

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	BM Vallå
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-2365-1103-EN
Registration number:	NEPD-2365-1103-EN
ECO Platform reference number:	-
Issue date:	08.09.2020
Valid to:	08.09.2025

Ready mix concrete C30/C37 outdoor

BM Vallå



www.epd-norge.no



General information

Product:

Ready mix concrete C30/C37 outdoor

Owner of the declaration:

BM Vallá
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Program operator:

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Declaration number:

NEPD-2365-1103-EN

ECO Platform reference number:**This declaration is based on Product Category Rules:**

CEN Standard EN 15804:2012+A1:2013 serves as core PCR
NPCR 020:2018 Part B for Concrete and concrete elements

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 m³ Ready mix concrete C30/C37 outdoor

Declared unit with option:

A1,A2,A3,A4

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. Individual third party verification of each EPD is not required when the EPD tool is i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPDNorway, and iii) the process is reviewed annually. 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.

Anne Rønning, Norsus AS
(no signature required)

Manufacturer:

BM Vallá
Bildshöfði 7, 110 Reykjavík, Iceland

Place of production:

BM Vallá
Bildshöfði 7, 110 Reykjavík, Iceland

Management system:

ISO 9001

Organisation no:

10480

Issue date:

08.09.2020

Valid to:

08.09.2025

Year of study:

2020

Comparability:

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

Development and verification of EPD:

The declaration has been developed and verified using EPD tool Ica.tools ver EPD2020.11, developed by LCA.no AS. The EPD tool is integrated into the company's environmental management system, and has been approved by EPD-Norway

Developer of EPD:

Smari Valgardsson

Reviewer of company-specific input data and EPD:

Einar Einarsson

Approved:

Sign



Håkon Hauan, CEO EPD-Norge

Product

Product description:

Ready mix concrete for outdoor use, produced according to ÍST-EN 206:2013+A1:2016

Product specification

Materials	kg	%
Cement	350,00	15,23
Aggregate	1780,00	77,43
Water	165,00	7,18
Chemicals	3,75	0,16
Total	2298,75	

Technical data:

C30/37-25; XC4 XF2/XF3 XS1

Dmax 25 - Air >5% - v/s < 0,50

Market:

Iceland

Reference service life, product

Same as for buildings

Reference service life, building

60 years

LCA: Calculation rules

Declared unit:

1 m3 Ready mix concrete C30/C37 outdoor

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.

Data quality:

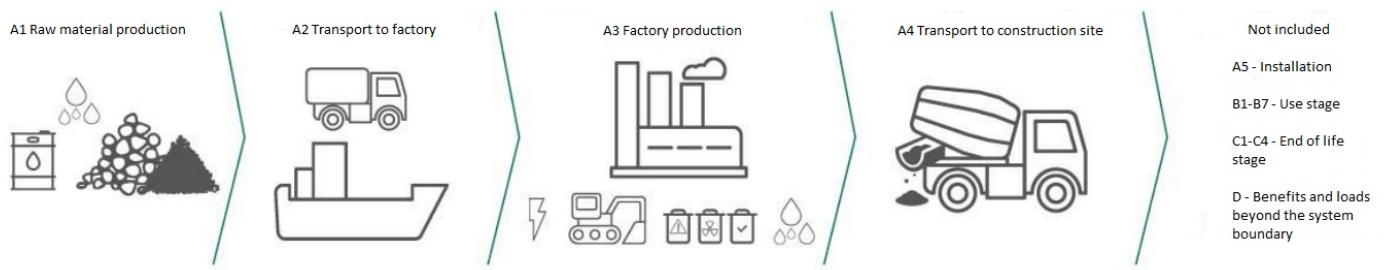
Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other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

Materials	Source	Data quality	Year
Chemicals	EPD-EFC-20150086-IAG1-EN	EPD	2015
Chemicals	EPD-EFC-20150091-IAG1-EN	EPD	2015
Water	ecoinvent 3.4	Database	2017
Aggregate	Supplier specific data	Database	2019
Cement	NEPD-2277-1028-NO	EPD	2020

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.

System boundary:



Additional technical information:

LCA: Scenarios and additional technical information

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

Transport from production place to user (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy consumption	Unit	Value (l/t)
Truck	53,0 %	Concrete truck, EURO 6	14	0,020216	l/tkm	0,28
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

Assembly (A5)

.	Unit	Value
Auxiliary	kg	
Water consumption	m ³	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	
Output materials from waste treatment	kg	
Dust in the air	kg	
VOC emissions	kg	

Use (B1)

.	Unit	Value

Maintenance (B2)/Repair (B3)

.	Unit	Value
Maintenance cycle*		
Auxiliary		
Other resources		
Water consumption	m ³	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	
VOC emissions	kg	

Replacement (B4)/Refurbishment (B5)

.	Unit	Value
Replacement cycle*		
Electricity consumption	kWh	
Replacement of worn parts		

* Described above if relevant

Operational energy (B6) and water consumption (B7)

.	Unit	Value
Water consumption	m ³	
Electricity consumption	kWh	
Other energy carriers	MJ	
Power output of equipment	kW	

End of Life (C1, C2)

.	Unit	Value
Hazardous waste disposed	kg	
Collected as mixed construction waste	kg	
Reuse	kg	
Recycling		
Energy recovery		
To landfill	kg	

Transport to waste processing (C2)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy consumption	Unit	Value (l/t)
Truck					l/tkm	
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

Scenarios after A1-A4 are not included

LCA: Results

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

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

Product stage		Construction installation stage		User 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	Raise-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	MND	MND	MND	MND	MND

Environmental impact

Parameter	Unit	A1	A2	A3	A4
GWP	kg CO ₂ -eq	2,62E+02	3,44E+01	2,03E+00	1,18E+00
ODP	kg CFC11 -eq	2,08E-06	4,31E-06	3,22E-07	2,24E-07
POCP	kg C ₂ H ₄ -eq	2,90E-02	3,71E-03	3,87E-04	2,10E-04
AP	kg SO ₂ -eq	3,65E-02	1,00E-01	1,37E-02	4,17E-03
EP	kg PO ₄ ³⁻ -eq	1,15E-01	1,49E-02	2,92E-03	8,68E-04
ADPM	kg Sb -eq	3,53E-05	4,29E-05	1,14E-06	2,62E-06
ADPE	MJ	6,16E+02	3,30E+02	2,61E+01	1,81E+01

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

Reading example: 9,0 E-03 = 9,0*10-3 = 0,009
 *INA Indicator Not Assessed

Resource use

Parameter	Unit	A1	A2	A3	A4
RPEE	MJ	2,28E+02	6,58E+00	2,38E+01	2,78E-01
RPEM	MJ	0,00E+00	0,00E+00	0,00E+00	8,51E-02
TPE	MJ	2,28E+02	6,58E+00	2,38E+01	3,63E-01
NRPE	MJ	6,35E+02	3,42E+02	2,65E+01	1,85E+01
NRPM	MJ	6,99E+00	0,00E+00	0,00E+00	0,00E+00
TRPE	MJ	6,42E+02	3,42E+02	2,65E+01	1,85E+01
SM	kg	5,01E+01	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	3,61E+02	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	4,59E+02	0,00E+00	0,00E+00	0,00E+00
W	m ³	3,19E-01	7,65E-02	1,20E-01	1,65E-02

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

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

*INA Indicator Not Assessed

End of life - Waste

Parameter	Unit	A1	A2	A3	A4
HW	kg	2,86E-04	1,90E-04	1,50E-05	1,40E-05
NHW	kg	2,20E+01	2,73E+01	2,78E-01	1,83E+00
RW	kg	INA*	INA*	INA*	INA*

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

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

*INA Indicator Not Assessed

End of life - Output flow

Parameter	Unit	A1	A2	A3	A4
CR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	INA*	INA*	INA*	INA*
ETE	MJ	INA*	INA*	INA*	INA*

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

*INA Indicator Not Assessed

Additional Norwegian 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	Data source	Amount	Unit
El-mix Iceland (kWh)	Ecoinvent 3.6	50,38	g CO2-ekv/kWh

Dangerous substances

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

Indoor environment

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 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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Iversen et al., (2018) eEPD v3.0 - Background information for EPD generator system. LCA.no report number 04.18

Vold, M. og Edvardsen, T. (2014) EPD-generator for betongindustrien, bakgrunnsinformasjon for verifisering, OR 04.14.

NPCR Part A: Construction products and services. Ver. 1.0. April 2017, EPD-Norge.

NPCR 020 Part B for Concrete and concrete elements. Ver. 2.0 October 2018, EPD-Norge.

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