

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

Mapelastic Zero



The Norwegian EPD Foundation

Owner of the declaration:

Mapei

Product:

Mapelastic Zero

Declared unit:

1 kg

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR

NPCR 009:2021 Part B for Technical - Chemical products for building and construction industry

Program operator:

The Norwegian EPD Foundation

Declaration number:

NEPD-9032-9032-1

Registration number:

NEPD-9032-9032-1

Issue date:

05.08.2025

Valid to:

05.08.2030

EPD software:

LCAno EPD generator ID: 1136587

General information

Product

Mapelastic Zero

Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-norge.no

Declaration number:

NEPD-9032-9032-1

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 009:2021 Part B for Technical - Chemical products for building
and construction industry

Statement of liability:

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

Declared unit:

1 kg Mapelastic Zero

Declared unit with option:

A1-A3, A4, A5, C1, C2, C3, C4, D

Functional unit:

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-Norway'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-Norway,
and iii) the process is reviewed annually by an independent third
party verifier. See Appendix G of EPD-Norway's General Programme
Instructions for further information on EPD tools

Verification of EPD tool:

Independent third party verification of the EPD tool, background data
and test-EPD in accordance with EPDNorway's procedures and
guidelines for verification and approval of EPD tools. NEPDT73

Third party verifier:

Linda Høbye, Life Cycle Assessment Consulting

(no signature required)

Owner of the declaration:

Mapei
Contact person: Environmental sustainability
Phone: + 39 02 37673036
e-mail: corporate.sustainability@mapei.it

Manufacturer:

Mapei AS

Place of production:

Mapei AS
Vallsetvegen 6
2120 Sagstua, Norway

Management system:

ISO 9001, ISO 14001 and ISO 45001

Organisation no:

911 103 079

Issue date:

05.08.2025

Valid to:

05.08.2030

Year of study:

2024

Comparability:

EPD of construction products may not be comparable if they not
comply with EN 15804 and seen in a building context.

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03,
developed by LCA.no. The EPD tool is integrated in the company's
management system, and has been approved by EPD Norway.
NEPDT105

Developer of EPD: Laura Caretoni

Reviewer of company-specific input data and EPD: Marco Mazzetti

Approved:



Håkon Hauan, CEO EPD-Norge

Product

Product description:

Mapelastico Zero is a two-component mortar made of cementitious binders, fine-grained selected aggregates, special additives and synthetic polymers in water dispersion. When the two components are mixed together, a free-flowing mix is obtained, which is easy to apply also on vertical surfaces in layer up to 2 mm thick per coat. Due to its high content of quality synthetic resins, the hardened layer of Mapelastico Zero maintains its flexibility under all environmental conditions, and is resistant to chemical attacks of de-icing salts, sulphates, chlorides and carbon dioxide. Mapelastico Zero also has excellent adhesion on all concrete, brickworks, ceramic and marble surfaces, as long as they are sound and sufficiently clean.

Mapelastico Zero is available in:

- 32 kg unit: Component A: 24 kg bags + Component B: 8 kg jerrycans. Upon request, component B can also be supplied in 1,000 kg IBC and component A in 24 kg bags in light color.
- 16 kg unit: two 6 kg bags and one 4 kg jerrycan.

For further information see the Technical Data Sheet on www.mapei.com/no website.

Product specification

Materials	kg	%
Additives	0,001	0,1002
Biocide	0,0001	0,01002
Cement	0,2063	20,67
Dispersions	0,2315	23,19
Fibre	0,0006	0,0601
Filler	0,5406	54,15
Water	0,0182	1,82
Total	0,9983	100,00

Packaging	kg	%
Packaging	0,04	100,00
Total incl. packaging	1,04	100,00

Technical data:

Mapelastico Zero complies with the principles defined in EN 1504-9 ("Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and evaluation of conformity. General principles for the use of products and systems") and the minimum requirements of EN 1504-2 coating (C) according to principles PI, MC and IR ("Surface protection systems for concrete").

Market:

Nordic & Baltic countries

Reference service life, product

The reference service life of the product is similar to the service life of the building.

Reference service life, building

60 years.

LCA: Calculation rules

Declared unit:

1 kg Mapelastico Zero

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

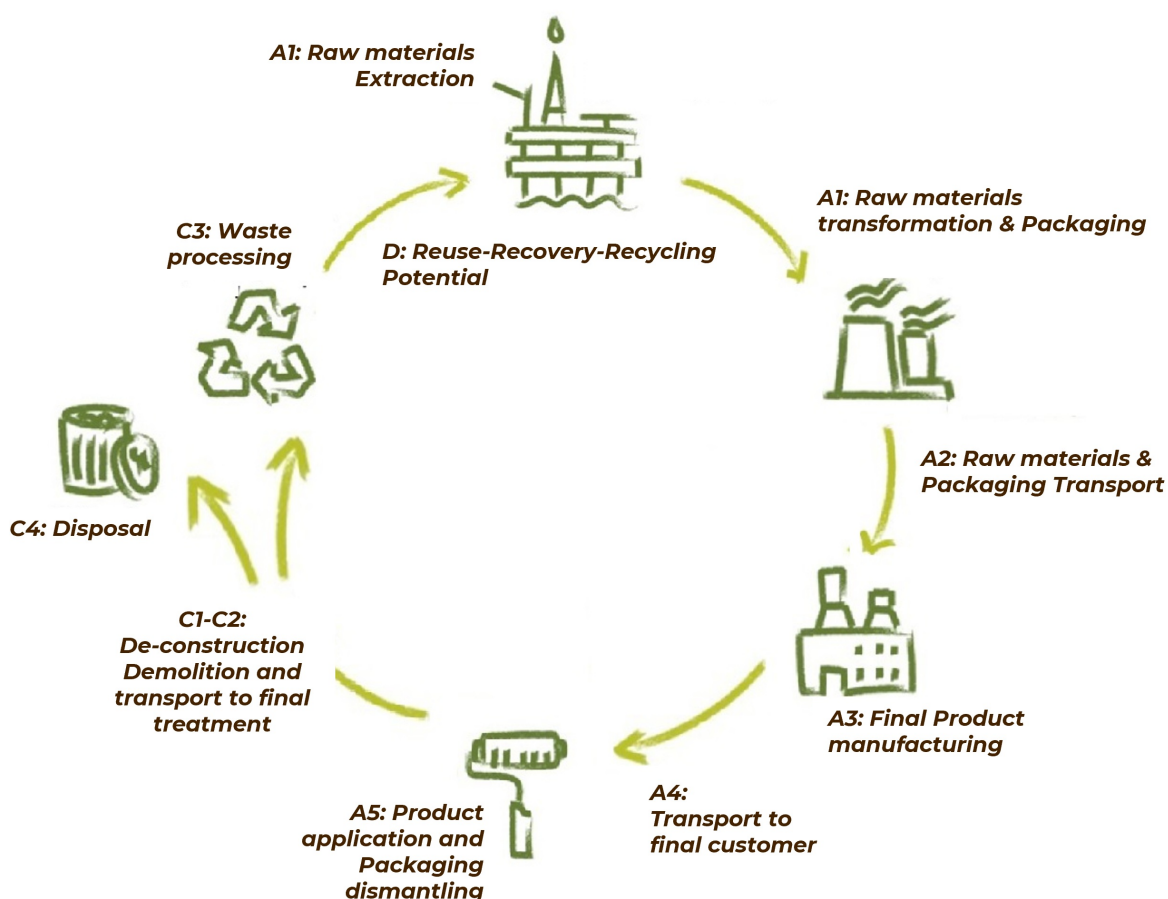
Materials	Source	Data quality	Year
Additives	ecoinvent 3.6	Database	2019
Additives	Supplier	EPD	2021
Biocide	ecoinvent 3.6	Database	2019
Cement	Supplier	EPD	2024
Dispersions	supplier	LCA study (based on EF 3.0)	2019
Fibre	ecoinvent 3.6	Database	2019
Filler	ecoinvent 3.6	Database	2019
Filler	Supplier	EPD	2021
Packaging	ecoinvent 3.6	Database	2019
Water	ecoinvent 3.6	Database	2019

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

Product stage			Construction installation stage		Use stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

System boundary:

The approach is "cradle to gate" (A1–A3) with modules A4 - A5, C1–C4 and module D. The production process starts from raw materials, that are purchased from external and inter-company suppliers and stored in the plant. Bulk raw materials are stored in specific silos and added automatically in the production mixer, according to the formula of the product. Other raw materials, supplied in bags, big bags or tanks, are stored in the warehouse and added automatically or manually in the mixer. The production is a discontinuous process, in which all the components are mechanically mixed in batches. The semi-finished product is then packaged, put on wooden pallets and stored in the finished products warehouse. The quality of final products is controlled before the sale.



Additional technical information:

LCA: Scenarios and additional technical information














The following information describe the scenarios in the different modules of the EPD.

The results of stage A4 in the table of this EPD refer to domestic transport set by the PCR. This product may also be delivered to the countries in the table "Additional A4 information". To calculate the GWP of transportation to these countries, the result GWPotot of module A4 from this EPD shall be multiplied by the multiplication factors below. The installation phase (A5) considers the energy for the mixing and manual application of the product. The packaging is collected and sent to treatment. The demolition phase (C1) includes the electricity for demolition. The transport of waste is carried out by truck over 100 km (C2). It is assumed that 30% of the product is disposed into landfill and 70% is collected and recycled.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km) - RER	36,7 %	300	0,043	l/tkm	12,90
Transport from production place to user (A4)	Unit	Value			
Oslo, Norway (truck 90km)	multiplication factor * GWPotot (A4)	0,3			
Kristiansand, Norway (truck 400km)	multiplication factor * GWPotot (A4)	1,33			
Stavanger, Norway (truck 640km)	multiplication factor * GWPotot (A4)	2,13			
Bergen, Norway (truck 530km)	multiplication factor * GWPotot (A4)	1,77			
Trondheim, Norway (truck 420km)	multiplication factor * GWPotot (A4)	1,4			
Tromsø, Norway (truck 1700km)	multiplication factor * GWPotot (A4)	5,67			
Stockholm, Sweden (truck 500km)	multiplication factor * GWPotot (A4)	1,67			
Helsinki, Finland (truck 1200km, ferry 100km)	multiplication factor * GWPotot (A4)	4,23			
Copenhagen, Denmark (truck 680km)	multiplication factor * GWPotot (A4)	2,27			
Assembly (A5)	Unit	Value			
Electricity, European average (kWh)	kWh	0,002			
Waste, packaging, pallet, EUR wooden pallet, single use, to average treatment (kg)	kg	0,027			
Waste, packaging, paper bag, to average treatment (kg)	kg	0,0027			
De-construction demolition (C1)	Unit	Value			
Electricity, European average (kWh)	kWh	0,005			
Demolition of building per kg of product (kg)	kg	1,00			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 7.5-16 tonnes, EURO 6 (km) - RER	35,4 %	100	0,056	l/tkm	5,60
Waste processing (C3)	Unit	Value			
Waste treatment of product after demolition (kg)	kg	0,7			
Disposal (C4)	Unit	Value			
Disposal of product in landfill (kg)	kg	0,3			
Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of primary aggregates with crushed recycled products (kg)	kg	0,7			

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact										
Indicator		Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	GWP-total	kg CO ₂ -eq	4,99E-01	5,11E-02	4,73E-02	6,14E-03	2,23E-02	5,04E-04	1,29E-03	-1,64E-03
	GWP-fossil	kg CO ₂ -eq	5,43E-01	5,11E-02	1,62E-03	6,12E-03	2,23E-02	4,97E-04	1,28E-03	-1,60E-03
	GWP-biogenic	kg CO ₂ -eq	-4,46E-02	2,11E-05	4,57E-02	1,57E-05	1,03E-05	4,29E-06	1,09E-06	-3,20E-05
	GWP-luluc	kg CO ₂ -eq	1,82E-04	1,82E-05	2,17E-06	5,25E-06	9,65E-06	6,88E-07	2,52E-07	-1,08E-06
	ODP	kg CFC11 -eq	4,91E-08	1,16E-08	1,97E-10	1,04E-09	4,90E-09	9,80E-11	6,26E-10	-2,92E-10
	AP	mol H+ -eq	2,38E-03	1,47E-04	1,10E-05	5,42E-05	6,41E-05	4,02E-06	1,25E-05	-1,44E-05
	EP-FreshWater	kg P -eq	1,42E-05	4,08E-07	9,96E-08	2,41E-07	2,05E-07	3,14E-08	9,59E-09	-4,26E-08
	EP-Marine	kg N -eq	3,76E-04	2,90E-05	3,20E-06	2,00E-05	1,21E-05	1,18E-06	4,70E-06	-5,00E-06
	EP-Terrestrial	mol N -eq	4,21E-03	3,25E-04	3,53E-05	2,19E-04	1,36E-04	1,36E-05	5,18E-05	-5,88E-05
	POCP	kg NMVOC -eq	1,85E-03	1,24E-04	9,08E-06	6,07E-05	5,21E-05	3,64E-06	1,48E-05	-1,55E-05
	ADP-minerals&metals ¹	kg Sb-eq	3,05E-06	1,41E-06	1,91E-08	2,17E-08	8,05E-07	6,31E-09	1,14E-08	-1,42E-07
	ADP-fossil ¹	MJ	1,13E+01	7,72E-01	2,66E-02	9,88E-02	3,33E-01	1,54E-02	4,15E-02	-2,71E-02
	WDP ¹	m ³	7,81E+00	7,47E-01	2,77E-01	6,69E-01	3,99E-01	1,70E+00	8,73E-02	-1,27E+00

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator







Remarks to environmental impacts

This EPD might use cement EPDs as input in which the Net approach* has been applied. See the Data Quality table on page 3.

*The Net approach excludes the emissions from waste incineration used to produce heat required in the cement manufacturing process.

Total CO₂ emissions measured throughout the entire life cycle of the product have been offset through the acquisition of certified carbon credits in support of forestry protection projects. More information available at: www.mapei.it

Additional environmental impact indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
 PM	Disease incidence	9,73E-09	3,13E-09	8,70E-11	5,10E-09	1,25E-09	6,40E-11	2,67E-10	-3,07E-10
 IRP ²	kgBq U235 -eq	9,26E-03	3,38E-03	1,87E-04	6,23E-04	1,46E-03	2,59E-04	1,80E-04	-2,49E-04
 ETP-fw ¹	CTUe	2,58E+00	5,72E-01	2,28E-02	6,07E-02	2,60E-01	1,09E-02	2,05E-02	-2,79E-02
 HTP-c ¹	CTUh	9,80E-11	0,00E+00	1,00E-12	2,00E-12	0,00E+00	1,00E-12	1,00E-12	-1,00E-12
 HTP-nc ¹	CTUh	2,02E-09	6,25E-10	6,50E-11	5,80E-11	3,13E-10	1,00E-11	1,20E-11	-3,40E-11
 SQP ¹	dimensionless	6,52E+00	5,40E-01	9,42E-03	1,73E-02	1,98E-01	8,73E-03	1,51E-01	6,15E-02

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed




1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator
2. 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.

Resource use										
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
 PERE	MJ	8,51E-01	1,11E-02	3,58E-03	8,78E-03	5,67E-03	7,95E-03	6,38E-04	-6,35E-03	
 PERM	MJ	4,13E-01	0,00E+00	-4,13E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
 PERT	MJ	1,26E+00	1,11E-02	-4,09E-01	8,78E-03	5,67E-03	7,95E-03	6,38E-04	-6,35E-03	
 PENRE	MJ	2,28E+00	7,72E-01	2,67E-02	9,89E-02	3,33E-01	1,54E-02	4,15E-02	-2,86E-02	
 PENRM	MJ	2,31E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
 PENRT	MJ	2,29E+00	7,72E-01	2,67E-02	9,89E-02	3,33E-01	1,54E-02	4,15E-02	-2,86E-02	
 SM	kg	1,42E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
 RSF	MJ	1,73E-01	3,96E-04	2,53E-04	6,18E-04	2,05E-04	0,00E+00	1,32E-05	-1,30E-04	
 NRSF	MJ	2,95E-01	1,41E-03	1,18E-04	1,47E-04	7,44E-04	0,00E+00	3,79E-05	-1,33E-04	
 FW	m ³	4,46E-03	8,26E-05	2,14E-05	4,00E-05	3,97E-05	2,64E-05	4,94E-05	-9,96E-04	

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

*Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"






*INA Indicator Not Assessed

End of life - Waste										
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
 HWD	kg	1,74E-02	3,98E-05	2,64E-06	8,21E-06	1,85E-05	1,54E-06	0,00E+00	-6,54E-06	
 NHWD	kg	6,05E-02	3,76E-02	2,98E-02	2,13E-04	1,31E-02	4,87E-05	3,00E-01	-1,98E-04	
 RWD	kg	1,07E-05	5,26E-06	1,25E-07	6,95E-07	2,25E-06	1,63E-07	0,00E+00	-2,15E-07	

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

*Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3} = 0,009$

*INA Indicator Not Assessed

End of life - Output flow										
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
 CRU	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	
 MFR	kg	5,11E-03	0,00E+00	2,51E-03	0,00E+00	0,00E+00	7,00E-01	0,00E+00	0,00E+00	
 MER	kg	1,15E-02	0,00E+00	2,70E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
 EEE	MJ	3,31E-03	0,00E+00	1,88E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
 EET	MJ	5,01E-02	0,00E+00	2,84E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	

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

*Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3} = 0,009$

*INA Indicator Not Assessed

Biogenic Carbon Content		
Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in accompanying packaging	kg C	1,24E-02

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional requirements

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

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Source	Amount	Unit
Electricity, Norway (kWh)	ecoinvent 3.6	24,33	g CO ₂ -eq/kWh

Dangerous substances

The product contains substances given by the REACH Candidate list that are less than 0,1 % by weight.

Indoor environment

The product is certified with an EC1plus class according to GEV-EMICODE.






Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWPIOBC	kg CO ₂ -eq	5,41E-01	5,11E-02	1,69E-03	6,30E-03	2,23E-02	4,98E-04	1,29E-03	-1,71E-03

GWPIOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Bibliography

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 ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
 EN 15804:2012+A2:2019 Environmental product declaration - Core rules for the product category of construction products.
 ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products.
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 Ruttenborg, M. and Iversen, O.M.K., (2023) EPD generator for NPCR009:2021, Part B for Technical - Chemical products, Background information for EPD generator application and LCA data, LCA.no report number: 05.23.
 NPCR Part A: Construction products and services. Ver. 2.0, 24.03.2021 EPD Norway.
 NPCR 009 Part B for Technical - Chemical products for building and construction industry, Ver. 3.0, 06.10.2021, EPD Norway.
 "European directive 2008/98/EC.
 EN 1504-9 "Products and systems for the protection and repair of concrete structures: definitions, requirements, quality control and evaluation of conformity. General principles for the use of products and systems" .
 EN 1504-2 "Surface protection systems for concrete".

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