

Portland Plant Environmental Product Declaration



AMERIMIX
AMX400 Series



AMERIMIX
AMX405



AMERIMIX
AMX410



AMERIMIX
AMX420



AMERIMIX
AMX600 Series



AMERIMIX
AMX730



SAKRETE
High-Strength
Concrete Mix



AMERIMIX
5000 Plus
Concrete Mix

General Information

This cradle to gate Environmental Product Declaration covers dry mix products produced at the Kent Plant. The Life Cycle Assessment (LCA) was prepared in conformity with ISO 21930, ISO 14025, ISO 14040, and ISO 14044. This EPD is intended for business-to-business (B-to-B) audiences.

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ISO 21930:2017 Sustainability in Building Construction-Environmental Declaration of Building Products serves as the core PCR

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Independent verification of the declaration, according to ISO 21930:2017 and ISO 14025:2006:

internal external

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EPDs are comparable only if they comply with ISO 21930 (2017), use the same sub-category PCR where applicable, include all relevant information modules and are based on equivalent scenarios with respect to the context of construction works.

General Information

Producer

As a CRH company, Oldcastle APG is part of one of the largest global networks of manufacturers in the architectural products industry. We create. We build. We innovate. Most importantly, we care for our people and our planet. Across the globe, we stand together to reinvent the way our world is built.

Product

This EPD reports environmental information for the products produced by Oldcastle at its Portland facility.

The products covered in this EPD meet the following standards:

Product Type	Product Name	Applicable Standard	Description
Mortar	Amerimix 400 Type S	ASTM C270	Amerimix 400 series mortars are a factory blend of Portland cement, sand and lime formulated for maximum yield, performance and workability. AMX400 mortars are available in Types N and S.
	Amerimix 400 Type N	ASTM C270	
	Amerimix 420 Type O	ASTM C270	Amerimix 420 is a factory blend of Portland cement, sand and lime formulated for use in tuckpointing and historical restoration projects where a low-strength mortar is required.
	Amerimix 410 Type S IWR	ASTM C270	Amerimix 410 Type S IWR and Type N IWR are a factory blend of Portland cement, sand, lime and a proprietary integral water repellent formulated for maximum yield, performance, workability and water repellency. AMX410 mortars are available in Types N and S.
	Amerimix 410 Type N IWR	ASTM C270	
Core Fill Grout	Amerimix 600 Core Fill Fine	ASTM C476	AMX 600 series core fill grouts are a factory blend of Portland cement, sand and lime formulated for maximum yield, performance and workability. AMX 600 core fill grouts are available in a fine- and coarse-aggregate formulas.
	Amerimix 600 Core Fill Coarse	ASTM C476	
Concrete	Sakrete HSCM	ASTM C387	Sakrete High-Strength Concrete Mix is a pre-blended bagged concrete rated for 4000 psi performance in full-depth concrete applications including slabs, posts, footings and more.
	Sakrete 5000+ (50lb)	ASTM C387	Sakrete 5000 Plus High Early Strength Concrete Mix is a pre-blended bagged concrete rated for 5000 psi performance in full-depth concrete applications over 1.5" in thickness, including slabs, posts, footings and more.
Stucco	Amerimix 730 Stucco	ASTM C270	Amerimix 730 Scratch & Brown Stucco is a factory blend of Portland cement and sand formulated for maximum yield, performance and workability, and approved for use in scratch & brown stucco applications.

Product Components

The main product components used in the manufacturing of Portland plant products are:

Main Materials	Input range
Cement	5-25%
Sand	35-80%
Lime	5-20%
Dry rock	0-45%

Declared Unit

The declared unit is one metric tonne of finished product.

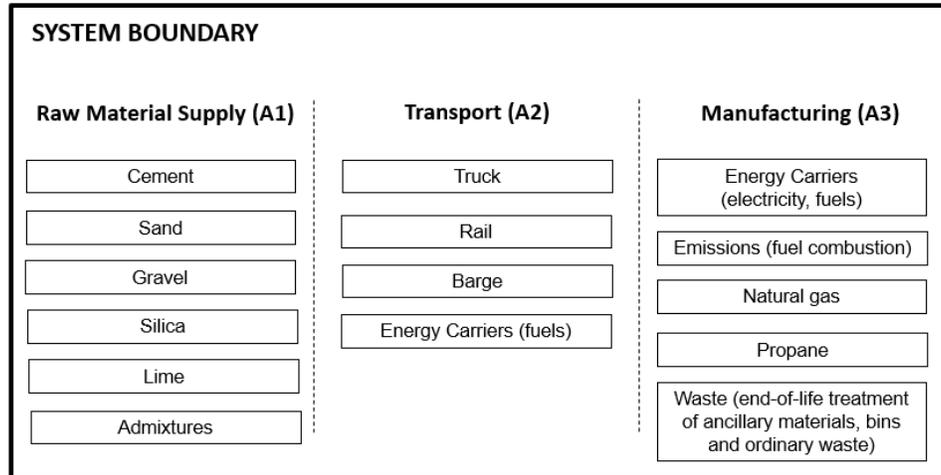
System Boundary

This EPD is a cradle-to-gate EPD covering A1-A3 stages of the life cycle.

PRODUCTION Stage (Mandatory)			CONSTRUCTION Stage		USE STAGE					END-OF-LIFE Stage			
Extraction and upstream production	Transport to factory	Manufacturing	Transport to site	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	De-construction/ Demolition	Transport to waste processing or disposal	Waste processing	Disposal of waste
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Note: MND = module not declared; X = module included.

The production stages and primary unit processes included in the study by product stage are:



Cut-Off

Items excluded from system boundary include:

- production, manufacture and construction of manufacturing capital goods and infrastructure;
- production and manufacture of production equipment, delivery vehicles, and laboratory equipment;
- personnel-related activities (travel, furniture, and office supplies); and
- energy and water use related to company management and sales activities that may be located either within the factory site or at another location.

Allocation Procedure

Allocation follows the requirements and guidance of ISO 14044:2006, Clause 4.3.4; NSF PCR:2021; and ISO 21930:2017 section 7.2. Recycling and recycled content is modeled using the cut-off rule.

Life Cycle Assessment

Portland Products¹, bulk shipped per 1 metric tonne.**

Impact Assessment	Unit	Amerimix 400 Type N Mortar	Amerimix 400 Type O Mortar	Amerimix 400 Type S Mortar	Amerimix 410 Type S Mortar	Amerimix 600 Core Fill Coarse	Amerimix 400 Type S Colored	Sakrete 5000	Sakrete FastSet	Sakrete Sand Mix	Sakrete HSCM
Global warming potential (GWP) ²	kg CO ₂ eq	139	107	177	179	159	199	181	178	207	141
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq	6.44E-06	4.54E-06	8.86E-06	8.86E-06	8.14E-06	1.07E-04	9.38E-06	8.37E-06	1.08E-05	7.13E-06
Eutrophication potential (EP)	kg N eq	1.08E-01	8.67E-02	1.33E-01	1.34E-01	1.17E-01	1.36E-01	1.32E-01	1.59E-01	1.51E-01	1.04E-01
Acidification potential of soil and water sources (AP)	kg SO ₂ eq	5.71E-01	5.31E-01	5.93E-01	5.97E-01	4.48E-01	6.29E-01	5.05E-01	4.86E-01	5.73E-01	4.00E-01
Formation potential of tropospheric ozone (POCP)	kg O ₃ eq	16.1	15.1	16.4	16.4	11.7	17.2	13.5	12.7	15.4	10.3
Resource Use											
Abiotic depletion potential for non-fossil mineral resources (ADPelements)*	kg Sb eq	2.70E-05	2.18E-05	3.39E-05	6.97E-05	3.16E-05	3.39E-05	3.50E-05	3.50E-05	3.91E-05	2.87E-05
Abiotic depletion potential for fossil resources (ADPfossil)	MJ, NCV	1134	982	1319	1341	1189	1801	1304	1266	1437	1095
Renewable primary energy resources as energy (fuel), (RPRE ³) *	MJ, NCV	276	267	289	292	285	289	291	287	299	279
Renewable primary resources as material, (RPRM ²) *	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable primary resources as energy (fuel), (NRPRE ²) *	MJ, NCV	1188	1030	1382	1406	1250	1864	1369	1327	1507	1152
Non-renewable primary resources as material, (NRPRM ²) *	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Consumption of fresh water, (FW ²)	m ³	1.64	1.66	1.65	1.66	1.78	2.28	1.74	2.23	1.69	1.81
Secondary Material, Fuel and Recovered Energy											
Secondary Materials, (SM ²) *	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable secondary fuels, (RSF ²) *	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable secondary fuels (NRSF ²) *	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Recovered energy, (RE ²) *	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Waste & Output Flows											
Hazardous waste disposed, (HW ²) *	kg	2.69E-04	1.67E-04	3.98E-04	4.01E-04	3.55E-04	3.98E-04	4.22E-04	7.91E-02	5.00E-04	3.00E-04
Non-hazardous waste disposed, (NHWD ²) *	kg	1.61E-01	1.00E-01	2.48E-01	3.65E-01	2.13E-01	2.48E-01	2.53E-01	9.70E+00	3.00E-01	1.80E-01
High-level radioactive waste, (HLRW ²) *	kg	1.93E-08	1.94E-08	1.84E-04	7.50E-04	1.97E-08	1.84E-04	1.95E-08	1.96E-08	1.93E-08	1.98E-08
Intermediate and low-level radioactive waste, (ILLRW ²) *	kg	9.36E-08	9.43E-08	9.34E-08	9.34E-08	9.57E-08	9.34E-08	9.48E-08	9.52E-08	9.37E-08	9.65E-08
Components for reuse, (CRU ²) *	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling, (MR ²) *	kg	1.62E-01	1.62E-01	1.62E-01	1.62E-01	1.62E-01	1.62E-01	1.62E-01	1.62E-01	1.62E-01	1.62E-01
Materials for energy recovery, (MER ²) *	kg	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02	1.12E-02
Recovered energy exported from the product system, (EE ²) *	MJ, NCV	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* Emerging LCA impact categories and inventory items are still under development and can have high levels of uncertainty that preclude international acceptance pending further development. Use caution when interpreting data in these categories. The following optional indicators are not reported and also have high levels of uncertainty: Land use related impacts, toxicological aspects, and emissions from land use change **Only EPDs prepared from cradle-to-grave life-cycle results and based on the same function, quantified by the same functional unit, and taking account of replacement based on the product reference service life (RSL) relative to an assumed building service life, can be used to assist purchasers and users in making informed comparisons between products

¹ These products contain no materials that are considered hazardous as defined by the PCR.

² GWP 100; 100-year time horizon GWP factors are provided by the IPCC 2013 Fifth Assessment Report (AR5).

CO₂ from biogenic secondary fuels used in kiln are climate-neutral (CO₂ sink = CO₂ emissions), ISO 21930, 7.2.7.

³ Calculated per ACLCA ISO 21930 Guidance.

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