





66th Annual New Jersey Asphalt Paving Conference Industry Perspective on EPDs and Low Carbon Materials

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An Industry-Wide Vision



The Road The

A Vision for Net Zero Carbon Emissions for the Asphalt Pavement Industry

Vision: Sustainable communities and commerce, connected by net zero carbon emission asphalt pavements **Mission:** Engage, educate, and empower the U.S. asphalt community to produce and construct net zero carbon emission asphalt pavements

Learn more at

asphaltpavement.org/climate

Production and Construction



Electricity





Supply Chain

Quality, Durability, Longevity, Efficiency

2023





Overview of Emerald Eco-Label EPD Tool



Life Cycle Framework – LCA and EPDs



Key Components of NAPA's EPD Program



Learn more at <u>www.asphaltpavement.org/epd</u>



Where can I find published EPDs?

asphaltepd.org/published/

 The most comprehensive and up-todate directory of EPDs for asphalt mixtures

NJ Stats

• 33 Published EPDs from 5 plants

www.asphaltpavement.org/epd

- Program documents and other information
 - Product Category Rules (PCR)
 - Underlying Life Cycle Assessment (LCA)
 - Other documents

Find a mix with an Environmental Product Declaration

Available mixes			
State	Plants	Mixes	Declarations
AL	1	4	See EPDs
AR	3	25	See EPDs
AZ	1	16	See EPDs
CA	1	6	See EPDs
со	14	57	See EPDs
СТ	2	14	See EPDs
FL	15	76	See EPDs
GA	1	2	See EPDs
ID	1	1	See EPDs
IL	2	9	See EPDs

What Does a Simple Mix from a Typical Plant Look Like?



Simple Mix from a Typical Plant

• Materials (A1)

- 95% aggregates
- 5% asphalt binder
- Transport (A2)
 - 22 miles by truck
- Plant Energy (A3)
 - Burner fuel Natural Gas
 - 289,000 Btu/ton
 - 3.3 kWh/ton Average grid



NAPA

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Total = 54.7 kg CO2e/ton



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(A Few) Strategies to Reduce Emissions



Use of RAP





Burner Fuel Type





WMA – Reduced Mix Production Temp





Reduced Aggregate Moisture Content



Assume 10% Reduction in Burner Fuel Consumption per 1% Reduction in Agg. Moisture



A2 Transport Distance and Mode





Tools to Help Mix Producers Reduce Emissions



EPD Optimizer Tool

- Easily **compare** two of your own mixes to each other
- More granular analysis of data
- Create plant variants to see how changes to plant operations affect EPDs
- Evaluate **economic** and **environmental** impacts of certain changes
 - Switching fuel types
 - Aggregate moisture reduction









Comparing Burner Fuels with the Optimizer

Test - 20% RAP	46.85 kg CO2 eq.	Test - 20% RAP	38.31 kg CO2 eq.
Plant: Test Plant 1	Test Plant 1 - Burner: Diesel	Plant: Test Plant 1	
Basic Binder	Materials	Basic Binder	Materials
No. 2 Coarse		No. 2 Coarse	
C-33 Sand		C-33 Sand	
No. 3 Fine Recycled Asphalt Pavement		Recycled Asphalt Pavement	
RAP Truck		RAP Truck	Transport
No. 2 Coarse Truck C-33 Sand Truck No. 3 Fine Truck Basic Binder Truck	Iransport	No. 2 Coarse Truck C-33 Sand Truck No.3 Fine Truck Basic Binder Truck	
Diesel, Burner		Natural Gas	Production
	Production	Grid Electricity	
		Diesel, Equipment	
Grid Electricity			
Diesel, Equipment			







Recording available on NAPA's store at goaspha.lt/Optimizer. Asphalt Plant Energy Performance Peer Exchange (APEX)



- Partner with U.S. EPA
- Market and promote your company's partnership
- Learn best practices to manage energy
- Get assistance from an experienced industrial energy advisor

https://www.asphaltpavement.org/expertise/sustainability/tools/energy-star-apex-program



Key Takeaways

- EPDs provide verified data to quantify environmental impacts
- Buy Clean policies are spreading quickly
- Inflation Reduction Act will accelerate demand for low carbon materials
- Emission reductions can be achieved with existing practices and technologies
- Prepare your company by developing EPDs
 - Start with one plant
 - Expand to other plants, benchmark your operations



Thank you, New Jersey!

Gold Club (50+ Years)

 Weldon Materials Inc., Weldon Asphalt Div.

NAPA Members

- Arawak Paving Co. Inc. Barrett Asphalt Corp.
- Colas Inc.
- GAF
- Hoffman Equipment
- Horizon Engineering Consulting
- K&L Gates LLP

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- The Walter R. Earle Co.
- Trap Rock Industries
- Milano Contracting
- Reivax Contracting Corp.
- RendaRoads Inc.
- Smith-Sondy Asphalt Construction Co. Inc.
- Tilcon New York Inc. a CRH Co.
- Winslow Hot Mix LLC

State Advisor: Pete Kochek, Weldon Materials Inc., Weldon Asphalt Div.

