epd-norge.no
The Norwegian EPD Foundation

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

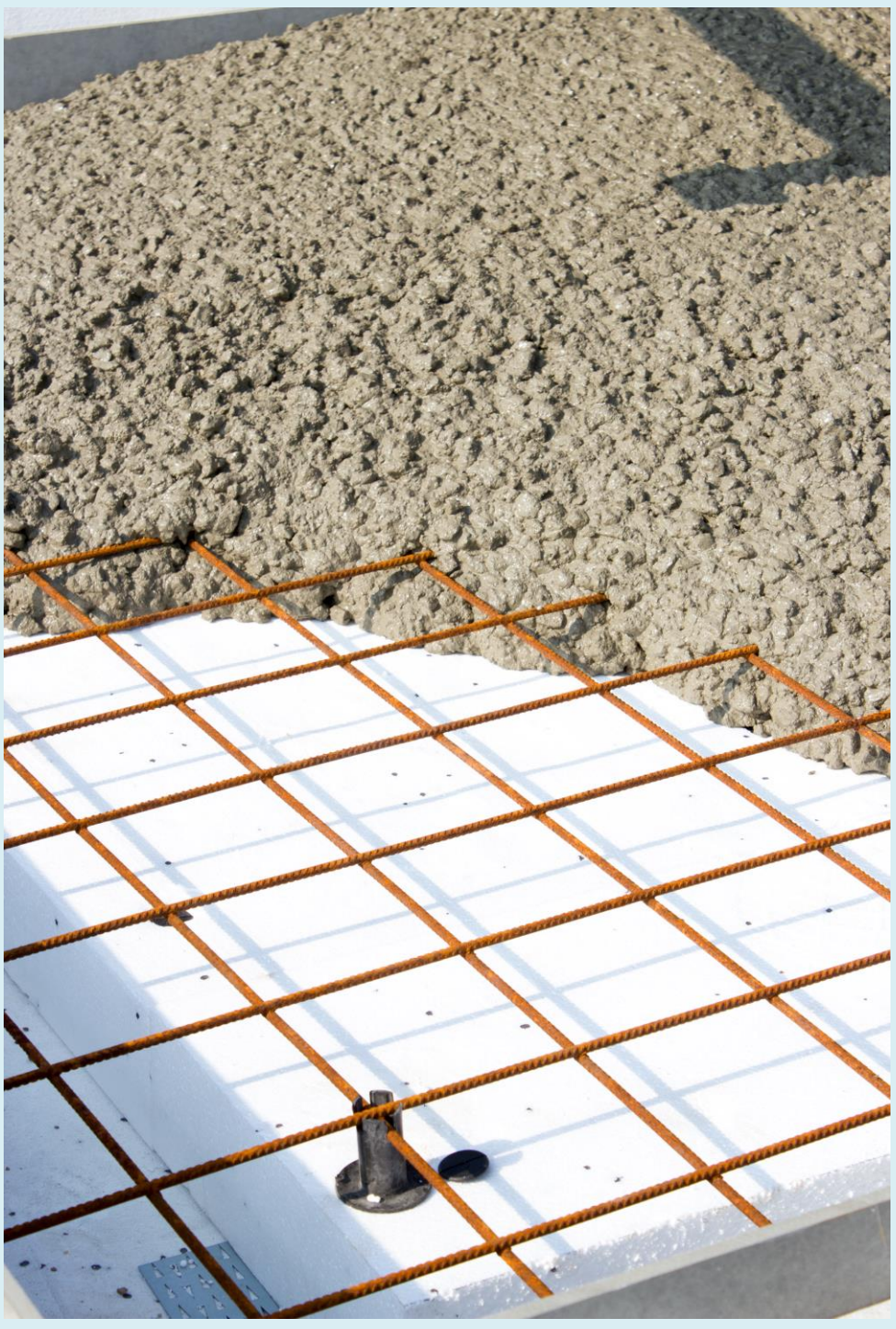
Owner of the declaration:	Finja AB
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-2900-1597-EN
Registration number:	NEPD-2900-1597-EN
ECO Platform reference number:	-
Issue date:	01.07.2021
Valid to:	01.07.2026

Grovbetong ECO

FINJA

Finja Betong AB

www.epd-norge.no



General information

Product:
Grovbetong ECO

Owner of the declaration:
Finja Betong AB
Contact person: Martin Varma
Phone: +46 10-4552000
e-mail: martin.varma@finja.se

Program operator:
The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo
Phone: +47 997 22 020
e-mail: post@epd-norge.no

Manufacturer:
Finja Betong AB
Betongvägen 1, 28193 Finja
Phone: +46 10-4552000
e-mail: info@finja.se

Declaration number:
NEPD-2900-1597-EN

Place of production:
Strängnäs, Sweden

ECO Platform reference number:

Management system:
ISO 14001

This declaration is based on Product Category Rules:
CEN Standard EN 15804 serves as core PCR

Organisation no:
556101-6840

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.

Issue date:
01.07.2021

Valid to:
01.07.2026

Declared unit:
1 kg Grovbetong ECO, Dry Mortar mix, in sack

Year of study:
2021

Declared unit with option:
A1-A5

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

Functional unit:
-

The EPD has been worked out by:
Malin Eriksson

Verification:
The CEN Norm EN 15804 serves as the core PCR.
Independent verification of the declaration and data, according to ISO14025:2010

☐ internal ☑ external

Third party verifier:

Martin Erlandsson, IVL Swedish Environmental Research Inst.
(Independent verifier approved by EPD Norway)

Approved:

sign

Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:
Carbon dioxide-reduced and binder-optimized concrete free from non renewable natural sand resource. Package consists of polyethylene made from recycled polyethylene and polyethylene made from renewable raw material originating from sugar cane.

Technical data:
Betongklass C28/35
Exposure class XC2/XF1

For information see www.finja.se

Market:
Nordic countries

Product specification:
Composition of the product is described in the table below

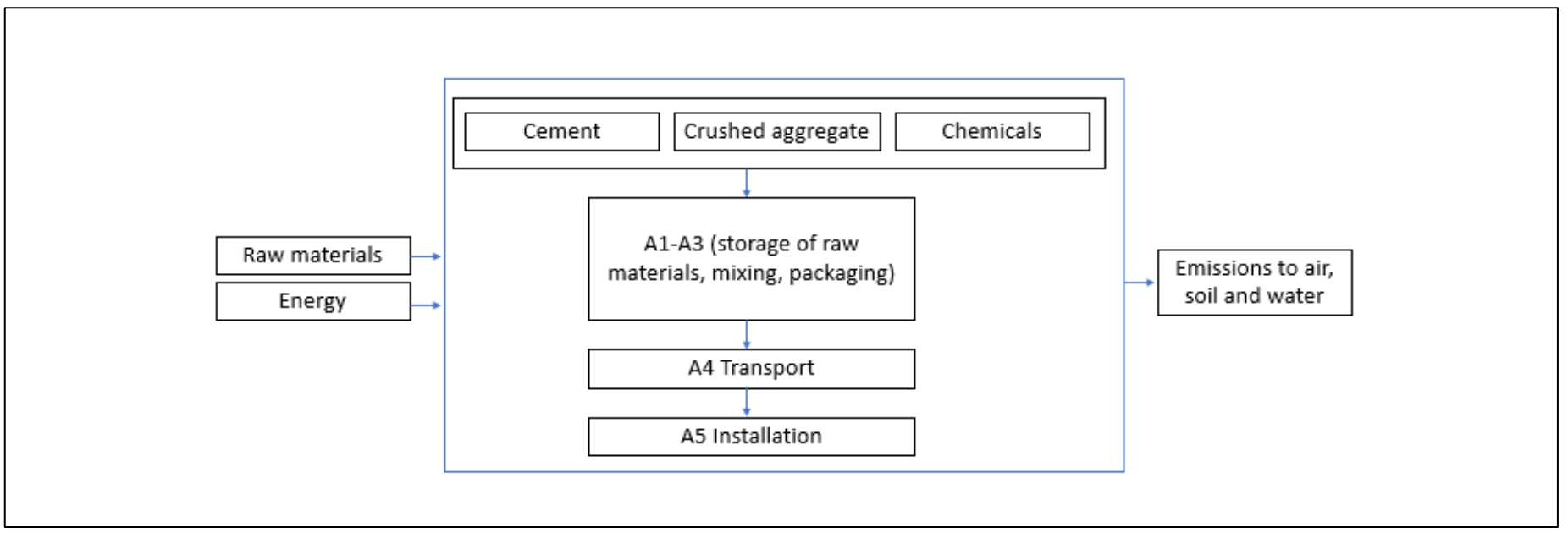
Reference service life
100 years

Materials	kg	%
Cement		16
Crushed aggregate		84
Packaging		<1

LCA: Calculation rules

Declared unit:
1 kg Grovbetong ECO, Dry Mortar mix, in sack

System boundary:
All processes from raw material extraction to product from the factory gate are included in the analysis (A1-A3). In addition, a median value for transport to the user (A4). Module A5 are calculated on the assumptions that 5% waste of the product occur in the assembly state, and that water and electricity used at the assembly are assumed to be zero.



Data quality:

Materials	Data quality	Source	Year
Cement	EPD	EPD-HCG-20190142-CAA1-EN	2019
Crushed aggregate	Industry data	Ecoinvent v3.6	
Packaging	Industry data	Ecoinvent v3.6	

Allocation:
The allocation is made in accordance with the provisions of EN 15804. Incoming energy, water and waste production in-house is allocated equally among all products through mass allocation, except heat from pellets to dry crushed aggregate is allocated to the crushed aggregate percentage in the product. Effects of primary production of recycled materials allocated to the main product in which the material was used.

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

LCA: Scenarios and additional technical information

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

50 % of the products are delivered to the customer from the factory in Strängnäs (125 km). The remaining half of the products are first transported to Finja Betongs warehouse in Hässleholm before it is transported to the customer (total distance 689 km). The distance to customer is a median value in terms of deliveries made in 2020.

Transport from production place to user (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy	Value
Truck	80%	Lorry, Euro 5	407	l/tkm	

It is estimated that 5 % waste of the product occur in the assembly state.

Assembly (A5)

	Parameter expressed by functional unit
Auxiliary	Not applicable
Water consumption	Use of water is not included in the assembly calculations as it is assumed to have a small environmental impact.
Electricity consumption	Use of electricity is not included in the assembly calculations as it is assumed to have a very small environmental impact.
Other energy carriers	Not applicable
Material loss	Material loss is assumed to be 5 %
Output materials from waste treatment	Waste management process for packaging
Dust in the air	Not applicable

LCA: Results

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

Product stage			Assembly 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	MND	MND	MND	MND	MND

Environmental impact

Parameter	Unit	A1	A2	A3	A1- A3	A4	A5		
GWP	kg CO_2 -eqv	1.26E-01	5.41E-03	1.73E-03	0.133	2.80E-02	8.06E-03		
ODP	kg CFC11-eqv	3.45E-09	1.64E-11	1.93E-10	3.66E-09	5.71E-09	1.86E-10		
POCP	kg C_2H_4 -eqv	1.69E-05	1.26E-06	6.75E-07	1.88E-05	5.31E-06	1.21E-06		
AP	kg SO_2 -eqv	1.76E-04	2.46E-05	1.55E-05	2.16E-04	1.06E-04	1.61E-05		
EP	kg PO_4^{3-}-eqv	7.06E-05	5.68E-06	4.98E-06	8.13E-05	2.39E-05	5.26E-06		
ADPM	kg Sb-eqv	9.41E-07	5.76E-10	7.84E-08	1.02E-06	1.12E-09	5.11E-08		
ADPE	MJ	4.17E-01	7.62E-02	2.45E-02	5.18E-01	3.96E-01	4.57E-02		

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources

Resource use

Parameter	Unit	A1	A2	A3	A1-A3	A4	A5		
RPEE	MJ	1.61E-01	1.43E-04	9.64E-02	0.258	4.51E-04	1.29E-02		
RPEM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
TPE	MJ	1.61E-01	1.43E-04	9.64E-02	2.58E-01	4.51E-04	1.29E-02		
NRPE	MJ	6.38E-01	8.14E-02	3.03E-02	7.50E-01	4.23E-01	5.87E-02		
NRPM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
TRPE	MJ	6.38E-01	8.14E-02	3.03E-02	7.50E-01	4.23E-01	5.87E-02		
SM	kg	2.11E-02	0.00E+00	0.00E+00	2.11E-02	0.00E+00	9.92E-04		
RSF	MJ	1.42E-01	0.00E+00	0.00E+00	1.42E-01	0.00E+00	7.08E-03		
NRSF	MJ	1.71E-01	0.00E+00	0.00E+00	1.71E-01	0.00E+00	8.56E-03		
W	m^3	1.20E-02	2.65E-05	1.56E-01	1.68E-01	1.89E-03	8.52E-03		

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	A5		
HW	kg	4.06E-07	1.28E-09	5.08E-08	4.58E-07	0.00E+00	2.29E-08		
NHW	kg	7.33E-02	9.00E-06	4.55E-04	7.38E-02	3.50E-08	3.69E-03		
RW	kg	2.00E-06	4.05E-09	1.44E-07	2.15E-06	0.00E+00	1.07E-07		

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	A5		
CR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		
MR	kg	2.70E-03	0.00E+00	0.00E+00	2.70E-03	0.00E+00	1.35E-04		
MER	kg	0.00E+00	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		
ETE	MJ	0.00E+00	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

Additional Norwegian requirements

Greenhous gas emission from the use of electricity in the manufacturing phase
Electricity use in production is based on consumption figures for 2020. Emission data is taken from Ecoinvent 3.3 "Electricity, medium voltage {SE}| market for | APOS, S"

Data source	Amount	Unit
Ecoinvent v3 (2016)	56	g CO_2-eqv/kWh

Dangerous substances

☑ The product contains no substances given by the REACH Candidate list or the Norwegian priority list

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

☐ The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.

☐ 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 (M1) according to EN15251: 2007 Appendix E.

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+A1:2013	*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*
PCR EPD-Norge	*EPD-Norge, Product Category Rules Part A: Construction products and services. Valid to 07.04.2022*
PCR EPD-Norge	*EPD-Norge, Product Category Rules Part B for Concrete and concrete elements. Valid to 18.10.2023*
LCA Report	*LCA Report Finja Grovbetong ECO - 210602. Malin Eriksson, WSP*

epd-norge.no
The Norwegian EPD Foundation

Publisher and program operator
The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo
Norway
Phone: +47 23 08 80 00
e-mail: post@epd-norge.no
web www.epd-norge.no

Owner of the declaration
Finja Betong AB
Betongvägen 1
S-281 93 Finja
Phone: +46 10-455 20 00
e-mail: info@finja.se
web www.finja.se

Author of the Life Cycle Assessment
Malin Eriksson
Box 13033
S-402 51 Göteborg
Phone: +46 10-722 50 00
e-mail: malin.e.eriksson@wsp.com
web www.wsp.se