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Environmental Product Declaration

In accordance with ISO14025:2006 and EN15804:2012+A2:2019

Mill-Finish & Coil Coated Rolled Aluminium ProductsRecycling Friendly Alloys (RFA)

Photo: Speira AS

speira

Owner of the declaration:
Speira AS Holmestrand Rolling Mill, Weidemanns gate 8, 3080-Holmestrand, Norway

Product name:
Speira Holmestrand Rolled Aluminium Products: recycling friendly alloys

Declared unit:
1 kg Speira Holmestrand Rolled Aluminium Products: recycling friendly alloys, produced at Speira AS Holmestrand Rolling Mill

Product category /PCR:
NPCR PART A: Construction products and services, v2.0 + NPCR 013:2021 Part B for steel and aluminium construction products v4.0

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-15246-18659

Registration number:
NEPD-15246-18659

Issue date: 25.03.2026

Valid to: 25.03.2031

General information

Product:
Speira AS, Holmestrand Rolled Aluminium
Products: recycling friendly alloys

Program operator:
EPD-Global
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Declaration number:
NEPD-15246-18659

This declaration is based on Product Category Rules:
CEN Standard EN 15804 serves as core PCR; NPCR PART A: Construction products and services, v2.0 + NPCR 013:2021 Part B for steel and aluminium construction products v4.0

Statement of liability:
The owner of the declaration shall be liable for the underlying information and evidence. EPD-Global shall not be liable with respect to manufacturer, life cycle assessment data and evidence.

Declared unit:
1 kg Speira Holmestrand Rolled Aluminium Products: recycling friendly alloys

Declared unit with option:
Includes modules: A1-A4, C1-C4, and D

Verification:
Independent verification of the declaration and data, according to ISO14025:2010

internal ☐ external ☒

Gaylord K. Booro
Independent verifier approved by EPD-Global

Owner of the declaration:
Speira AS Holmestrand Rolling Mill
Contact person: Eva Maria Bunkholt
Phone: -
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Manufacturer:
Speira AS Holmestrand Rolling Mill
Weidemanns gate 8, 3080-Holmestrand, Norway

Place of production:
Holmestrand, Norway

Management system:
ISO 14001, ISO 9001, ISO 45001

Organisation no:
975 934 578

Issue date:
25.03.2026

Valid to:
25.03.2031

Year of study:
2025

Comparability:
EPD of construction products may not be able to compare if they do not comply with EN 15804 and are seen in a building context.

The EPD has been worked out by:
John Baxter, Lina Plataniti, NORSUS AS

Approved

Manager of EPD-Global

Product

Product description:

This EPD covers aluminium rolled products produced at Speira AS, Holmestrand Rolling Mill.

Speira is a European rolling and recycling company with customers around the globe. Speira's operations are built on more than a century of aluminium rolling and recycling experience and technical expertise for aluminium products and solutions.

With over 100 years in aluminium production and more than 30 years specializing in recycling of aluminium, the rolling mill in Holmestrand is the most sustainable rolling mill in Europe, the biggest recycler in Norway and innovation hub for recycling in Speira.

Our long and unique competences in recycling of aluminium allow us to use a large variety of scrap and turn it into new, high quality aluminium products. Three decades of close collaboration with scrap suppliers have created a strong network of partners for sourcing different types of scrap.

Examples of market segments where our products can be used: Building and Construction, Electrical Equipment, Automotive and Transportation, Components for Electrical Vehicle Battery Systems, Consumer Goods, Domestic Appliances, Industrial Equipment. The average lifetime of the aluminium depends on the final product usage. Application in buildings like Facades, Roofing, Ceiling etc have an average lifetime of ~40 - 60 years, whereas canning products have a lifetime of a couple of months.

Recycling Friendly Alloys (RFA)

Our Recycling Friendly Alloys (RFA) in the 3000-series have been developed by Speira Holmestrand since the early 1990's. We offer flat rolled products in three alloys with an average of approximately 35% external scrap: EN AW-3005; EN AW-3005A and EN AW-3105B. Our RFA alloys are used in a wide range of industries, from building and architecture to license plates and acoustic sound barriers.

Ultimately, our primary goal is the reduction of carbon emissions. The methods we adopt, grounded in established standards, to quantify and convey the advantages of aluminium recycling are essential tools in our collective mission to lower carbon footprints. For a deeper understanding you can read our whitepaper by following the link: https://www2.speira.com/whitepaper-recycling

Product specification:

Typical content of the Aluminium Products can be found in the table below. The input for LCA calculations is a conservative average estimation based on data over the last years. These alloy groups offer, depending on their application, good formability, strength for facades, roofing, guttering or other applications.

Materials	Value	%
Primary metal from external sources	0.130	13.0%
Scrap from external sources	0.350	35.0%
Scrap from internal sources	0.514	51.4%
Alloying elements	0.006	0.6%

Technical data:

All products are produced according to European standards specific to aluminium strips and sheets or according to customer requirements. Applicable standards are EN 573-3, EN 485-4, EN 1396, EN 683-2, EN 546-2; EN 54l.

Market:

Global

Reference service life, product:

Depends on product application, but the material itself has an infinite lifetime.

Additional technical information

Material properties vary according to the specific chemical composition and thermo-mechanical processing. Alloy and temper should be specified according to the relevant applicable standards, as mentioned above. Specific customer requirements are to be agreed upon separately.

LCA: Calculation rules

Declared unit:

1 kg of mill finish and coil coated rolled aluminium products (recycling friendly alloys with an average of 35 % external scrap) from Speira AS, Holmenstrand.

The EPD also covers modules C1-C4 and D. The product is produced at Speira AS, Holmestrand Rolling Mill. The results are based on production in the period 2024.

Cut-off criteria:

All major raw materials and all the essential energy is included. Detailed production process for raw materials and both renewable and non-renewable energy flows that are included with very small amounts (<1%) are not included.

When applying the cut-off criteria for this EPD, mass and energy flows have been gathered for the entire production system and all processes in the foreground system including A1 to A4. Cut-off has only been applied to module C1 where it is assumed that renewable and non-renewable energy and material use is less than 1% of total use of materials, that none of these are hazardous and does not contribute to significant environmental impacts. The total exclusion of mass and energy flows is well below 5% per module and for the system in total.

Allocation:

The allocation is made in accordance with the provisions of EN 15804+A2. Infrastructure of the plant, incoming energy, water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials are allocated to the main product in which the material was used. The recycling process and transportation of the material are allocated to this analysis.

Speira applies cut-off modelling for scrap with a history outside Speira. These amounts of aluminium are calculated without any historic emissions from previous use cycles. For a full life cycle picture of the upcoming life cycles a similar approach shall be applied. Credits for scrap generated during construction phase must not be allocated to our aluminium products.

Data quality:

The data quality for the foreground system data is very good with data taken for specific relevant castings in 2024 and 2025 for all inputs and outputs from the plant. For the main material inputs (primary metal, internal and external scrap) the composition above reflects a conservative average for products in the 35% external scrap range – compositions of products in that range vary a little in practice, but the EPD covers all of those. Data for the background system are mainly from ecoinvent 3.11 (Wernet et al. 2016 and ecoinvent 2024) as implemented in the software SimaPro, version 10.2 (Pré 2025). ecoinvent 3.11 includes broader spectrum of data and sectoral updates in – among others – metals, energy, waste management and recycling. Some data for background

systems have also been collected and implemented in the model as part of the project.

To estimate the composition for the EPDs the material input for 2024 and 2025 was taken into account. From our internal overview, we see that the input data have been quite stable over the last 5 years, with small variation.

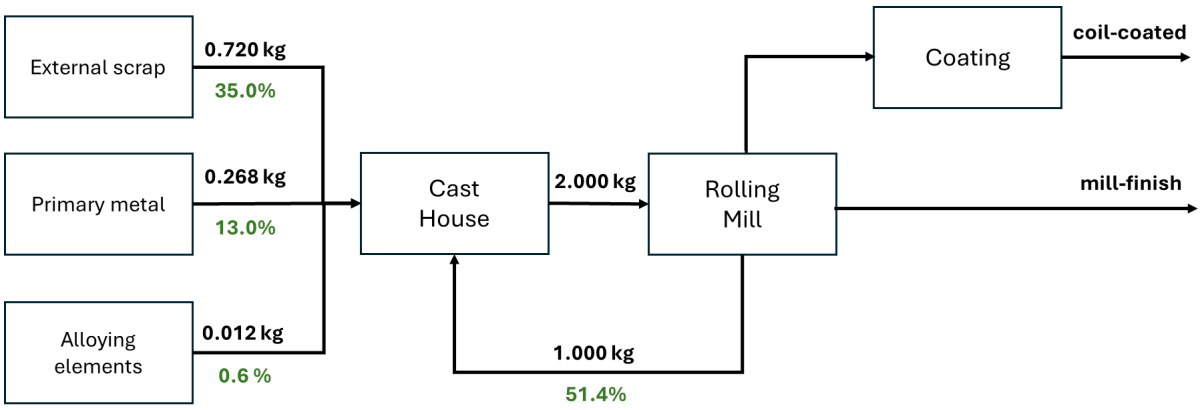
System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Assembly stage		Use stage							End of life stage				Benefits & loads beyond system boundary
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	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

System boundary:

Cradle to gate with options. The following stages have been declared: A1-A4, C1-C4, and D. Further specified in the flow sheets shown above. Sub module A5 and all modules under B are not declared in this EPD owing to a wide range of applications making an average scenario nonsensical.

Module D covers the potential benefits from recycling of 901 grams of rolled aluminium product after end of useful life. Module D covers all necessary processes from C3 until the aluminium is back on the market and can be compared to the environmental performance of an average market rolled aluminium product. The module is further specified in the section LCA: Scenarios and additional technical information.



LCA: Scenarios and additional technical information

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

Transport from production place to assembly/user (A4)

Transport from production place to assembly/user (A4)	Capacity utilisation (incl. return) [%]	Distance [km]	Fuel/Energy consumption (l/tkm)	Unit	Value
Truck Lorry, >32 metric tons, Euro V	53	1 119	2.43E-02	l/t	6,07E-01
Boat Cargo ship, 5000 tons	80	169	1.29E-02	l/t	6.00E-03

The products from Speira AS, Holmestrand Rolling Mill are transported predominantly from Holmestrand in Norway to a European sea port and thereafter by truck to the final consumer.

End of Life (C1, C3, C4)

	Unit	Value
Recycling	Kg	0.901
Energy recovery	Kg	0.062
To landfill	Kg	0.037

The aluminium supplied goes predominantly to four different markets with different average end-of-life collection rates (96% for construction, 95% for automotive, 65% for packaging, and 75% for household products). Overall, this means that 926 grams of product is collected, with 37 grams taken to go to landfill and 37 grams to energy recovery. With a further loss of 2.7% of the stream going to recycling (25 grams, to energy recovery), it means that 901 grams of material is recycled per kilo of product at end-of-life.

Transport to waste processing (C2)

Transport from production place to assembly/user (C2)	Capacity utilisation (incl. return) [%]	Distance [km]	Fuel/Energy consumption (l/tkm)	Unit	Value
Truck Lorry, >32 metric tons, Euro V	53	269	2.43E-02	l/t	6,07E-01
Boat Cargo ship, 5000 tons	80	471	1.29E-02	l/t	6.00E-03

Transport back to waste processing after end-of-useful life is modelled based on real distances to facilities and data from ecoinvent (ecoinvent 2016/2024) as shown below.

Benefits and loads beyond the system boundaries (D)

Benefits and loads beyond the system boundaries (D)	Unit	Value
Aluminium rolled product to material recycling	g	901
Aluminium rolled product recycled and substituting primary aluminium	g	209

Aluminium collected and recycled is assumed to replace an average aluminium product in Europe consisting of 40% recycled and 60% primary aluminium. The flow of material being sent to recycling and the actual amount of primary aluminium being substituted is shown below. The amount of substituted primary aluminium depends on the collection and recycling rates, also the primary aluminium content of the material reaching recycling. The initial content of secondary material is included in the calculations for module D.

LCA: Results

All results are calculated with the use of SimaPro v.10.2 (2025) with characterization factors (based on EF 3.1) and impact methods according to ISO 15804+A2:2019. The methods are developed by NORSUS, using the EPD Norway template, and using the ecoinvent 'cut-off by classification' as background database. Results are calculated using the cut-off approach to end-of-life allocation.

The result tables are given using a location based approach for foreground system (A3). More information about transparent reporting of electricity in the additional requirements section.

Core environmental impact indicators

Indicator	Unit	A1-A3 (coated)	A1-A3 (uncoated)	A4	C1*	C2	C3	C4	D
GWP - total	kg CO2 eq	3.22E+00	3.08E+00	1.28E-01	0	5.85E-02	2.43E-01	6.53E-04	-3.09E+00
GWP - fossil	kg CO2 eq	3.21E+00	3.07E+00	1.28E-01	0	5.84E-02	2.41E-01	6.32E-04	-3.03E+00

GWP - biogenic	kg CO2 eq	5.65E-03	5.02E-03	1.29E-04	0	3.09E-05	2.62E-03	2.11E-05	-7.39E-03
GWP - luluc	kg CO2 eq	3.46E-03	3.45E-03	5.38E-05	0	2.50E-05	1.08E-04	1.58E-07	-5.61E-02
ODP	kg CFC11 eq	8.54E-08	7.04E-08	2.73E-09	0	9.10E-10	2.21E-09	1.62E-11	-3.31E-08
AP	molc H+ eq	1.74E-02	1.68E-02	5.01E-04	0	3.52E-04	7.89E-04	3.36E-06	-1.58E-02
EP-freshwater	kg P eq	3.24E-05	3.09E-05	1.19E-06	0	6.41E-07	7.19E-06	6.18E-09	-9.88E-05
EP -marine	kg N eq	2.93E-03	2.82E-03	1.66E-04	0	1.06E-04	9.70E-05	1.46E-06	-2.49E-03
EP - terrestrial	molc N eq	3.25E-02	3.15E-02	1.83E-03	0	1.17E-03	1.17E-03	1.46E-05	-2.68E-02
POCP	kg NMVOC eq	1.26E-02	1.21E-02	7.28E-04	0	3.91E-04	3.80E-04	4.98E-06	-1.06E-02
ADP-M&M[2]	kg Sb-Eq	7.54E-06	7.12E-06	3.57E-07	0	1.79E-07	5.91E-06	1.69E-09	8.22E-05
ADP-fossil[2]	MJ	4.32E+01	4.00E+01	1.86E+00	0	8.12E-01	1.46E+00	1.28E-02	-3.63E+01
WDP[2]	m^3	2.40E-01	3.69E-02	8.96E-03	0	3.49E-03	1.56E-02	-1.33E-04	-2.03E-01

GWP-total: *Global Warming Potential;* ***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; See "additional Norwegian requirements" for indicator given as PO4 eq.* ***EP-marine:*** *Eutrophication potential, fraction of nutrients reaching freshwater end compartment;* ***EP-terrestrial:*** *Eutrophication potential, Accumulated Exceedance;* ***POCP****: Formation potential of tropospheric ozone;* ***ADP-M&M****: Abiotic depletion potential for non-fossil resources (minerals and metals);* ***ADP-fossil:*** *Abiotic depletion potential for fossil resources;* ***WDP:*** *Water deprivation potential, deprivation weighted water consumption*

Reading example: 9.0 E-03 = $9.0*10^{-3} = 9.0*\frac{1}{10}*\frac{1}{10}*\frac{1}{10}=0.009$ 9.0 E+03 = $9.0*10^{3} = 9.0*10*10*10=9000$

* C1 is assumed negligible, and the value is therefore set equal to zero. To show the uncertainty for this assumption, no decimals are used.

Additional environmental impact indicators

Indicator	Unit	A1-A3 (coated)	A1-A3 (uncoated)	A4	C1	C2	C3	C4	D
PM	Disease incidence	2.01E-07	1.92E-07	1.26E-08	0	4.40E-09	1.41E-08	7.21E-11	-2.38E-07
IRP[1]	kBq U235 eq.	6.50E-02	2.62E-02	1.13E-03	0	3.21E-04	2.28E-03	3.46E-05	-1.20E-01
ETP-fw[2]	CTUe	7.44E+00	4.53E+00	2.31E-01	0	1.30E-01	9.94E-01	2.39E+00	1.61E+00
HTP-c[2]	CTUh	2.01E-09	1.92E-09	2.18E-11	0	9.91E-12	7.93E-11	2.28E-13	-3.71E-09
HTP-nc[2]	CTUh	2.17E-08	2.00E-08	1.17E-09	0	4.77E-10	5.18E-09	2.81E-11	4.02E-08
SQP[2]	Dimensionless	6.07E+00	5.79E+00	1.81E+00	0	4.45E-01	1.42E+00	2.22E-02	-1.05E-01

PM: *Particulate matter emissions;* ***IRP:*** *Ionising radiation, human health;* ***ETP-fw:*** *Ecotoxicity (freshwater);* ***ETP-c:*** *Human toxicity, cancer effects;* ***HTP-nc:*** *Human toxicity, non-cancer effects;* ***SQP:*** *Land use related impacts / soil quality*

[1] 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.

[2] 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.

Resource use

Parameter	Unit	A1-A3 (coated)	A1-A3 (uncoated)	A4	C1	C2	C3	C4	D
PERE	MJ	1.55E+01	1.54E+01	4.05E-02	0	1.29E-02	2.15E-01	1.25E-03	-1.32E+01
PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	1.55E+01	1.54E+01	4.05E-02	0	1.29E-02	2.15E-01	1.25E-03	-1.32E+01
PENRE	MJ	4.32E+01	4.00E+01	1.86E+00	0	8.12E-01	1.46E+00	1.28E-02	-3.62E+01
PENRM	MJ	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ	4.32E+01	4.00E+01	1.86E+00	0	8.12E-01	1.46E+00	1.28E-02	-3.62E+01
SM	kg	7.50E-01	7.50E-01	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	1.14E-01	1.09E-01	2.93E-04	0	1.09E-04	7.51E-04	-1.60E-04	-6.38E-02

PERE *Renewable primary energy resources used as energy carrier;* ***PERM*** *Renewable primary energy resources used as raw materials;* ***PERT*** *Total use of renewable primary energy resources;* ***PENRE*** *Non-renewable primary energy resources used as energy carrier;* ***PENRM*** *Non-renewable primary energy resources used as 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*** *Use of net fresh water.*

End of life – Waste

Parameter	Unit	A1-A3 (coated)	A1-A3 (uncoated)	A4	C1	C2	C3	C4	D
HWD	kg	6.24E-01	6.24E-01	2.19E-03	0	1.18E-03	1.38E-02	1.55E-04	-7.53E-01
NHWD	kg	4.56E-01	4.47E-01	1.93E-02	0	7.79E-03	4.04E-01	2.17E-01	-5.01E-01
RWD	kg	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00

HWD *Hazardous waste disposed;* ***NHWD*** *Non-hazardous waste disposed;* ***RWD*** *Radioactive waste disposed.*

End of life – output flow

Parameter	Unit	A1-A3 (coated)	A1-A3 (uncoated)	A4	C1	C2	C3	C4	D
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.38E-03	9.38E-03	0.00E+00	0	0.00E+00	9.01E-01	0.00E+00	0.00E+00
MER	kg	2.80E-03	2.80E-03	0.00E+00	0	0.00E+00	6.20E-02	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	MJ	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU *Components for reuse;* ***MFR*** *Materials for recycling;* ***MER*** *Materials for energy recovery;* ***EEE*** *Exported electric energy;* ***EET*** *Exported thermal energy.*

Information describing the biogenic carbon content at the factory gate

Biogenic carbon content	Unit	Value
Biogenic carbon content in product	kg C	0
Biogenic carbon content in the accompanying packaging	kg C	0

Note: 1 kg biogenic carbon is equivalent to 44/12 (approx. 3.67) kg CO_2.

Additional requirements

Transparent reporting of energy

The EPD provides in the main result tables environmental impact categories based on a location-based approach. The information below is provided so that EPD users understand the effect of these methodological choices.

The table below shows the calculation of GWP-total for energy resources used in the manufacturing process (A3) in Speira AS, Holmestrand.

Energy source	Data source	Amount*	Unit	GWP_{total} [kg CO_2 -eq/unit]	SUM [kg CO_2 -eq]
Location based approach					
Norwegian high-voltage electricity grid	Speira AS	1.006	kWh/kg	0.0195	0.0196

The residual mix is calculated using the following methodology EN 15804 + A2 (adapted), v3.1 with ecoinvent v3.11 process: {Electricity, high voltage {NO}| market for electricity, high voltage | Cut-off, U}.

Additional environmental impact indicators required for construction products

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.

Parameter	Unit	A1-A3 (coated)	A1-A3 (uncoated)	A4	C1	C2	C3	C4	D
GWP-IOBC	kg CO_2-eq.	3.22E+00	3.08E+00	1.28E-01	0	5.85E-02	2.41E-01	6.32E-04	-3.09E+00

GWP-IOBC *Global warming potential calculated according to the principle of instantaneous oxidation.*

Hazardous substances

The declaration is based upon reference to threshold values and/or test results and/or material safety data sheets provided to EPD verifiers. Documentation available upon request to EPD owner.

- X The product contains no substances given by the REACH Candidate list.
- ▫ The product contains substances given by the REACH Candidate list that are less than 0,1 % by weight.
- ▫ The product contains dangerous substances, more then 0,1% by weight, given by the REACH Candidate List, see table.
- ▫ The product contains no substances given by the REACH Candidate list.
- ▫ The product is classified as hazardous waste, see table.

Indoor environment

Not relevant.

Carbon footprint

While a carbon footprint analysis has not been conducted for the product separately, the results section does include an evaluation of Global Warming Potential (GWP) with such an analysis. The GWP total results presented in this EPD document represent the carbon footprint of the product studied.

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ecoinvent:2024	*ecoinvent. v. 3.11. LCI database published by ecoinvent*
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
ISO 14025:2010	Environmental labels and declarations - Type III environmental declarations - Principles and procedures
ISO 14044:2006	Environmental management - Life cycle assessment - Requirements and guidelines
ISO 21930:2017	Sustainability in building construction - Environmental declaration of building products

NPCR:2021	NPCR Part A: Construction products and services. Version 2.0. Issue date: 24.03.2021. Valid to: 24.03.2026
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Pré:2025	SimaPro v. 10.2 LCA software
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