started in March 2024.

**11:40 a.m. – 12:00 p.m.      IBEF Sustainability Efforts      Kadrmias**

Arlis made a presentation. Upcoming webinar on June 18 on this topic.

<https://events.teams.microsoft.com/event/399c5add-4257-40a6-a2ea-0813569c770d@be0be093-a2ad-444c-93d9-5626e83beefc>

**12:45 p.m. – 1:45 p.m.      SUBCOMMITTEE BREAKOUT SESSION 1      Eberly**

- # 4 Research
  - a. Research Needs Statements 2025
  - b. Research Ideas for 2026

Three research topic groups – Materials, Equipment, and Research Roadmaps. Are these still current and relevant?

“Materials” is good, keep it. Andrew Braham has led this and has asked to be replaced. Jeff Dunn with Heritage volunteered.

Thinking “equipment” may not be relevant, may be more broadly defined as “operations” or “applications”. Rex Eberly has been leading this.

“Research Roadmaps” are already being looked at, so we can maybe focus on another area. Can we look more at the sustainability area? Bio-based emulsions for example. Shelley Crowley has been leading and has asked to be replaced. Charity Cook is willing to take this over.

Submitted RNSs that are not accepted are OK to re-submit. Good to reach out to whichever committee it is run through to find out what could be added or improved to help get approval the next time around.

Darren had thrown out a synthesis of emulsion tests to find which ones were no longer relevant. This would need to be fleshed out more. Maybe need to wait until 9-63 is complete to see what will be needed. Could be broadened to an international scan.

Another idea was a synthesis of DOTs to find what their “pain points” are. Eric suggested that since synthesis statements take so long to go through, might be quicker and easier to just send some emails to get specific topics we could then refine into RNS or synthesis topics.

Do we need to solicit research into Portland Cement 1L’s use in preservation treatments? Does this affect performance in any way?

Many states and agencies have done research into chip seals done at various years. Might be good to have a synthesis done to tie all of that together.

Are there greenhouse gas benefits from doing preservation on low-volume roads? Some are saying there are not. Or can we quantify the carbon reductions from timely preservation?

Should we request another Implementation Research Project for CIR, UTBWC, and Sand Seals?

Synthesis Research to Develop Best Practices for Asphalt Distributors

Surface Characteristics (Distresses?) that lend themselves to Preservation Maintenance and if so, which treatments?

**1:45 p.m. – 2:15 p.m.      Preservation Study Phase III      Vargas**

Adriana made a presentation.

## **SUBCOMMITTEE BREAKOUT SESSION 2**

**2:30 p.m. – 4:00 p.m.      #5 Asphalt Emulsion Binders      Voth**  
a. NCHRP 10-114 Status Update

Raquel was not able to attend this meeting. Adriana reported that they have done a good portion of lab work but waiting on field section construction. After completion of the NCHRP 10-114 project, it looks promising that FHWA will fund a study to pilot the use of the developed standards on an FLH project(s) to help promote the adoption of provisional AASHTO standards. Development of Standard Definitions for Rejuvenators

For now, have rejuvenator specs included in the treatment (i.e. scrub seal). Future these should be broken into their categories. We plan to move forward with the framework for definitions of rejuvenators developed at the December 2023 ETF meeting.

a. Technical Support for Ad Hoc AASHTO Standard Update/Edit Requests  
ODOT is tweaking M316. IDOT is following AASHTO specs exactly.

The MSCR method was not intended for emulsion residue. Some updates will be required for AASHTO T 350 because some agencies reference it for emulsion testing. Updates may include the following: no RTFO aging necessary for emulsions and added language for the recovery of residue. Eric Biehl will champion this effort as it falls under Tech Section 2b in AASHTO COMP. Out to ballot week of June 10.

Considering the looming TCE ban by the EPA, the use of the AASHTO T 111 (ash test) should be promoted in Tech Sections 2a and 5b. The ETF is not aware of any agencies that have had issues with the Ash Test, and it's a straightforward, easy test. So, no significant roadblocks to its use.

b. EPDs Future Work?

ARRA and AEMA working on these. 8 different emulsions (4 cationic, and 4 anionic) are being developed covering 4 different classes of emulsions: non-polymer modified, polymer modified, rejuvenating, and emulsions with small amounts of light oils. ARRA and AEMA have applied for some grant money to help cover this, and they are Looking to develop an online calculator for EPDs.

#2 QA, Education & Certification Subcommittee (B/O)

**Biehl**

Nothing new to report.

**4:00 p.m. – 4:15 p.m. QA Guides – Current Status and Future Work**

**Biehl**

- QA guides Working Group:
  - QA Guides for CIR and CCPR are out for ballot, and close June 11.
  - QA guides for tack coat, slurry systems, and scrub seals need to be put into AASHTO format
  - New QA guides attached for Sand Seals and UTBWC to be reviewed. A question came up about the draft seems to only show cationic emulsions are used. Need to clarify. Also indicates up to 3/8" agg size, which would be a chip seal, not a sand seal. The material standard for sand seal does allow 3/8" agg size and may need to be reviewed.
  - New QA guides need to be reviewed and in AASHTO format before sending to TS 5c. Their TS ballot range is April through June. Would be good to get on the agenda for the mid-year meeting that happens in November-ish.
  - These guides would be included in the construction guides.

Draft documents sent to ETF for review, comments due June 30.

**4:15 p.m. – 4:30 p.m. Open Discussion – Close Out Day 1**

**Senger**

Discussion about meeting in person twice per year. The May/June meeting is tough, especially for contractors. Consider doing a virtual April meeting, then in person in late October/early November.

- ISEAT is first week of November
- Survey sent to group

## Day 2

Friday, May 31st

### SUBCOMMITTEE BREAKOUT SESSION 3

8:00 a.m. – 9:45 a.m.

#3 Messaging & Implementation Subcommittee (B/O)

Brewster

Stormy was unable to attend, but provided the following written update:

NCHRP Project Profiles:

- 1) The ETF had 3 sessions at World of Asphalt (Todd & Bobby covered the ETF in general, Todd and Travis covered chip seals, and Travis and Tim Harrawood did Microsurfacing)
- 2) We have an ETF update article coming out in the Summer Pavement Preservation Journal based on the ETF sessions.
- 3) Waiting for the next construction guide for M&I on the new treatment specifications (CCPR, CIR, scrub, sand, UBWC, etc.)

CCPR/CIR was sent to a few industry experts with comments below. I think we need to get a few more to weigh in. I will send it out in the coming week.

*What we found was as long as we used a climatically correct base i.e., a 64-22 and or a 58-28 we had good performance. I think the Pen Range and the IDT testing was a whole lot of smoke and mirrors set up back in the SEM days, once we used the correct low temp grade, we always passed IDT. Thus, we got rid of the IDT testing out west and called out for the PG grade of the emulsion base and once you got that grade with your emulsion base your pen is what it is. So you could report that as your pen target range.*

Mike H and Todd T will investigate this.

*The biggest problem I see is when people go to use the 58-28 base as their fog seal. The fog seal must meet a CSS-1h and or an SS-1h 50/50. If the Recycling agent meets this requirement, it may be used as a Fog Seal Emulsion. If softer i.e. not meeting a 1H it tends to lead to a lot of peel out of the CIR mat. Where the hard pen and some blotter sand we have seen no problems.*

This sounds like a specific supplier issue. We could add some commentary to help with specific issues like this.

*Most of if not all our mixes now require cement in them, so we need to pass the cement mix testing out west.*

Comments on best practices document

- *This doesn't need to go into the paper, but people need to be aware that asphalts that foam and meet the expansion ratio and half-life recommended by Wirtgen are becoming harder and harder to find and that QC is important to this process to ensure proper dispersion of asphalt binder. Came to mind when I saw 2.2 and in thinking about trying to find asphalts that meet VDOT requirements.*
- *Also, in 2.2.1 it states that emulsions should be in accordance with AASHTO materials specs, not sure if some of the CIREE would meet all the requirements as I recall having to waive cement mix tests and adjust pen ranges based on mix design penetrations needed for climate areas. It's been a minute since I designed a CIR mix and I*

*understand the intent and agree with it but may need something saying that spec ranges may be shifted per mix design submittal and approval.*

**Need a blurb in the best practice guide about cement mixing.**

- *3.1.3 explains shipping containers, may want to emphasize that containers should be new or cleaned to ensure no contamination of samples with oils, chemicals, or other substances.*
- *Should part of the mix design submittal require Recycling agent COA with a focus on Pen ranges for emulsion and foaming characteristics for foamed asphalt? I may have missed but it didn't jump out at me in the document.*
- *3.2.6 job mix formula, do they still need to report the QC information for the emulsions and asphalts used (specifically the PG grade or the Pen target of the emulsions)?*

Comments on the QA guide

- *Should there be a place in QC that requires COA from a supplier of recycling agents that compares to the agent used in mix design?*

#### **CCPR CIR Best Practices document**

- Great and very detailed document. Being 59 pages, we (Ergon/AA) would want to create “tip cards” for any field staff monitoring these projects, summarizing the major/key things that need to be checked/monitored in the field, specific to the actual process being used (i.e., CCPR tip card would differ than CIR tip card and emulsion-based CIR tip card might differ from foamed asphalt CIR tip card, etc.). Does Ergon already have these? We (AA) have these for use in our Performance Binders for customers.
- Kevin touched on this, but I'm not sure it was answered: under **2.2.2. Foamed Asphalt**; “Verify that the foamed asphalt meets the minimum expansion ratio and half-life requirements in accordance with AASHTO PP 94”, should there be language added, something to the effect of, “**with recycling agent added** (when/if being used)”? I would think this would be important. If this is already mentioned somewhere in the document, I missed it.

**Need to follow up with Stormy. Think the guide is already clear, and such a comment would only cause confusion.**

- **2.4 Active Filler**; Should there be language added, something to the effect of, “**The method of measurement for the proper addition rate (quantity, percentage and/or ratio) of active fillers should be noted in the contractor's project QC Plan**”? In fact, under **2.5. Corrective Aggregates (Coarse and Fine Aggregates)** state “*The aggregate addition rate is determined by volumetric distribution using weigh tickets from the haul trucks and the applied area.*”, there are no mechanisms/methods noted for determining/monitoring the addition rate, percentage, ratios, etc. for fillers such as Portland Cement, Lime, fly ash, etc., under **2.4.1 Portland Cement**, **2.4.2. Lime**, or **2.4.3. Other**; even though **2.4** emphasizes the importance of the proper addition of these active fillers. Thoughts?

**This is a good comment and should be added.**

- **3.2.2.** Some of this section's language seems antiquated and contrary to Scott's comments below; “*Tests on recovered binder generally include penetration at 77 °F (25 °C) (AASHTO T 49) and/or the absolute viscosity at 140 °F (60 °C) (AASHTO T 202). The use of dynamic shear rheometer testing (AASHTO T 315) to determine shear*



*modulus ( $G^*$ ) and phase angle ( $\delta$ ) for evaluation of existing binder properties is under study. There are currently no guidelines on what performance grade and subsequent criteria are appropriate for the RAP binder, and characteristics are generally only used for informational purposes, if at all.”. To steal part of Kevin’s earlier comment, “It’s been a minute” since I’ve been intimately involved with the CIR mix design submission & approval process, but this seems out-of-date relative to PG grading, as I would think most/all are testing & utilizing PG grades (with penetration data added). Thoughts?*

**When 9-63 is completed, these areas will need updated.**

ETF should look at promoting future implementation projects for the new guide specs.

**#1 Emulsion Treatments (B/O)**

**Senger**

a. CCPR and CIR Best Practices

Reviewed best practices document, which was posted last June. Need to look at adding more in the QA/QC section. The decision to leave alone for now – the QA guide is its stand-alone guide. The Best Practice guide will be the basis for developing training and is free and open to everyone.

b. Construction Guide Specs – sand seals, UTBWC

Eric Discussed yesterday – see notes above.

c. Support RNS – High Friction, PMM, Sampling

Encourage all ETF members to be on panels. This will help us be involved in steering the studies to get the results we want.

d. AASHTO COMP Support – Ballot Results?

Ballot results coming soon. ETF will review comments.

AASHTO template/format is available. Need to ensure what we develop is in this format so they are much easier to submit for balloting.

To publish pictures, NCHRP requires a release. Need to ensure we have that when submitting.

**Rex will identify 2 pictures in the Slurry/Scrub construction guide and get the release signed.**

Future ideas for this committee?

- Non-tracking tack

**10:00 a.m. – 10:20 a.m. ETF Website – Updates and Improvements**

**Shields**

On the home page, put direct pictures and links to best practices guides.

Take down specs that have been approved, reference the AASHTO store

Add in the new QA and guide specs.

Review members/friends. Ohio misspelled.

Set up a SharePoint site for ETF members and friends.

Take down the “members only” tab.

**10:20 a.m. – 11:45 a.m. Subcommittee Chair Reports (Current Work – Future Goals/Plans)**

Covered above. Looking for new volunteers for subcommittees.

**11:45 a.m. – 12:00 p.m. Future Direction – What’s Next for ETF**

**Senger**

- Surface Characteristics
- Performance Tests for Field Performance
- Sustainability

Ideas/Innovation for future meetings:

- Might be good to bring in outside academia to present on projects they are working on.
- Come up with equipment guidance documents. This could be referred to in the construction/best practice guides to all the same information isn’t re-created.
- How can surface characteristics be tied to sustainability?

Follow-up items:

**Follow up with AASHTO on 9-64 Tack Coat**

M85 and M240 may need to be looked at to include Portland cement type 1L.