

The Road Forward

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

Learn more at
asphaltpavement.org/climate



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Original Oregon EPD Bill

LC 3124

2017 Regular Session

2/23/17 (TSB/ps)

D R A F T

SUMMARY

Requires Department of Transportation to establish pilot program to assess how products that department or contractor for department procures affect emissions of carbon dioxide. Provides that pilot program must require prospective contractors to declare environmental product cost of certain products in response to invitation to bid for public improvement contract. Requires department to determine lowest responsible bidder after calculating environmental product cost for product.

Provides that local contracting agency may adopt practices of department.

Requires all state contracting agencies to adopt practices of department beginning January 1, 2021.

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**
 - 11-page report
- **Independently verified**
- **Declared Unit**
 - The “serving size”
 - 1 metric tonne (1 short ton) asphalt mixture



An Environmental Product Declaration (EPD) for Asphalt Mixtures

Company Information

Ajax Paving Industries of Florida, LLC is an asphalt mixture producer.

Plant 1 - North Venice asphalt plant

One Ajax Drive

North Venice, FL 34275

USA



Product Description

This EPD reports the potential environmental impacts and additional environmental information for an asphalt mixture, which falls under the United Nations Standard Products and Services Code 30111509. Asphalt mixtures are typically incorporated as part of the structure of a roadway, parking lot, driveway, airfield, bike lane, pedestrian path, railroad track bed, or recreational surface.

Mix Name: P-401 3/4 Virgin 75G

Specification Entity: Federal Aviation Authority

Specification: P-401

Gradation Type: dense

Mix Design Method: superpave

Nominal Maximum Aggregate Size: 12.5 mm

Performance Grade of Asphalt Binder: PG 76-22

Customer [Project/Contract] Number: Not Reported

This mix producer categorizes this product as a Hot Mix Asphalt (HMA) asphalt mixture. This asphalt mixture was produced within a temperature range of 160 to 160°C (320.0 to 320.0°F). Energy and environmental impacts are based on a plant's average performance over a 12-month period and are not adjusted for mix-specific production temperatures.

Data Completeness Statement: Upstream data for one or more of the ingredients representing less than 1% (individually) or 5% (total) of the total mass of this asphalt mixture is not available. The upstream environmental impacts associated with manufacturing these ingredients are not accounted for in this EPD. See Table 1 for more information.



This declaration is an EPD in accordance with ISO 14025:2006¹ and ISO 21930:2017². The PCR is *Product Category Rules for Asphalt Mixtures*^{3,4}. This EPD transparently describes the potential environmental impacts associated with the identified life cycle stages of the described product.

Declaration Number: 4.3.322 v7

Software Version: 2.0.0

Date of Issue: May 17, 2022

Period of Validity: March 31, 2027

This EPD is valid for asphalt mixtures produced at the location indicated on this page. Data used to inform this EPD reflect plant operations from a 12-month period beginning on Jan. 1, 2021.

This EPD can be found at <https://asphaltep.org/epd/d/j5U2v/>

LCA performed by: Ben Ciavola, PhD

*Source: ISO 14025:2006. EPDs from different Product Categories should NOT be compared to each other.

Environmental Impact Indicators

TABLE 4. LIFE CYCLE IMPACT INDICATORS

ACRONYM	INDICATOR	UNIT	QUANTITY PER METRIC TONNE ASPHALT MIXTURE (PER SHORT TON ASPHALT MIXTURE)			
			MATERIALS (A1)	TRANSPORT (A2)	PRODUCTION (A3)	TOTAL (A1-A3)
GWP-100	Global warming potential, incl. biogenic CO ₂	kg CO ₂ Equiv.	33.77 (30.63)	4.22 (3.82)	23.32 (21.15)	61.30 (55.61)
ODP	Ozone depletion potential	kg CFC-11 Equiv.	1.79e-08 (1.63e-08)	2.55e-08 (2.31e-08)	6.24e-08 (5.66e-08)	1.06e-07 (9.60e-08)
EP	Eutrophication potential	kg N Equiv.	8.95e-03 (8.12e-03)	1.26e-03 (1.14e-03)	2.38e-03 (2.16e-03)	1.26e-02 (1.14e-02)
AP	Acidification potential	kg SO ₂ Equiv.	9.62e-02 (8.73e-02)	2.15e-02 (1.95e-02)	4.23e-02 (3.84e-02)	1.60e-01 (1.45e-01)
POCP	Photochemical ozone creation potential	kg O ₃ Equiv.	1.98 (1.79)	0.69 (0.63)	1.25 (1.14)	3.92 (3.56)

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POCP	Photochemical ozone creation potential	kg O3 Equiv.	1.98 (1.79)	0.69 (0.63)	1.25 (1.14)	3.92 (3.56)

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GWP
61.30 kg CO₂e per metric tonne
55.61 kg CO₂e per short ton

The 5 Pillars

- **Collect EPDs to assess GHGs**
- **Conduct LCAs for some projects**
- **Use EPDs and LCAs to develop regional GHG reduction strategies – include impact of improving pavement conditions**
- **Report on: time; cost; uncertainties**
- **Utilize technical advisory committee for: quantity threshold; time for submittal; additional materials; exceptions; other issues**



FHWA Climate Challenge

- Quantifying the emissions of sustainable pavements
 - Explore the use of EPDs and LCAs to inform pavement material and design selection
- Up to \$500,000 per agency
- Proposals accepted beginning July 1, 2022