epd-norge

Environmental Product Declaration

In accordance with ISO 14025 and EN 15804 +A2

CONSOLIS
BALTICS

The Norwegian
EPD Foundation

Owner of the declaration:
Consolis Baltics

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-3379-2001-EN

Registration Number:
NEPD-3379-2001-EN

Issue date: 16.03.2022
Valid to: 16.03.2027

Prestressed Elements

One tonne average
Prestressed Elements

Manufacturer

Consolis Baltics

CONSOLIS
BALTICS

General information

Product:
Pre-stressed Structural Elements

Program Operator:
The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Tlf: +47 23 08 80 00
e-mail: post@epd-norge.no

Decleration Number:
NEPD-3379-2001-EN

This declaration is based on Product Category Rules:
NPCR 020 Part B for concrete and concrete elements v2.0

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

Declared unit:
1 tonne

Functional unit:
One tonne average Pre-stressed structural elements. The product is an average based on yearly production of the production locations which are part of Consolis Baltic. Materials used for assembly are not included in this LCA.

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

internal ☐ external ☒

Elisabet Amat
Independent verifier approved by EPD Norway

Owner of the declaration:
Consolis Baltics
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Manufacturer:
Consolis Baltics
Tammi tee 51
76915 Harju maakond, Vatsla (EE)
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Place of production:
Trakai factory, Trakai, Lithuania (UAB Betonika)
Harku factory, Vatsla, Estonia (OÜ E-Betoonelement)
Salaspils factory, Salaspils, Latvia (Consolis Latvija SIA)
Tamsalu factory, Lääne-Viru, Estonia(OÜ E-Betoonelement)
Rumbula factory, Stopiņu novads, Latvia (Consolis Latvija SIA)

Management system:
ISO 14001:2015

Organisation no:
NEPD-3319

Issue date:
16.03.2022

Valid to:
16.03.2027

Year of study:
2020

Comparability:
EPDs from other programmes than EPD Norge may not be comparable.

The EPD has been worked out by:
Gert Jan van Beijnum[NIBE bv]

Approved (Manager of EPD Norway)

Product

Product description:

The Pre-stressed structural elements include:

- Beams;
- TT slabs;
- Massive slabs;
- Balconies

The Pre-stressed structural elements are used for building construction and consists of reinforced concrete. The Pre-stressed structural elements are prestressed with reinforcement wires. The Pre-stressed structural elements are available in various shapes and sizes.

The results declared in this LCA are applicable for the most common composition, as described in the functional unit, produced by Consolis Baltics for the Baltic states and Nordics market.

Product specification:

The average pre-stressed concrete elements produced by Consolis Baltic consists of the following raw materials:

Materials	KG	%
Cement CEMI 42,5 R	17.5	2%
Cement CEMI 52,5 R	151.5	15%
Granite	18.4	2%
Gravel rubble	165.9	17%
Sand	312.0	31%
Lime stone	199.1	20%
Filler	8.2	1%
Additives	1.6	0%
Water	81.0	8%
Prestressed steel	20.1	2%
Reinforcement bar	22.8	2%
Steel mesh	2.0	0%

Technical data:

- Length – up to 32 m
- Width – up to 3 m
- Height – up to 2,1 m
- Density concrete 2400 kg/m3
- Weight up to 40T

The following materials are used for manufacturing pre-stressed concrete elements:

- normal-weight concrete with the strength class of at least C30/37. The manufacturing process and characteristics of which correspond to the requirements of standard EN 206 and complimentary national requirements: SS137003, NS-EN 206 + NA, SFS 7022, DS/EN 206 DK NA
- reinforcing steel for reinforcement, the characteristics of which conform to standard EN 10080
- prestressing steel wires according to prEN 10138-2;
- prestressing steel strands according to prEN 10138-3

Elements are produced in accordance with EN 13369, EN 13224 and EN 13225. Compressive strength and exposure class is provided according to project documentation.

Market:
Nordic countries and Baltic states

Reference service life, product:
For construction elements the product reference service life is equal to the service life time of the building. Therefore the RSL of the product is set to the reference study period of 60 years for the building.

Reference service life, building:
The service life time of the building is 60 years

LCA: Calculation rules

Declared unit:
Tonne

Data quality:
Data for the recipes, energy use and waste are based on the production year 2020. Background data is based on EPDs and EcoInvent 3.6. Foreground data is <2 years and background data <10 years. The data quality is considered to be good.

Allocation:
The allocation is made in accordance with the provisions of EN 15804. Incoming energy and production waste of concrete and reinforcement is allocated equally among all products through mass allocation.

System boundary:
LCA is performed as a “Cradle-to-grave” type of EPD. All major materials, production energy use and waste are included for phases A1, A2, A3, A4, A5, C1, C2, C4. Use stage B1-B7 are considered but not relevant for this type of product. All life cycle impacts are included, see flowchart above.

Cut-off criteria:
All major raw materials and all the essential energy is included. The production process for raw materials and energy flows that have very small amounts (<1%) are not included. This cut-off rule does not apply for hazardous materials and substances. Materials used for assembly are not included in this LCA.

LCA: Scenarios and additional technical information

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

Transport from production place to assembly/user (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance KM	Fuel/Energy consumption	value (l/t)
Scenario 1: Local market					
Truck	50	Truck >32t, EURO 5	1	0.0164 kg diesel/TKM	0.0195
Scenario 2: Sweden, Stockholm					
Truck	50	Truck >32t, EURO 5	305	0.0167 kg diesel/TKM	6.05
Boat	Not availabe	Ferry	275	0,001224kg HFO / TKM	0.37
Scenario 3: Denmark, Kopenhagen					
Truck	50	Truck >32t, EURO 5	630	0.0167 kg diesel / TKM	12.5
Boat	Not availabe	Ferry	425	0,001224kg HFO / TKM	0.58

Transportation from one of the production sites of Consolis Baltic in Estonia, Latvia and Lithuania to a customer at the local market, Sweden or Denmark.

Assembly (A5)

	Unit	Value
Electricity consumption	kWh	1.24
Material loss	Kg	0
Output materials from waste treatment	Kg	0

Materials used for assembly are not included in this LCA.

Use (B1)

No significant environment impact in the use stage modules, because there is no (significant) emissions to air, soil or water.

Maintenance (B2)/Repair (B3)

No significant environment impact in the use stage modules, because no (planned) maintenance or repair needed in the use stage.

Replacement (B4)/Refurbishment (B5)

Replacement and refubishment are not relevant.

Operational energy (B6) and water consumption (B7)

Modules B6-B7 are not relevant according to NPCR020 and are not included.

End of Life (C1, C3, C4)

	Unit	Value
Hazardous waste disposed	Kg	0
Collected as mixed construction waste	Kg	1000
Reuse	Kg	0
Recycling	Kg	988.2
Energy recovery	Kg	0
To landfill	Kg	11.8

Energy use for demolition is based IVL report NR U 5176 (Erlandsson & Petersson 2015). In this study, a general value of 10kWh/ton is given for the demolition of a concrete frame.

The end-of-waste point for concrete is assumed to be clean granulate ready for use in another productsystem. Energy use of of 2kWh/ton is used for the demolition of a concrete frame (IVL report NR U 5176, Erlandsson & Petersson 2015).

For concrete an end of life scenario of 99% recycling (C3) and 1% landfill (C4) is assumed. For reinforcing steel a end-of-life scenario of 95% recycling (C3) and 5% (C4) landfill is taken into account.

Transport to waste processing (C2)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance KM	Fuel/Energy consumption	value (l/t)
Truck	46	Lorry, unspecified	35	0.01917 kg Diesel / TKM	0.7988

Benefits and loads beyond the system boundaries (D)

	Unit	Value
Concrete | primary equivalent: gravel, round	kg	-945.52 (benefit)
Reinforcement | primary equivalent: World Steel method (Steel production, electric, low-alloyed - Steel production, converter, unalloyed)	kg	-13.98 (benefit)

LCA: Results

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

Product stage			Assembly stage		Use stage							End of life stage				Benefits & loads beoyond 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	X	X	X	X	MNR	MNR	MNR	MNR	X	X	X	X	X

Core environmental impact indicators

Indicator	Unit	A1	A2	A3	A1-A3	A4/s1	A4/s2	A4/s3	A5	B1-B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	2,11E+02	1,06E+01	2,42E+01	2,45E+02	7,62E-02	5,41E+01	9,56E+01	5,43E-01	MNR	3,30E+00	3,18E+00	6,24E-01	6,23E-02	-2,37E+01
GWP-fossil	kg CO2 eq.	2,09E+02	1,06E+01	2,36E+01	2,43E+02	7,61E-02	5,40E+01	9,56E+01	5,26E-01	MNR	3,30E+00	3,18E+00	6,23E-01	6,21E-02	-2,39E+01
GWP-biogenic	kg CO2 eq.	1,61E+00	7,38E-03	5,28E-01	2,14E+00	5,30E-05	9,85E-03	2,36E-02	1,60E-02	MNR	9,17E-04	2,31E-03	1,73E-04	1,23E-04	1,89E-01
GWP-LULUC	kg CO2 eq.	2,10E-01	3,25E-03	4,03E-02	2,53E-01	2,07E-05	2,53E-02	4,24E-02	1,22E-03	MNR	2,60E-04	9,29E-04	4,91E-05	1,73E-05	1,04E-02
ODP	kg CFC11 eq.	6,88E-06	2,49E-06	2,39E-06	1,18E-05	1,78E-08	1,17E-05	2,09E-05	4,45E-08	MNR	7,12E-07	7,48E-07	1,35E-07	2,56E-08	-8,82E-07
AP	mol H^+ eq.	5,28E-01	5,43E-02	8,91E-02	6,72E-01	3,15E-04	1,09E+00	1,73E+00	3,07E-03	MNR	3,45E-02	1,34E-02	6,52E-03	5,90E-04	-1,06E-01
EP-freshwater	kg P eq.	1,57E-02	8,02E-05	9,62E-04	1,68E-02	5,42E-07	2,86E-04	5,28E-04	5,62E-05	MNR	1,20E-05	2,43E-05	2,27E-06	6,96E-07	-8,49E-04
EP-marine	kg N eq.	1,20E-01	1,60E-02	2,19E-02	1,58E-01	9,51E-05	2,77E-01	4,43E-01	3,90E-04	MNR	1,52E-02	4,02E-03	2,88E-03	2,03E-04	-2,25E-02
EP-terrestial	mol N eq.	1,35E+00	1,77E-01	2,52E-01	1,78E+00	1,05E-03	3,07E+00	4,92E+00	4,80E-03	MNR	1,67E-01	4,45E-02	3,16E-02	2,24E-03	-2,62E-01
POCP	kg NMVOC eq.	4,63E-01	5,47E-02	7,18E-02	5,89E-01	3,35E-04	8,13E-01	1,31E+00	1,22E-03	MNR	4,59E-02	1,43E-02	8,68E-03	6,50E-04	-1,39E-01
ADP-M&M	kg Sb eq.	2,05E-03	1,80E-04	1,97E-04	2,43E-03	1,20E-06	5,80E-04	1,09E-03	3,85E-06	MNR	5,06E-06	5,43E-05	9,56E-07	5,69E-07	-2,11E-04
ADP-fossil	MJ	1,47E+03	1,65E+02	2,73E+02	1,91E+03	1,17E+00	7,54E+02	1,35E+03	1,09E+01	MNR	4,54E+01	4,95E+01	8,58E+00	1,74E+00	-1,88E+02
WDP	m^3	3,23E+03	5,28E-01	1,55E+02	3,39E+03	3,55E-03	1,63E+00	3,08E+00	1,21E-01	MNR	6,08E-02	1,61E-01	1,15E-02	7,79E-02	-6,07E+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-terrestial:*** *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 counsumption*

Additional environmental impact indicators

Indicator	Unit	A1	A2	A3	A1-A3	A4/s1	A4/s2	A4/s3	A5	B1-B7	C1	C2	C3	C4	D
PM	Disease incidence	6,80E-06	9,43E-07	1,34E-06	9,08E-06	6,45E-09	2,94E-06	5,57E-06	8,06E-09	MNR	9,14E-07	2,88E-07	1,73E-07	1,15E-08	-1,65E-06
IRP	kBq U235 eq.	5,58E+00	7,20E-01	1,12E+00	7,42E+00	5,13E-03	3,27E+00	5,86E+00	9,50E-02	MNR	1,95E-01	2,16E-01	3,68E-02	7,12E-03	1,41E-01
ETP-fw	CTUe	2,94E+03	1,31E+02	2,95E+02	3,37E+03	9,11E-01	5,30E+02	9,64E+02	7,44E+00	MNR	2,74E+01	3,94E+01	5,17E+00	1,13E+00	-7,47E+02
HTP-c	CTUh	3,31E-07	3,34E-09	3,71E-08	3,71E-07	2,19E-11	2,28E-08	3,87E-08	1,92E-10	MNR	9,56E-10	9,71E-10	1,81E-10	2,60E-11	-5,53E-09
HTP-nc	CTUh	5,01E-06	1,47E-07	9,38E-07	6,10E-06	1,01E-09	5,08E-07	9,46E-07	6,55E-09	MNR	2,35E-08	4,48E-08	4,44E-09	8,01E-10	3,77E-06
SQP	Dimension-less	3,77E+02	1,84E+02	2,96E+02	8,57E+02	1,26E+00	4,47E+02	8,92E+02	2,65E+00	MNR	5,79E+00	5,67E+01	1,09E+00	3,64E+00	-9,46E+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*

Classification of disclaimers to the declaration of core and additional environmental impact indicators

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching freshwater end compartment (EP-freshwater)	None
ILCD type / level 2	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2

ILCD type / level 3	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2
Disclaimer 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.		
Disclaimer 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	A2	A3	A1-A3	A4/s1	A4/s2	A4/s3	A5	B1-B7	C1	C2	C3	C4	D
RPEE	MJ	9,09E+01	2,05E+00	8,21E+01	1,75E+02	1,39E-02	6,81E+00	1,27E+01	2,10E+00	MNR	2,46E-01	6,23E-01	4,64E-02	1,40E-02	6,10E-01
RPEM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TPE	MJ	9,09E+01	2,05E+00	8,21E+01	1,75E+02	1,39E-02	6,81E+00	1,27E+01	2,10E+00	MNR	2,46E-01	6,23E-01	4,64E-02	1,40E-02	6,10E-01
NRPE	MJ	1,53E+03	1,75E+02	2,92E+02	1,99E+03	1,25E+00	8,00E+02	1,43E+03	1,14E+01	MNR	4,82E+01	5,25E+01	9,11E+00	1,84E+00	-1,97E+02
NRPM	MJ	4,13E+00	0,00E+00	2,01E-01	4,33E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TRPE	MJ	1,53E+03	1,75E+02	2,92E+02	2,00E+03	1,25E+00	8,00E+02	1,43E+03	1,14E+01	MNR	4,82E+01	5,25E+01	9,11E+00	1,84E+00	-1,97E+02
SM	kg	2,85E+01	0,00E+00	2,51E+00	3,10E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	6,35E-02	0,00E+00	3,07E-03	6,66E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
W	m^3	1,69E+00	1,85E-02	7,99E-02	1,79E+00	1,25E-04	5,80E-02	1,10E-01	9,22E-03	MNR	2,34E-03	5,64E-03	4,42E-04	1,85E-03	-1,41E+00

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE 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; W Use of net fresh water

End of life - Waste

Parameter	Unit	A1	A2	A3	A1-A3	A4/s1	A4/s2	A4/s3	A5	B1-B7	C1	C2	C3	C4	D
HW	KG	2,76E+00	3,94E-04	1,34E-01	2,89E+00	2,87E-06	1,24E-03	2,37E-03	7,22E-06	MNR	1,24E-04	1,20E-04	2,34E-05	2,60E-06	-2,49E-03
NHW	KG	6,42E+01	1,39E+01	5,90E+00	8,41E+01	9,47E-02	3,07E+01	6,25E+01	3,68E-02	MNR	5,37E-02	4,30E+00	1,02E-02	1,18E+01	-2,49E+00
RW	KG	2,01E-02	1,13E-03	2,18E-03	2,34E-02	8,05E-06	5,21E-03	9,33E-03	7,76E-05	MNR	3,15E-04	3,38E-04	5,96E-05	1,14E-05	-9,88E-05

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

End of life – output flow

Parameter	Unit	A1	A2	A3	A1-A3	A4	A4/s2	A4/s3	A5	B1-B7	C1	C2	C3	C4	D
CR	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	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MR	kg	3,52E+00	0,00E+00	5,93E+01	6,28E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	0,00E+00	0,00E+00	9,88E+02	0,00E+00	0,00E+00
MER	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	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

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

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

Additional Norwegian requirements

Greenhouse gas emission 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).

National electricity grid	Unit	Value
Estonia, renewable source (Eurostat 2019)	kg CO2 -eq/kWh	1.77E-01
Latvia	kg CO2 -eq/kWh	5.62E-01
Lithuania	kg CO2 -eq/kWh	3.89E-01

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

In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator for GWP has been sub-divided into the following:

GWP-IOBC Climate impacts calculated according to the principle of instantanious oxidation
GWP-BC Climate impacts from the net uptake and emission of biogenic carbon from each module.

In addition, EP-freshwater shall also declared as PO4 eq.

Indicator	Unit	A1	A2	A3	A1-A3	A4/s1	A4/s2	A4/s3	A5	B1-B7	C1	C2	C3	C4	D
EP-freshwater*	kg PO4 eq.	1,57E-02	8,02E-05	9,62E-04	1,68E-02	5,42E-07	2,86E-04	5,28E-04	5,62E-05	MNR	1,20E-05	2,43E-05	2,27E-06	6,96E-07	-8,49E-04
GWP-IOBC	kg CO2 eq.	2,10E-01	3,25E-03	4,03E-02	2,53E-01	2,07E-05	2,53E-02	4,24E-02	1,22E-03	MNR	2,60E-04	9,29E-04	4,91E-05	1,73E-05	1,04E-02
GWP-BC	kg CO2 eq.	1,61E+00	7,38E-03	5,28E-01	2,14E+00	5,30E-05	9,85E-03	2,36E-02	1,60E-02	MNR	9,17E-04	2,31E-03	1,73E-04	1,23E-04	1,89E-01
GWP	kg CO2 eq.	2,09E+02	1,06E+01	2,36E+01	2,43E+02	7,61E-02	5,40E+01	9,56E+01	5,26E-01	MNR	3,30E+00	3,18E+00	6,23E-01	6,21E-02	-2,39E+01

EP-freshwater* *Eutrophication potential, fraction of nutrients reaching freshwater end compartment. Declared as PO4 eq.* ***GWP-IOBC*** *Global warming potential calculated according to the principle of instantanious oxidation.* ***GWP-BC*** *Global warming potential from net uptake and emissions of biogenic carbon from the materials in each module.* ***GWP*** *Global warming potential*

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.

The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskiften, Annex III), see table.

Indoor environment

The product meets the requirements for low emissions.

Not relevant

Carbon footprint

Carbon footprint has not been worked out for the product.

Bibliography

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
EN 15804:2012+A2:2019	Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products
ISO 21930:2007	Sustainability in building construction - Environmental declaration of building products
NCPR 020	NPCR 020 version 2.0 (20.09.2021), PCR - Part B for Concrete and concrete elements
NR U 5176	Klimatpåverkan för byggnader med olika energiprestanda, IVL Svenska Miljóinstitutet (Erlandsson and Pettersson, 2015)

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