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ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804+A2

Amrize
Hagerstown IT(P21)(L14) ASTM C595 Blended Cement

AMRIZE
BUILD YOUR AMBITION

Owner of the declaration
Amrize
8700 W. Bryn Mawr Ave, Suite 300
60631 Chicago
USA

Product
Hagerstown IT(P21)(L14) ASTM C595 Blended Cement

Declared product / Declared unit
1 t

This declaration is based on Product Category Rules
EN 15804:2012 + A2:2019,
EN 16908:2017+A1:2022 ,
NPCR Part A:2021

Program operator:
EPD Global
Majorstuen P.O. Box 5250
N-0303 Oslo
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Declaration number
NEPD-10947-10947-2

Registration number
NEPD-10947-10947-2

Issue date
02.02.2026

Valid to
01.02.2031

EPD Software
Emidat Platform v1.0.0

General Information

Product
Hagerstown IT(P21)(L14) ASTM C595 Blended Cement

Program Operator
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Declaration Number
NEPD-10947-10947-2

This declaration is based on Product Category Rules
EN 15804:2012 + A2:2019,
EN 16908:2017+A1:2022 ,
NPCR Part A:2021

Statements
The owner of the declaration shall be liable for the underlying information and evidence. The Norwegian EPD Foundation shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

Declared unit
1 t

General information on verification of EPD from EPD tools
Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD Global's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD Global, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD Global's General Programme Instructions for further information on EPD tools.

Verification of EPD tool
Charlotte Merlin, FORCE Technology
(no signature required)

Owner of the declaration
Amrize

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Manufacturer
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60631 Chicago, USA

Place of production
Hagerstown, USA

Management system
-

Issue date
02.02.2026

Valid to
01.02.2031

Year of study
2024

Comparability
EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not seen in a building context. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database (including primary and secondary data).

Development and verification of EPD
The declaration was created using the Emidat EPD tool v1.0, developed by Emidat GmbH. The EPD tool has been approved by EPD Global.

Developer of EPD: Tracy Hodges
Reviewer of company-specific input data and EPD: Rick Darnell

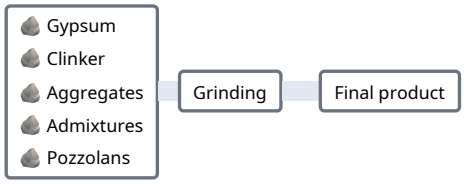
Approved

Håkon Hauan, The Norwegian EPD Foundation

Product

Product description

Cement is a hydraulic binder. Its main constituent is portland cement clinker, which is produced in a kiln through a process called calcination whereby a mixture of pulverized limestone, alumina, iron, silica, and other minerals are heated at high temperatures. Clinker is then ground with calcium sulfate, processing additions and/or limestone into a fine powder to produce portland cement. Blended cements can contain additional limestone, pozzolan and/or slag and are produced through intergrinding or other blending techniques.



Cement is the key ingredient in concrete. When mixed with water and aggregates such as sand and gravel, it forms a paste that binds the aggregates together to create concrete. Cement can also be mixed with sand and water to create mortar or grout, used as a bonding agent between bricks, stones, or concrete blocks in masonry construction. Cement can also be used to stabilize and improve the properties of soil in construction projects. Soil-cement mixtures are created by mixing cement with soil to increase its strength, durability, and load-bearing capacity. This technique is commonly used in road construction, building foundations, and slope stabilization.

Product specification

Name of ingredient	Share of total weight	Country of origin
Admixtures	0 - 5 %	USA
Aggregates	5 - 36 %	USA
Clinker	55 - 64 %	USA
Gypsum	5 - 36 %	Spain
Pozzolans	5 - 36 %	Greece

Technical data

	Unit	Value
Compressive strength (ASTM C109)	N / mm²	35
Density	kg / m³	1440

The product is produced according to the harmonized standard ASTM C595.

Market

USA

Recipients

B2B

LCA: Calculation rules

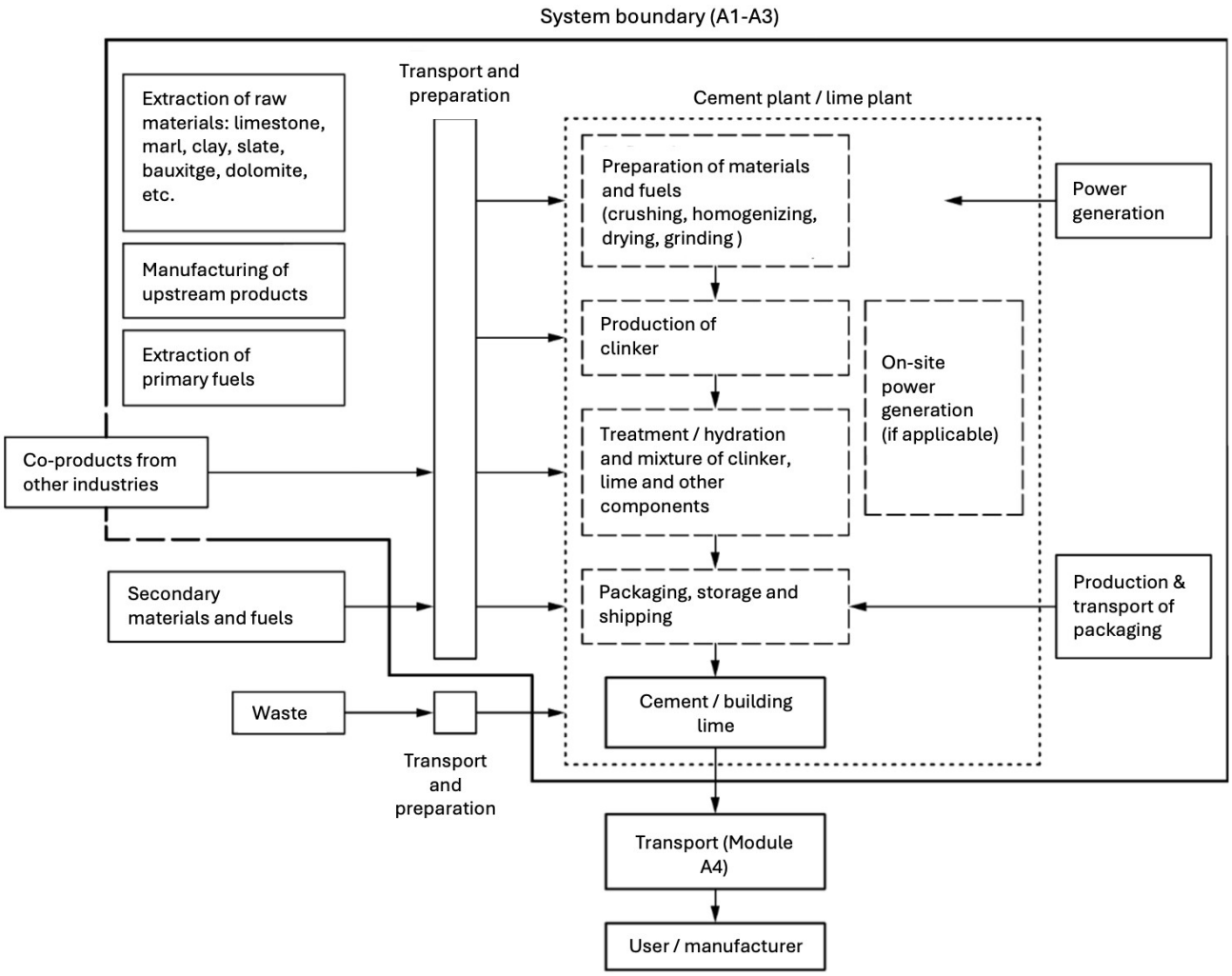
Declared unit

1 t

Reference service life

Not defined

System boundary



Data quality

The foreground data are based on extensive and detailed data collection at the production site of the manufacturer, covering key processes such as raw material sourcing, formulation, and manufacturing. These foreground data are fully linked with corresponding datasets from the background database (ecoinvent 3.10) or with EN15804+A2-compliant EPDs, ensuring consistency, reliability, and maintaining alignment with the latest industry standards.
The overall data representativeness is rated as good with an overall score of 4.00/5, in accordance with EN 15804+A2 Annex E guidance on data quality assessment, considering geographical, technical, and temporal representativeness.

System boundaries (X=included, MND=module not declared)

	Production			Installation		Use stage							End-of-Life				Next product system
	Raw material supply	Transport	Manufacturing	Transport	Installation Process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Demolition	Transport	Waste Processing	Disposal	Benefits and loads beyond the system boundary
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND		MND
Geography			US	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND		MND

For the geographies modeled in A1 and A2, refer to *Product specification*.

Type of EPD: Cradle to gate

Stage of Material Production and Construction

Module A1: Extraction and transport of raw materials and fuels, Clinker production, Production of secondary constituents, Production of additives, Production of consumables

Module A2: Transport of constituents, additives, and consumables

Module A3: Cement production, Preparation of cement for delivery

Cut-off criteria

No cut-offs were applied.

Allocation

Foreground inventory data (energy and fuels, ancillary materials, emissions and waste) was collected at the production-process level. Using the total output of the production process in 2024, these flows are allocated to the reference product based on mass.

LCA: Results

The following results are based on the location-based electricity approach applied to the foreground system (A3). Further details on electricity data are provided in the Additional Requirements section.

Core environmental impact indicators

Indicator	Unit	A1-A3
GWP-total	kg CO_2-eq.	6.70e+02 (6.48e+02)*
GWP-fossil	kg CO_2-eq.	6.70e+02 (6.49e+02)*
GWP-biogenic	kg CO_2-eq.	-4.49e-01 (-4.49e-01)*
GWP-luluc	kg CO_2-eq.	5.71e-02
ODP	kg CFC-11-Eq	1.53e-06
AP	mol H+-Eq	2.72e+00
EP-freshwater	kg P-Eq	9.13e-02
EP-marine	kg N-Eq	6.23e-01
EP-terrestrial	mol N-Eq	6.82e+00
POCP	kg NMVOC-Eq	1.90e+00
ADPE	kg Sb-Eq	5.38e-03
ADPF	MJ, net calorific value	4.05e+03
WDP	m^3 world Eq deprived	1.84e+01

GWP-total: Global Warming Potential - total**GWP-fossil**: Global warming potential - fossil**GWP-biogenic**: Global Warming Potential - biogenic**GWP-luluc**: Global Warming Potential - luluc**ODP**: Depletion potential of the stratospheric ozone layer**AP**: Acidification potential, Accumulated Exceedance**EP-freshwater**: Eutrophication potential - freshwater**EP-marine**: Eutrophication potential - marine**EP-terrestrial**: Eutrophication potential - terrestrial**POCP**: Photochemical Ozone Creation Potential**ADPE**: Abiotic depletion potential - non-fossil resources**ADPF**: Abiotic depletion potential - fossil resources**WDP**: Water (user) deprivation potential

* The first value is the gross value, it includes the impacts from all manufacturing activities. The value in brackets is the net value, it excludes the impact from the incineration of waste-derived fuels.

Additional indicators

Indicator	Unit	A1-A3
PM	disease incidence	ND
IRP	kBq U235-Eq	ND
ETP-fw	CTUe	ND
HTP-c	CTUh	ND
HTP-nc	CTUh	ND
SQP	dimensionless	ND

PM: Potential incidence of disease due to PM emissions**IRP**: Potential Human exposure efficiency relative to U235**ETP-fw**: Potential Comparative Toxic Unit for ecosystems**HTP-c**: Potential Comparative Toxic Unit for humans - cancer effects**HTP-nc**: Potential Comparative Toxic Unit for humans - non-cancer effects**SQP**: Potential Soil quality index

IRP: This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

ETP-fw, **HTP-c**, **HTP-nc** and **SQP**: The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with these indicators.

Use of resources

Indicator	Unit	A1-A3
PERE	MJ	6.29e+01
PERM	MJ	0.00e+00
PERT	MJ	6.29e+01
PENRE	MJ	4.04e+03
PENRM	MJ	1.69e+01
PENRT	MJ	4.05e+03
SM	kg	2.03e+01
RSF	MJ	6.25e+01
NRSF	MJ	1.19e+02
FW	m^3	1.73e+00

PERE: Primary energy resources - renewable: use as energy carrier**PERM**: Primary energy resources - renewable: used as raw materials**PERT**: Primary energy resources - renewable: total**PENRE**: Primary energy resources - non-renewable: use as energy carrier**PENRM**: Primary energy resources - non-renewable: used as raw materials**PENRT**: Primary energy resources - non-renewable: total**SM**: Use of secondary material**RSF**: Renewable secondary fuels**NRSF**: Non-renewable secondary fuels**FW**: Net use of fresh water

Waste flows

Indicator	Unit	A1-A3
HWD	kg	0.00e+00
NHWD	kg	2.07e-01
RWD	kg	0.00e+00

HWD: Hazardous waste disposed**NHWD**: Non hazardous waste disposed**RWD**: Radioactive waste disposed

Output flows

Indicator	Unit	A1-A3
CRU	kg	0.00e+00
MFR	kg	1.38e-01
MER	kg	0.00e+00
EEE	MJ	7.82e-02
EET	MJ	1.60e-01

CRU: Components for re-use**MFR**: Materials for recycling**MER**: Materials for energy recovery**EEE**: Exported electrical energy**EET**: Exported thermal energy

Name	Value	Unit
Biogenic carbon content in product	0.00e+00	kg C
Biogenic carbon content in accompanying packaging	0.00e+00	kg C

Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

Electricity consumption in the manufacturing phase is composed from the source below. This EPD follows the location-based approach.

Electricity	Quantity [kWh]	Emission Factor [kg CO_2e/kWh]
market for electricity, high voltage (US-RFC)	74.05	0.50

Dangerous substances

The product contains no hazardous substances given by the REACH Candidate List or the Norwegian Priority List.

Additional environmental information

Additional environmental impact indicators required in NPCR Part A for construction products

Indicator	Unit	A1-A3
GWP-IOBC	kg CO_2-eq.	ND

GWP-IOBC: Global Warming Potential - Instantaneous oxidation of biogenic carbon

Environmental impacts according to the TRACI v2.1 methodology

Indicator	Unit	A1-A3
GWP100	kg CO_2-eq.	6.66e+02
ODP	kg CFC-11-Eq	1.65e-06
AP	kg SO2-Eq	2.28e+00
EP	kg N-Eq	8.03e-01
SFP	kg O3-Eq	3.87e+01

GWP100: Global Warming Potential**ODP**: Depletion potential of the stratospheric ozone layer**AP**: Acidification potential, Accumulated Exceedance**EP**: Eutrophication Potential**SFP**: Smog Formation Potental

Bibliography

CEN/TR 15941:2010	Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
EN 15942:2022-04	Sustainability of construction works - Environmental product declarations - Communication format business-to-business
ISO 14025:2011-10	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14040:2021-02	Environmental management - Life cycle assessment - Principles and framework
ISO 14044:2021-02	Environmental management - Life cycle assessment - Requirements and guidelines
EF 3.1	Environmental Footprint (EF) Life Cycle Impact Assessment method - Characterisation Factors version 3.1, European Commission, Joint Research Centre (JRC)
ecoinvent 3.10	ecoinvent, Zurich, Switzerland, database version 3.10
EN 16908:2017+A1:2022	Cement and building lime – Environmental product declarations – Product category rules complementary to EN 15804.
NPCR Part A:2021	Construction products and services, Version 2.0. Issue date: 24.03.2021; validity extended to 24.03.2026.

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