Webinar Recap

Building Better Infrastructure: How Tire-Derived Aggregate Transforms Waste into Civil Engineering Solutions

September 23, 2025

Host:

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

Panelists:

- Dr. Hany El Naggar, *Professor of GeoStructural Engineering, Dalhousie University*
- Tim Landers**,** *Midwest Region Sales Director, Liberty Tire Recycling*
- Monte Niemi**,** *CEO of First State Tire Recycling*
- Joaquin Wright**,** *Technical Director at GHD Environmental Limited*

Key Takeaways

Tire Derived Aggregate (TDA) is a cost-effective, proven, and sustainable material transforming end-of-life tires into high-performing solutions for civil infrastructure. While nearly 79% of scrap tires enter end-use markets, end-of-life tire generation continues to outpace recycling and consumption. This makes expanding TDA use a critical opportunity for improving tire circularity.

Key Benefits

- **Lightweight:** TDA weighs only one-third of what soil does, reducing stresses on buried pipelines, buried culverts, and infrastructure in general.
- **Superior Drainage:** TDA has very high permeability which is almost 10 times faster than soils, with 50% void space (compared to 25% for conventional aggregate like gravel), making it ideal for drainage and stormwater management systems.
- **Thermal Insulation:** TDA insulates 8 times better than natural soils and can increase energy efficiency in applications like basement backfill. Using TDA can prevent frost heave damage and eliminate ongoing expenses associated with road repairs.
- **Vibration Mitigation:** Due to its rubbery nature, TDA provides better vibration mitigation compared to conventional soil. The TDA alternative is very cost effective, and all light rail institutions in California now use TDA as the top choice for vibration attenuation before considering other alternatives.

- **Environmental Impact:** Diverts millions of scrap tires from landfills and supports cleaner water. The microbiology communities that develop on TDA develop much faster and more robust than on other materials, removing up to 95% of phosphorus along with heavy metals, pesticides, and petroleum products in stormwater applications.
- **Simplified Installation:** Due to its reduced weight, TDA is easier to transport and deliver to job sites. Unlike sand or gravel on slopes which are difficult to keep in place, TDA stays put as it's pushed the up side slopes, making placement much easier and faster.
- **Cost:** TDA's lightweight properties reduce installation time and equipment requirements compared to denser natural aggregates, lowering both construction and long-term maintenance costs

Proven Applications

Embankment & Lightweight Fill	Reduces settlement/soil load
Retaining Wall Backfill	Reduces lateral pressure, requires less rebar, provides seismic resilience
Road Slide Repairs	Tripled the lifespan of repairs over traditional methods
Vibration Damping	Railway & road, cost-effective
Stormwater Management	Removes microplastics, heavy metals, up to 95% of phosphorus, nitrates, pesticides, and petroleum products
Landfill Construction	Liner protection, drainage layer, frost protection, gas well applications

Calls to Action: What's Next?

- **Engineers & Project Owners:** Reference ASTM D6270 standards, review State of Knowledge Report, and attend local TDA demonstrations to build confidence in design and application.
- **Regulators & DOTs:** Support grant programs, update specs, engage in project-based learning and knowledge sharing opportunities with different states with more mature TDA adoption/TDA programs (ex: CA, OH, IA); collaborate with recycling foundations to grow local capacity.
- **Policy Makers:** Enable policies and funding for demonstration projects, streamline approval, and support cross-agency learning for TDA adoption.
- **Industry & Value Chain Participants:** Manufacture and specify ASTM-standard TDA, document successful installations, and prioritize education of engineers and contractors on TDA advantages.
- **Sustainability Advocates:** Champion TDA in green infrastructure, stormwater solutions, and circular economy initiatives; demonstrate success with real projects and transparent reporting.

- **Academics:** Collaborate with project owners and recyclers to conduct research on performance, longevity and economic and social impact of TDA; create a collection of easy-to-share data from major projects across North America that proves TDA's value.

Conclusion

TDA is not theoretical; it delivers decades of field-proven performance with unique value for infrastructure, the environment, and communities. But the path to 100% tire circularity depends on further collaboration, education, and innovation. Stakeholders are encouraged to access technical resources, join future webinars, and partner on pilot projects to move TDA adoption forward.

Resources on the topic of Tire Derived Aggregate

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

- Research Report: Transforming End-of-Life Tires into a Resource: The Role of Tire Derived Aggregates in Civil Engineering
- Fast Facts: Tire Derived Aggregate (TDA)
- Videos: Woodbury Project TDA for Stormwater Management
- Publications: TDA Reports at CalRecycle and Training Videos
- Photos: Photos TDA Application Examples
- Link to webinar recording: HERE
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Upcoming End-of-Life Tire Webinars:

From Tires to Everyday Products: The Growing Market for Commercial Products Made from Recycled Tires

Date: October 30, 2025, 2:00 PM Eastern
Register at: tirerecyclingfoundation.org/webinars

Tire Recycling Foundation Conference:

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

Additional Resources

- **tirerecyclingfoundation.org/webinars**
- **https://www.ustires.org/webinars**

Questions or Feedback:

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