Live Webinar Series

THE ROAD TO 100% TIRE CIRCULARITY:
ELTS GOING FULL CIRCLE

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Webinar Recap

# How Rubber-Modified Asphalt Delivers Cost-Savings and Longer Lasting Sustainable Roads and Pavements

November 20, 2025

**Host:**

John Sheerin, Senior Director End of Life Tire Programs, U.S. Tire Manufacturers Association

**Panelists:**

- **Dr. Bill Buttlar,** Founding Director, Missouri Center for Transportation Innovation, University of Missouri
- **Dr. Redmond Clark Sr.**, CEO, CBL Industries and Founder of Asphalt Plus
- **Dr. Carolina Rodezno,** Associate Research Professor, National Center for Asphalt Technology
- **Heather Dylla**, Vice President of Sustainability and Innovation, Construction Partners Inc.

## Key Takeaways

Rubber-modified asphalt (RMA) is a proven, cost-effective solution that strengthens pavement performance and critical end-markets for recycled tire materials at a time when end-of-life tire generation continues to outpace recycling. RMA adoption is accelerating due to distinct advancements in policy and performance, from a shift toward performance-based specifications to innovation in dry process methods. With twenty-one states now offering publicly available specifications for the material, RMA can be adopted seamlessly for its measurable advantages: longer pavement life, lower maintenance needs, improved safety through better friction, and notable environmental gains tied directly to tire circularity.

### Key Benefits

- **Cost-Effective Performance:** Dry process RMA costs less than polymer-modified asphalt while delivering comparable or superior performance. For heavy traffic pavements, RMA reduces costs when substituted for polymers. For standard asphalt mixes, RMA extends pavement life at lower cost than polymer alternatives. These cost advantages make RMA economically competitive in low-bid environments.

- **Extended Service Life:** Field data demonstrates that RMA extends pavement life by 30% to 100% compared to unmodified asphalt. In head-to-head comparisons with polymer-modified asphalt, RMA shows equal or better performance. Test sections at the National Center for Asphalt Technology and University of Missouri confirm these results, with some sections now in their second performance cycle demonstrating continued superior performance.

- **Superior Performance Characteristics:** Laboratory testing proves RMA's exceptional performance. In high-temperature wheel tracking tests, RMA shows minimal rutting. At intermediate and low temperatures, RMA excels in cracking resistance. Field measurements confirm enhanced friction coefficients that improve vehicle safety, lower noise levels, and

smoother surfaces that maintain quality longer. Advanced imaging reveals that rubber particles help keep cracks tighter and prevent deep propagation into the pavement structure.

- **Contractor-Friendly Implementation:** Dry process RMA integrates seamlessly into existing asphalt plant operations with minimal equipment modifications. The material feeds through standard loss-in-weight feeders or silos. Hundreds of plants across hundreds of projects have successfully implemented the technology without operational issues. All quality pay factors are consistently met, making adoption a low-risk proposition for producers.

- **Supply Chain Stability:** Ground tire rubber offers supply diversification beyond traditional polymers. The abundant availability of end-of-life tires creates a reliable, domestically sourced supply chain with greater price stability and predictability compared to manufactured polymer products. This strategic diversification reduces vulnerability to supply disruptions and price volatility.

## Current State of Adoption

RMA adoption continues to build momentum across the United States:

- **Specifications:** Twenty-one states have public RMA specifications. Of the 21states with RMA specifications, 17 have published wet process specifications, while four (Georgia, Missouri, Virginia, and Pennsylvania) have published both wet and dry process RMA specifications. The Illinois Tollway also specifies both wet and dry process RMA specifications.

- **Pilot Projects**: Multiple states have been engaged in studies and/or demonstration projects including Alabama, Georgia, and Michigan. More information can be found on the Tire Recycling Foundation's End-of-Life Tire Knowledge Hub.

- **Research:** The 2021 USTMA Rubber Modified Asphalt State of Knowledge Report analyzed over 350 journal papers and technical reports, providing comprehensive documentation of RMA performance benefits. Ongoing research at the National Center for Asphalt Technology, University of Missouri, Michigan Technological University, and other institutions continue to generate robust performance data.

## Calls to Action: What's Next?

### Policy Makers

Create supportive policy frameworks that accelerate RMA adoption and market growth:

- Develop legislation that supports demonstration projects and removes ineffective regulatory barriers that hinder RMA implementation.
- Allocate dedicated funding for pilot programs and comprehensive performance monitoring to build a robust evidence base.
- Champion performance-based specifications that enable innovations like RMA to compete fairly in public procurement.
- Position tire recycling as an economic development opportunity that creates jobs and supports domestic manufacturing.

### DOTs and Municipal Leaders

Take concrete steps to enable RMA adoption in your jurisdiction:

- Start with a demonstration project if you have not tried RMA, experience the mix design, production, construction, and field performance firsthand.
- Formalize specifications if you have completed successful demonstrations and adapt proven specifications from other states to match your requirements.
- Allow RMA to compete on performance and cost rather than mandating specific materials or volume mixes, enabling the market to deliver the best value.
- Implement side-by-side comparisons with control sections using conventional design to accurately assess RMA's impact.

**Civil Engineers**

Integrate RMA into pavement design and specification development:

- Evaluate RMA using balanced mix design testing that measures both rutting and cracking performance.
- Reference the USTMA State of Knowledge report and published state specifications for proven design approaches.
- Specify RMA for projects requiring enhanced durability, improved friction characteristics, or extended service life.
- Partner with contractors on mix design optimization and quality control procedures for successful implementation.

**Contractors and Asphalt Producers**

Position your operations to capitalize on RMA opportunities:

- Advocate for state specifications that enable cost-effective material choices while meeting rigorous performance standards.
- Invest in loss-in-weight feeder systems when clear ROI opportunities exist, particularly for high-volume projects.
- Leverage balanced mix design to demonstrate RMA's competitive advantages in both rutting and cracking resistance.
- Document and share cost savings and performance benefits from completed projects to strengthen the business case.

- Work with an approved third-party program operator to verify the environmental data for your RMA mixes, ensuring you can bid competitively in emerging low-carbon procurement programs and meet growing Buy Clean and EPD requirements.

**Recyclers**

Build market capacity for ground tire rubber in asphalt applications:

- Maintain consistent material quality and precise particle size specifications required for RMA applications.
- Partner with asphalt producers to develop material specifications and quality control procedures that ensure reliability.
- Communicate material availability and supply chain reliability to help potential customers plan with confidence.
- Engage with tire manufacturers to proactively address processing challenges that may emerge from new tire technologies.

**Sustainability Advocates**

Champion RMA in circular economy and sustainability initiatives:

- Promote RMA's dual value proposition: superior performance characteristics combined with environmental benefits.
- Emphasize that RMA advances tire circularity by creating a substantial market for end-of-life tires, keeping them out of landfills and in productive use.
- Highlight environmental advantages including emissions reduction through material repurposing and reduced need for virgin polymer production.
- Support policy and procurement initiatives that enable RMA to compete fairly based on its proven performance and sustainability benefits.

## Conclusion

Rubber-modified asphalt delivers proven performance across diverse applications and climates. The technology competes successfully with both unmodified and polymer-modified asphalt based on measurable performance metrics, enhanced durability, and cost-effectiveness. With over 25 years of field data and significant advances in dry process implementation, RMA has matured into a reliable, contractor-friendly solution.

Moving forward requires continued collaboration among state DOTs, contractors, tire manufacturers, recyclers, researchers, and policymakers. Key opportunities include expanding specifications to additional states, conducting demonstration projects in regions where RMA remains untested, implementing performance-based specifications that enable fair competition, and maintaining research efforts to document long-term field performance. Together, these actions can advance both pavement performance and tire circularity goals.

## Resources on Rubber-Modified Asphalt

Visit the ELT Knowledge Hub, presented by the Tire Recycling Foundation, for the webinar recording and more resources on this topic, including:

- USTMA Rubber Modified Asphalt State of Knowledge (2021)
- Summary of State Specifications for RMA
- Link to webinar recording: https://tirerecyclingfoundation.org/RMAMarketResource#RMANAT2025Recording

**Tire Recycling Foundation Conference:**

- Date: May 12-14, 2026
- Location: Denver, Colorado
- Registration: Now Open

## Additional Resources

- **ELTs Knowledge Hub:** https://tirerecyclingfoundation.org/marketsresources
- https://tirerecyclingfoundation.org/webinars
- https://www.ustires.org/webinars

## Questions or Feedback:


- Stephanie Mull, Executive Director, Tire Recycling Foundation smull@tirerecyclingfoundation.org
- John Sheerin, Director End of Life Tire Programs, USTMA Jsheerin@ustires.org
- Amelia Chucholowski, Manager, Sustainability and Recycling Policy, USTMA achucholowski@ustires.org