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CENTRAL PRE-MIX
A CRH COMPANY

Environmental Product Declaration

This document is a product-specific Type III Environmental Product Declaration (EPD) for aggregate products manufactured by Central Pre-Mix at the facility located in Spokane, WA.

General information

Environmental Product Declaration

This Environmental Product Declaration (EPD) reports the impacts for 1 US ton (dry weight) aggregates, for use in business-to-business (B2B) in accordance with ISO 14025, ISO 21930, and ASTM International's EPD program operator rules.

Product Name	Construction Aggregates
Manufacturer Name and Address	Central Pre-Mix (A CRH Company) 1902 North Sullivan Road Spokane, WA - 99216
Program Operator	ASTM International http://www.astm.org/EPDs.htm
General Program instructions and Version Number	ASTM Program Operator for Product Category Rules (PCRs) and Environmental Product Declarations (EPDs), General Program Instructions. Version 8.0, revised April 29, 2020.
Declaration Number	EPD 996
Reference PCR and Version Number	ISO 21930:2017 Sustainability in Building Construction – Environmental Declarations of Building Products serves as the core PCR. Product Category Rule for Environmental Product Declarations: Construction Aggregates – NSF/ASTM 1126-23 V2.0
EPD Type and Scope (facility/product/average)	Type III EPD Cradle-to-gate (modules A1 to A3) Facility specific
Defined functional or declared unit	1 US Ton of aggregate
Product's intended Application and Use	This EPD is intended for business-to-business (B-to-B) audiences.
Product RSL (Reference Service Life) *	Not Applicable (B modules not included in scope)
Markets of Applicability	United States and Canada
Date of Issue	May 21st, 2025
Period of Validity	Five years – until May 20th, 20230
Year of reported manufacturer primary data	January 1st, 2023 to December 31st, 2023
LCA Software and Version Number	Simapro 9.1
LCI Database and Version Number	USLCI, SmartData, Construction Aggregates – NSF/ASTM 1126-23 Annex A V2.0

LCIA Methodology and Version Number	TRACI 2.1 v1.04
Overall Data Quality Assessment Score	3
The sub-category PCR review was conducted by:	Industrial Ecology Consultants, Thomas P. Gloria, Ph.D t.gloria@industrial-ecology.com
This declaration was independently verified in accordance with ISO 14025: 2006. ISO 21930:2017 serves as the core PCR. Sub-category PCR: NSF/ASTM 1126: Construction Aggregates Product Category Rule	□ Internal ☑ External
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	Nawal Shoaib nawal@climateearth.com Climate Earth, Inc. 137 Park Place, Suite 204, Point Richmond, CA, 94801 (415) 391-2725 ▪ http://www.climateearth.com
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Thomas P. Gloria, PhD t.gloria@industrial-ecology.com Industrial Ecology Consultants 35 Bracebridge Rd. Newton, MA 02459-1728 (617) 553-4929 http://www.industrial-ecology.com
Explanatory material may be obtained from the following:	Dave Methvin Quality Control Manager Central Pre-Mix & Inland Asphalt Co. +1-509-998-4725 dave.methvin@centralpremix.com
*Only applicable where the LCA/EPD includes Module B.	

Products covered in this facility average EPD are detailed in Table 1. All products contain 100% construction aggregate. No hazardous materials were used in the manufacture of these products.

Table 1: Products manufactured at the Mead Quarry

Product Name	Product Description	ASTM Standard	Images
Coarse Sand	Concrete Rock	C-33	
Blended Concrete Sand	Concrete Rock	C-33	
3/8" Round	Concrete Rock	C-33	
3/4"-#4 Round	Concrete Rock	C-33	
Torp/Sand	Concrete Rock	C-33	
3/8" Exposed	Concrete Rock	C-33	
1 1/2" Round Gravel	Concrete Rock	C-33	

3/8" Minus/Crushed	Asphalt Aggregate	D-0692	
1/2"-1/4" Chips	Asphalt Aggregate	D-0692	
5/8"-1/4" Chips	Asphalt Aggregate	D-0692	
3/4" Crushed	Driveway Gravel	Mined as a C-33 then crushed	
#4-#8 Chips	Asphalt Aggregate	D-0692	
Backfill for Walls	Backfill Blend	mined as C-33 then crushed and sand added	
P208 Airport Rock	CSBC For the FAA	C-136	
3/8"-#4 Chip	Asphalt Aggregate	D-0692	

LCA Study

System boundary

This study captures the following mandatory cradle-to-gate (A1-A3) life cycle product stages (as illustrated in Figure 1):

A1 - Extraction and processing of raw materials including fuels used in extraction and transport within the process.

A2 – Specific transportation of raw materials from extraction site or source to manufacturing site (including any recovered materials from source to be recycled in the process) and including empty backhauls and transportation to interim distribution centers or terminals.

A3 – Manufacturing of the product, including all energy and materials required and all emissions and wastes produced.

Product Stage			Construction Process Stage		Use Stage							End of Life Stage			
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
Raw material supply	Transport	Manufacturing	Transport	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Figure 1. Life-Cycle Stages and Modules (Note: MND = module not declared; x = module included)

Except as noted above, all other life cycle stages as described in Figure 1 are excluded from the LCA study. The following processes are also excluded from the study:

1. Production, manufacture, and construction of manufacturing capital goods and infrastructure;
2. Production and manufacture of production equipment, delivery vehicles, and laboratory equipment;
3. Personnel-related activities (travel, furniture, office supplies);
4. Fuel used to transport personnel around the mine and sand & gravel facility.
5. Energy and water use related to company management and sales activities.

The main processes included in the system boundary are illustrated in Figure 2.

System Boundary

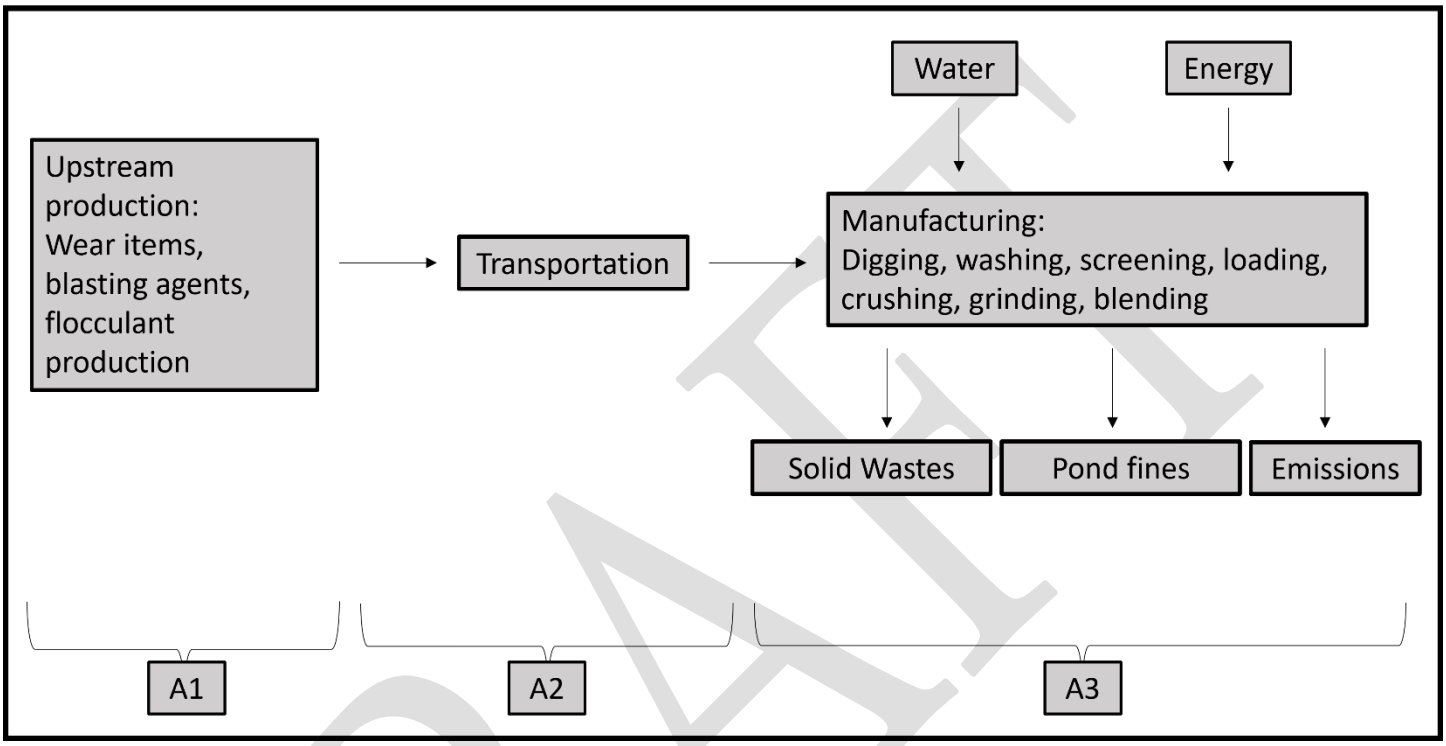

Figure 2. Main Processes Included in System Boundary

Explanatory materials may be requested by contacting:

Dave Methvin
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CPM Development Corporation
+1-509-998-4725
dave.methvin@centralpremix.com

Secondary data sources

A list of each secondary with its LCI data sources is provided below.

Diesel: USLCI process (2020): "Diesel, combusted in industrial equipment - Northern America"
Electricity: U.S. DOE NETL (2020)
Lubricating oil: US-EI process (2021): "Lubricating oil, at plant/US"
Manganese: NSF PCR for Construction Aggregates (2024): "Manganese"
Truck Transport: USLCI process (2020): "Transport, combination truck, short-haul, diesel powered, West North Central/tkm/RNA"
Tires: US-EI process (2021): "Synthetic rubber, at plant/US- US-EI U" and EcoInvent 3.8 (2021): "Synthetic rubber {RoW}| production | Cut-off, U"
Steel wear parts: US-EI process (2021): "Steel, low-alloyed, at plant/US- US-EI U" and EcoInvent 3.8 (2021): "Steel, low-alloyed {RoW}| steel production, electric, low-alloyed | Cut-off, U"
Rubber wear parts: US-EI process (2021): "Synthetic rubber, at plant/US- US-EI U" and EcoInvent 3.8 (2021): "Synthetic rubber {RoW}| production | Cut-off, U"
Waste: EcoInvent 3.8 (2021): "Municipal solid waste {RoW}| treatment of, sanitary landfill | Cut-off, U"

Data gaps, assumptions, and limitations

Electrical data collected for this plant included the entire plant. Some of the electricity and diesel reported may not be used directly in the production of the above mentioned products at Sullivan Quarry.

Environmental Impacts

Cradle to Gate (A1-A3) facility average impact results per 1 US ton (short ton, TN.SH) for construction aggregates produced at Sullivan Quarry (see Table 1) are outlined in Table 2.

Table 2: Cradle-to-Gate Impact Results for Sullivan Quarry Covered in Study per 1 US ton

Impact category	Unit	A1	A2	A3	A1 to A3
Global warming	kg CO2 eq	0.12	1.83E-02	1.78	1.92
Ozone depletion	kg CFC-11 eq	1.31E-08	7.64E-13	2.37E-08	3.68E-08
Eutrophication	kg N eq	1.53E-03	1.27E-05	2.13E-03	3.67E-03
Acidification	kg SO2 eq	5.70E-03	2.12E-04	0.02	0.02
Smog	kg O3 eq	2.37E-03	5.38E-03	0.55	0.56
Abiotic depletion non-fossil mineral	kg Sb eq	5.71E-07	x	3.27E-10	5.71E-07
Abiotic depletion (fossil fuels)	MJ	1.25	2.59E-01	21.3	22.8
Renewable primary energy resources as energy	MJ	0.03	x	3.17E-03	3.77E-02
Renewable primary resources as material	MJ	x	x	x	x
Non-renewable primary resources as energy	MJ	1.31	2.59E-01	21.4	23.0
Non-renewable primary resources as material	MJ	x	x	x	x
Consumption of fresh water	m3	9.67E-04	x	8.03E-01	8.04E-01
Secondary materials	kg	x	x	x	x
Renewable secondary fuels	MJ	x	x	x	x
Non-renewable secondary fuels	MJ	x	x	x	x
Recovered energy	MJ	x	x	x	x
Hazardous waste disposed	kg	x	x	x	x
Non-hazardous waste disposed	kg	x	x	1.66E-01	1.66E-01
High-level radioactive waste	m3	3.23E-11	x	2.15E-12	3.44E-11
Intermediate and low-level radioactive waste	m3	7.31E-10	x	4.20E-11	7.73E-10
Components for reuse	kg	x	x	x	x
Materials for recycling	kg	x	x	7.40E-04	7.40E-04
Materials for energy recovery	kg	x	x	1.07E-03	1.07E-03
Recovered energy exported from product system	MJ	x	x	x	x
Calcination	kg CO2 eq	x	x	x	x
Biogenic CO2 emissions	kg CO2 eq	x	x	x	x

This EPD meets all comparability requirements stated in ISO 14025:2006. However, differences in certain assumptions, data quality, and variability between LCA data sets may still exist. As such, caution should be exercised when evaluating EPDs from different manufacturers or programs, as the EPD results may not be entirely comparable. Any EPD comparison must be carried out at the construction works level per ISO 21930:2017 guidelines. The results of this EPD reflect an average performance by the product and its actual impacts may vary on a case-to-case basis.

Cradle to Gate (A1-A3) facility average impact results per 1 metric tonne for construction aggregates produced at Sullivan Quarry (see Table 1) are outlined in Table 3

Table 3: Cradle-to-Gate Impact Results for Sullivan Quarry Covered in Study per 1 metric tonne

Impact category	Unit	A1	A2	A3	A1 to A3
Global warming	kg CO2 eq	0.13	2.01E-02	1.97	2.11
Ozone depletion	kg CFC-11 eq	1.44E-08	8.42E-13	2.62E-08	4.06E-08
Eutrophication	kg N eq	1.68E-03	1.40E-05	2.35E-03	4.05E-03
Acidification	kg SO2 eq	6.29E-03	2.34E-04	0.02	0.02
Smog	kg O3 eq	2.61E-03	5.93E-03	0.61	0.61
Abiotic depletion non-fossil mineral	kg Sb eq	6.29E-07	x	3.61E-10	6.30E-07
Abiotic depletion (fossil fuels)	MJ	1.38	2.86E-01	23.5	25.1
Renewable primary energy resources as energy	MJ	0.04	x	3.49E-03	4.15E-02
Renewable primary resources as material	MJ	x	x	x	x
Non-renewable primary resources as energy	MJ	1.45	2.86E-01	23.6	25.4
Non-renewable primary resources as material	MJ	x	x	x	x
Consumption of fresh water	m3	1.07E-03	x	8.85E-01	8.86E-01
Secondary materials	kg	x	x	x	x
Renewable secondary fuels	MJ	x	x	x	x
Non-renewable secondary fuels	MJ	x	x	x	x
Recovered energy	MJ	x	x	x	x
Hazardous waste disposed	kg	x	x	x	x
Non-hazardous waste disposed	kg	x	x	1.83E-01	1.83E-01
High-level radioactive waste	m3	3.56E-11	x	2.37E-12	3.80E-11
Intermediate and low-level radioactive waste	m3	8.05E-10	x	4.63E-11	8.52E-10
Components for reuse	kg	x	x	x	x
Materials for recycling	kg	x	x	8.16E-04	8.16E-04
Materials for energy recovery	kg	x	x	1.17E-03	1.17E-03
Recovered energy exported from product system	MJ	x	x	x	x
Calcination	kg CO2 eq	x	x	x	x
Biogenic CO2 emissions	kg CO2 eq	x	x	x	x

This EPD meets all comparability requirements stated in ISO 14025:2006. However, differences in certain assumptions, data quality, and variability between LCA data sets may still exist. As such, caution should be exercised when evaluating EPDs from different manufacturers or programs, as the EPD results may not be entirely comparable. Any EPD comparison must be carried out at the construction works level per ISO 21930:2017 guidelines. The results of this EPD reflect an average performance by the product and its actual impacts may vary on a case-to-case basis.

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