SEAUPG – 2025 Annual Meeting

NAPA NATIONAL ASPHALT PAVEMENT ASSOCIATION

WHAT IS THE NEXT STEP FOR EPDS? MOVING BEYOND A1-A3

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NAPA NATIONAL ASPHALT PAVEMENT ASSOCIATION

OUR MISSION: To **advance the asphalt pavement industry** through leadership, stewardship, and member engagement.

OUR VISION: Sustainable transportation infrastructure that paves the way for thriving communities and commerce.

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What is an EPD?

Environmental Product Declaration
- **Quantified** environmental information on the **life cycle** of a product to enable **comparisons** between products fulfilling the **same function***

"Nutrition label" for environmental impacts

Independently verified

EPD "Nutrition" Label

Your Building Product

Amount per Unit

LCA IMACT MEASURES	TOTAL
Primary Energy (MJ)	12.4
Global Warming Potential (kg CO^2 eq)	0.96
Ozone Depletion (kg CFC 11 eq)	1.80E-08
Acidification Potential (mol H^+ eq)	0.93
Eutrophication Potential (kg N^- eq)	6.43E-04
Photo-Oxidant Creation Potential (kg O3 eq)	0.121

Your Product's Ingredients: Listed Here

https://westcoastclimateforum.com/cfpt/concrete/strategy1

*Only EPDs from different Product Categories should NOT be compared to each other.

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Types of EPDs

Industry-Wide

Product-Specific

Plant-Specific & Product-Specific

EPDs for Asphalt Mixtures are Plant-Specific & Product-Specific

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Life Cycle Stages

A1-A3 and Beyond

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Construction Works Assessment Information

Chart Area

Construction Works Life Cycle Information Within the System Boundary

A1-A3			A4-A5		B1-B7					C1-C4				Optional supplementary information beyond the system boundary
Production Stage (Cradle-to-Gate)			Construction Stage		Use Stage					End-Of-Life Stage				D
A1	A2	A3	A4	A5	B1	B2	B3	B4*	B5	C1	C2	C3	C4	
Extraction/upstream production	Transport to factory	Manufacturing	Transport to site	Installation	Use	Maintenance (incl. production, transport, and disposal of necessary materials)	Repair (incl. production, transport, and disposal of necessary materials)	Replacement (incl. production, transport, and disposal of necessary materials)	Refurbishment (incl. production, transport, and disposal of necessary materials)	Deconstruction / Demolition	Transport to waste processing or disposal	Waste processing	Disposal of waste	Potential net benefits from reuse, recycling, and/or energy recovery beyond the system boundary
					B6 Operational Energy Use									
					B7 Operational Water Use									

* Replacement information module (B4) not applicable at the product level

Figure 2. Life cycle stages and information modules for construction products as defined in ISO 21930.

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Cradle-to-Gate: Meeting Market Demand

- Buy Clean Requirements – States in Blue
- Low Carbon Transportation Materials Grants – States in Red
- Private Markets – specifically data center construction
- Publicly Traded Contractors: Seeking to track Scope 3 emissions

Emerald ECO LABEL

ENERGY STAR

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What Could We Do Better?

Just A1-A3

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A1 - Materials

Mind the data gaps

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A3 - Production

Photo by CWR Contracting

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Beyond A3

What's the Advantage and What's It Going to Take

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A4 – Transportation to Project

- Changes type of EPD
- Evens playing field

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A5 - Construction

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A Fundamental Question

Mix or Pavement?

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The B's – Use Phase

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The B's – Use Phase

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The B's – Use Phase

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A Word about Performance

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How Do I Know What Is Sustainable

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The C's – End of Life

Photo Courtesy of BOMAG

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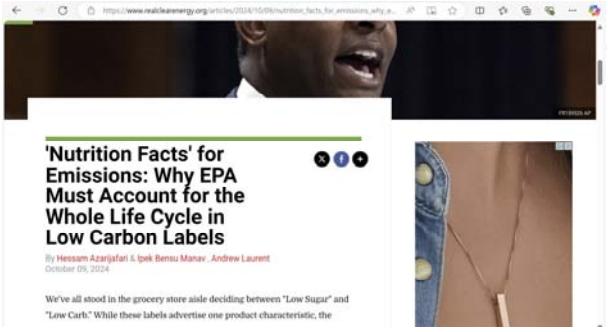

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Pavement LCA and Walker

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LCA Beyond A3: Highlights Competitive Advantage

1. **Smoother Ride**:
   - Enhanced ride quality.
   - Reduced vehicle operating costs.
2. **Speed of Construction and Flexibility**:
   - Laid and opened to traffic much faster than concrete.
   - Minimizes traffic disruptions.
   - Reduces the economic impact of road closures.
3. **Recyclability**:
   - Encourages circularity.
   - Improves sustainability.

Life Cycle Assessment of Asphalt Pavements allows quantification of advantages that otherwise are only subjectively communicated – allowing for a competitive advantage in pavement type decision making.

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LCA Beyond A3: Energy Accounting

1. **Pavement Construction Energy Use**:
   - Lower energy consumption during mixture placement.
   - Use of Warm Mix technology at reduced temps can reduce embodied energy.

Energy Accounting directly impacts the bottom line for producers and contractors while delivering a competitive market advantage.

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LCA Beyond A3: LCA Builds AI Advantage

1. **LCA Requires Formal Industry Wide Data Collection:**
   - Delivers insights on industry practices
   - Allows structuring and formalization of industry data
   - Baseline data for supporting intelligent construction
2. **Automation Opportunities**:
   - Structured data key to automation
   - Optimized logistics and material management
   - Improved energy management
   - Improved market and customer engagement

Data collection, structuring and analysis are key to developing foundation for AI technologies, including the use of machine learning and large language models in automation.

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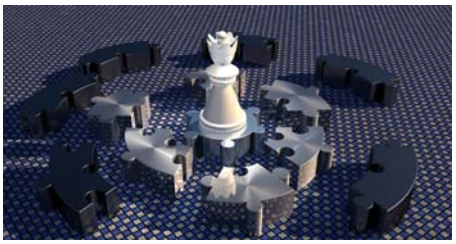
A Final Thought



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