

Pavement & Materials Partnering Committee
Work Product Scoping Document
New
Update & Merge CIR FA & EA Specifications
May 11, 2020

Task Group

Asphalt Recycling STG

Title

Update & Merge Cold In-Place Recycling
Foam & Emulsion Specifications

Problem Process

- Annual
- Expedited
- Emerging Initiative

Statement of Effort/Improvement *(What is the issue?)*

Caltrans currently has two different specifications for bituminous Cold In-Place Recycling, one for foamed asphalt (CIR-FA) and one for emulsified asphalt (CIR-EA). The end product from both Foam and Emulsion binders have similar long-term performance characteristics.

Two NSSPs were initially created to run pilot projects and understand the characteristics of each binder type with the intention of merging the two specifications and streamlining the selection process for engineers at a later date. Having two specifications for bituminous cold in-place recycling causes confusion in the industry and hesitancy to use either product.

Caltrans HQ surveyed district materials engineers and maintenance engineering teams in August 2019 on CIR, CCPR, and FDR recycling methods. The results showed that engineering teams in every district need more training and information.

Materials engineers have also expressed concern during the design phase of a project regarding the binder selection process. Industry also prefers flexibility in selecting either foam or emulsions binders based on specific project engineering, base characteristics, and site conditions. This flexibility allows Caltrans to benefit from industry expertise.

Two specifications have also created significant redundancy and efficiency issues when specifications are updated. It is imperative that we streamline the selection process by having one specification that includes both bituminous binder types.

Purpose – The purpose of the PMPC work product group is to update, remove redundancy, maintain quality standards, and merge the CIR-FA and CIR-EA specifications so the designer can choose a CIR strategy and the contractor has a choice between foamed asphalt and emulsified asphalt while still meeting standardized strength requirements, thereby leading to more competitive bids. Eliminate LPs associated with CIR and create new Provisional California Test Methods. Establish a standard MPQP calibration procedure for CIR equipment to be added to the MPQP manual.

[Type here]

Background – Caltrans specifications for CIR-FA & CIR-EA need to be updated and streamlined. Industry and Caltrans agree that merging both CIR specifications and creating one bituminous CIR specification is the most appropriate solution.

Approach *(What approach will the Task Group use to attempt to ensure that the effort/improvement 1) will be Street-Ready, 2) will be tracked and managed to ensure expected performance and 3) will be implemented consistently statewide? This includes defining stakeholders to be included in the effort/improvement to attempt to ensure consistent implementation statewide as appropriate. What training/guidance will be required? If “Pilot Projects” are to be used explain how in the approach.)*

A working group will be assembled by the Asphalt Recycling STG and they will update the references and other portions of the specifications as needed based on current technical knowledge. After the updates to each of the specifications, the WG will combine both specifications to formulate one single bituminous CIR nSSP. Both nSSPs have been successfully utilized on previous projects, combining them streamlines the material selection/treatment process. Industry and Caltrans have partnered to implement a statewide training program in 2020 to the maintenance and pavement engineers in each district. Removing materials decision-making from the designer and streamlining specifications is critical for making these recycling techniques more usable for the owner. Creation of Provisional California Test Methods improves version control, project usage and overall institutional learning. With merging of the nSSPs, a standard MPQP process will be necessary and will be drafted to ensure that all variations of CIR equipment are calibrated to the same standards.

1. Street Ready Assurance

Both CIR specifications have successfully been used as nSSPs on previous projects. The CIR-EA nSSP has been in use successfully since 2007 on over 85 projects. The CIR-FA nSSP has been available since 2008, and the first Caltrans project was completed successfully in 2008 with a total of 8 CIR-FA projects completed on Caltrans ROW. Additional CIR-FA and CIR-EA projects are coming out to bid this year. Local agencies in California have been using foamed asphalt successfully as a binding mechanism since 2011, with over 90 projects completed. Merging the two nSSPs streamlines the selection process for maintenance and materials engineering teams and ultimately makes the specification more user friendly.

2. Performance Tracking/Management

The Asphalt Recycling STG will monitor feedback from the districts when the specification is approved for use as nSSP on a project.

3. Consistently Implemented

The working group will perform outreach to District Materials Engineers, District Maintenance Engineers, and Designers with the goal to provide them with current information.

Team Members (Indicate CT Chair and Industry Lead)

CT/Industry	Division/Firm Name	Member Name
CT – Chair (Working Group)	Office of Asphalt Pavements	Allen King (CT Chair)
Industry Lead (Working Group)	Graniterock Company	Anthony Silva (IN Lead)
Caltrans	Office of Asphalt Pavements	Saeed Pourtahmasb
Caltrans	METS	Guadalupe Magana
Caltrans	Construction	Ragu Thangavelautham
Industry	MCK Services	John Moffat
Industry	Pavement Recycling Systems	Michael Concannon

Team should not include any more than 4 Caltrans staff and 4 members from Industry. See PMPC Standard Operating Procedures for more information.

Objectives/Deliverables/Due Dates *(What is important to be done, what is the expected outcome, and when is each deliverable due and to who?)*

Description:

1. Merge CIR-FA and CIR-EA nSSPs and update references.
2. Draft MPQP Procedure for CIR Equipment.
3. Update LP-8 for conformance to CTM standards.
4. Send merged nSSPs, CTM, and MPQP to districts for review and comment.
5. Review final comments by districts and adjust nSSPs, CTM, and MPQP section if necessary.
6. Final nSSP, CTM, and MPQP section completed.
7. The Working Group will provide training for District staff, but it is not in the milestones.
8. Include an executive briefing to the ATG and possibly the EC.

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Details:

Milestones	Name - Responsible Party	Due Date (Start/Complete)
1. Update Specifications & Merge	Allen King/Anthony Silva	May 30, 2020 to August 30, 2020
2. Draft MPQP section specific to CIR Equipment	Mike Concannon/Ragu Thangavelautham	May 30, 2020 to August 30, 2020
3. Update LP-8 procedures to Provisional CTM	Guadalupe Magana/Anthony Silva	May 30, 2020 to August 30, 2020
4. Circulate nSSPs, CTM, and MPQP section for review	Saeed Pourtahmasb/Anthony Silva	September 1, 2020 to October 1, 2020
5. Respond to comments and incorporate into nSSPs/CTM/MPQP procedure	Saeed Pourtahmasb/Mike Concannon	October 1, 2020 to October 31, 2020
6. Review and approve final nSSP/CTM/MPQP procedure.	Allen King/Working Group	November 1, 2020 to November 15, 2020
7. Send nSSP/MPQP Procedure/CTM to ATG for approval.	Allen King/Anthony Silva	November 15, 2020 to December 15, 2020

*Some milestones listed above may not be necessary

Resources To Develop and Implement *(Staff hours and expenses.)*

	Caltrans Hours	Industry Hours
Specification Writing/Review	OAP: 350 Hours OCS: 175 Hours METS: 175 Hours	350 Hours

Benefits *(For example, increased life cycle, reduced costs, reduced risk factors, compliance with Caltrans goals etc. Quantify benefits and define success and performance measures.)*

The benefits:

- Streamlining the CIR nSSPs to make CIR selection easier for the engineer.
- Increasing bidding opportunities for the industry as some contractors prefer one binder over another.
- Costs will become more competitive for Caltrans as competition opens.
- Standardize equipment calibration of CIR equipment to ensure consistency across Caltrans districts
- Update LP to CTM for consistency within Caltrans
- Standardize and maintain quality standards across both specifications, ensuring comparable cost and comparable quality between the two products.

Estimated Impact to Caltrans and Contractor - *(What are the impacts to policy, specifications, construction practices, and stakeholders? Include an estimate to overall increase/decrease in project cost, District/HQ resources at project level, and Contractor/supplier impact. Estimate increased/reduced risk factors for Caltrans and Contractor.)*

Merging the CIR specifications will put the binder selection, either FA or EA on the contractor. This will make all Caltrans CIR projects more competitive, lowering unit costs.

- District/HQ resources would remain the same or would be streamlined.
- No additional risks for Caltrans were identified.
- No additional risks for Contractors were identified.

Impediments to Completion of Deliverables – *(Identify impediments and potential mitigation measures to address impediments.)*

No foreseen impediments to completion.

Recommendation and Approval

This scoping document for “Update & Merge Cold In-Place Recycling FA & EA Specifications” was prepared by the Asphalt Recycling Subtask Group to address a priority issue with statewide significance and is within the Pavement & Materials Partnering Committee mission as described in the Pavement & Materials Partnering Committee Charter. The Subtask Group members have determined the scope, resources required and timeline for delivery of this project so that the deliverables are achievable. A signature here indicates that each Task Group and PMPC Executive Committee is committed to providing the resources to support this effort within the prescribed timeframes. Furthermore, it is everyone’s responsibility to ensure that the final effort/improvement will be:

- 1) Street-Ready,
- 2) Monitored and reported for performance,
- 3) Successfully implemented statewide as appropriate.

Scoping Document Recommendation and Industry Concurrence by (name and date):

Caltrans Name (Recommendation)	Date	Industry Name (Concurrence)	Date
 Tom Pyle, Caltrans Task Group Chair	6/1/20	 Pat Imhoff, Industry Task Group Lead	5/29/20
 Ken Solak, Caltrans Task Group Member	5/29/20	 Phil Reader, Industry Task Group Co-Member	5/29/20
 Tim Greutert, Caltrans Task Group Member	5/29/20		

Scoping Document Approval and Industry Concurrence by (name and date):

Caltrans Name (Approval)	Date	Industry Name (Concurrence)	Date
 Sergio Aceves, Caltrans PMPC Executive Committee – Chair Pavement Program	6/2/20	 Brandon Milar, Industry PMPC Executive Committee	6/3/20
 Ramon Hopkins, Caltrans PMPC Executive Committee Headquarters Construction	6/2/20	 Charley Rea, Industry PMPC Executive Committee	6/3/20
 Dolores Valls, Caltrans PMPC Executive Committee Structures Policy and Innovation	6/2/20		
 Roberto Lacalle, Caltrans PMPC Executive Committee Materials Engineering and Testing Services	6/3/20		

Approval Date: 6/3/20