

## **ENVIRONMENTAL PRODUCT DECLARATION**

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:

Program operator:

Publisher:

Declaration number:

Registration number:

ECO Platform reference number:

Issue date:

Valid to:

DC Eikefet Aggregates AS

The Norwegian EPD Foundation

The Norwegian EPD Foundation

NEPD-2750-1447-EN

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25.03.2021

25.03.2026

# Crushed stones and aggregates, produced at DC Seljestokken Aggregates AS

DC Eikefet Aggregates AS



www.epd-norge.no





## **General information**

#### **Product:**

Crushed stones and aggregates, produced at DC Seljestokken Aggregates AS

#### **Program operator:**

The Norwegian EPD Foundation Pb. 5250 Majorstuen, 0303 Oslo Phone: +47 23 08 80 00 e-mail: post@epd-norge.no

#### **Declaration number:**

NEPD-2750-1447-EN

#### **ECO Platform reference number:**

#### This declaration is based on Product Category Rules:

EN 15804:2012+A1:2013 and NPCR Part A serves as core PCR NPCR Part A: Construction products and services. Ver. 1.0. April 2017

#### 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 tonne Crushed stones and aggregates, produced at DC Seljestokken Aggregates AS

#### 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 annualy. 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.

Martin Erlandsson, IVL, Swedish Environmental Research Institute (no signature required)

#### Owner of the declaration:

DC Eikefet Aggregates AS Contact person:: Marion van Eck Ederveen Phone: +47 41 42 94 86

e-mail: marion.vaneck@dcresources.no

#### Manufacturer:

DC Seljestokken Aggregates AS, Org.nr. 984 313 403 Frøysjøvegen 3859 , 6723 Svelgen Norway

#### Place of production:

DC Seljestokken Aggregates AS, Org.nr. 984 313 403 Frøysjøvegen 3859 , 6723 Svelgen Norway

#### Management system:

ISO 9001 for DC Eikefet Aggregates AS, DC Halsvik Aggregates AS og DC Seljestokken Aggregates AS

#### Organisation no:

932 307 952

Issue date: 25.03.2021

Valid to: 25.03.2026

#### Year of study:

2019

#### 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 has been developed and verified using EPD tool lca.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:

Marion van Eck Ederveen

Reviewer of company-specific input data and EPD:

Ingrid Elisabeth Sætre

#### Approved:

Sign

Håkon Hauan, CEO EPD-Norge



## **Product**

#### **Product description:**

Crushed stones and aggregates produced from solid rock by blasting, primary crushing, secondary crushing and sieving.

#### **Product specification**

Approved according to the following standard: EN 13043, EN 12620, EN 13242, EN 13450

Materials	kg	%
Stein	1000,00	100,00
Total:	1000,00	

#### **Technical data:**

This EPD is valid for crushed masses from blasted rock in a number of fractions.

A Declaration of Performance and CE documentation is prepared for all products.

Technical data appears in this documentation.

#### Market:

Local market and export to Europa

#### Reference service life, product

Reference service life depends on the area of use. Crushed rock / aggregates has an almost unlimited lifespan.

#### Reference service life, building

Depending on the area of use.

## LCA: Calculation rules

#### **Declared unit:**

1 tonne Crushed stones and aggregates, produced at DC Seljestokken Aggregates AS

#### 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. 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 (2015 – 2017), ecoinvent v3.3 Allocation, recycled content (2016) and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Finknusing	Owner of EPD	Database	2019
Grovknusing	Owner of EPD	Database	2019
Sprengstein, Seljestokken	Owner of EPD	Database	2019



#### System boundaries and Additional technical information:

1 tonn crushed stones and aggregates, produced at DC Seljestokken Aggregates AS



Fraction mm	Normal use / application	Crushing stages
Blasted rock	filling, coarse fundaments, erosion protection	0
0/200	Unbound use, filling, road- and track foundation	1
20/125	Unbound use, filling, road- and track foundation	1
subbase 0/32	Unbond use, road foundation, base layer	1
subbase 0/16	Unbound use, road foundation, base layer	1
aggregate 2/5	Asphalt, concrete, unbound use	3
aggregate 5/8	Asphalt, concrete, unbound use	3
aggregate 8/11	Asphalt, concrete, unbound use	3
aggregate 11/16	Asphalt, concrete, unbound use	3
ballast 31,5/50	Railway ballast, unbound use	2
ballast 31,5/63	Railway ballast, unbound use	2
Crushed washed		
sand 0/2	Unbound use	3
Crushed		
dryscreen sand		
0/5	Asphalt, concrete, unbound use	3
2/5 mm washed	Winter maintenance with scattering of slippery roads and squares	3



## 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)

Туре	Capacity utilisation (incl. return) %	Type of vehicle	Distance km	Fuel/Energy consumption	Unit	Value (I/t)
Truck	55,0 %	Lastebil med henger, EURO6	50	0,022606	l/tkm	1,13
Railway					l/tkm	
Boat	71,0 %	Ship, Coastal Barge (250 - 3000t load)	150	0,011179	l/tkm	1,68
Other Transportation					l/tkm	

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	Unit	Value
Auxiliary	kg	
Water consumption	m <sup>3</sup>	
Electricity consumption	kWh	
Other energy carriers	MJ	
Material loss	kg	
Output materials fr ste treatment	kg	
Dust in the air	kg	
VOC emissions	kg	

## Use (B1)

Unit	Value	l
		Ī
		1

Unit	Value
OCO	
char.	
4/10	
m <sup>3</sup>	3.9k
kWh	6
MJ	
kg	
kg	
	Scenario m³ kWh MJ 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 <sup>3</sup>	
Electricity consumption	kWh	
Other energy carriers	MJ	
Power output of equipment	KW	

End of Life (C1, v
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74 34		
End of Life (C1)		
in a lie (or, c	Unit	Value
Hazardous waste disposed	kg	
Hazardous waste disposed  Collected as mixed construction was	kg	
Hazardous waste disposed  Collected as mixed construction was  Reuse		
Hazardous waste disposed  Collected as mixed construction was  Reuse  Recycling	kg	
End of Life (C1, C )  Hazardous waste disposed  Collected as mixed construction was  Recycling  Energy recovery	kg	

### Transport to waste processing (C2)

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



## **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			instal	uction lation age	User stage				End of I	life stage	•	Beyond the system bondaries				
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De- construction demolition	Transport	W aste processing	Disposal	Reuse-Recovery- Recycling- potential
A1	A2	A3	A4	A5	B1	B2	В3	В4	В5	В6	В7	C1	C2	C3	C4	. D
Х	Х	Х	Х	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	. MND

## **Environmental impact**

Parameter	Unit	Sprengstein, Seljestokken	Grovknusing	Finknusing
GWP	kg CO <sub>2</sub> -eq	5,37E+00	5,37E+00	5,37E+00
ODP	kg CFC11 -eq	8,10E-07	8,10E-07	8,10E-07
POCP	kg C <sub>2</sub> H <sub>4</sub> -eq	1,61E-03	1,61E-03	1,61E-03
AP	kg SO <sub>2</sub> -eq	9,88E-02	9,88E-02	9,88E-02
EP	kg PO <sub>4</sub> <sup>3-</sup> -eq	2,41E-02	2,41E-02	2,41E-02
ADPM	kg Sb -eq	1,00E-05	1,00E-05	1,00E-05
ADPE	MJ	7,21E+01	7,21E+01	7,21E+01

Parameter	Unit	A4
GWP	kg CO <sub>2</sub> -eq	1,13E+01
ODP	kg CFC11 -eq	1,90E-06
POCP	kg C <sub>2</sub> H <sub>4</sub> -eq	1,82E-03
AP	kg SO <sub>2</sub> -eq	6,25E-02
EP	kg PO <sub>4</sub> ³eq	1,25E-02
ADPM	kg Sb -eq	1,39E-05
ADPE	MJ	1,59E+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

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

\*INA Indicator Not Assessed



### Resource use

Parameter	Unit	Sprengstein, Seljestokken	Grovknusing	Finknusing
RPEE	MJ	1,25E+01	1,25E+01	1,25E+01
RPEM	MJ	0,00E+00	0,00E+00	0,00E+00
TPE	MJ	1,25E+01	1,25E+01	1,25E+01
NRPE	MJ	7,36E+01	7,36E+01	7,36E+01
NRPM	MJ	0,00E+00	0,00E+00	0,00E+00
TRPE	MJ	7,40E+01	7,40E+01	7,40E+01
SM	kg	4,30E-06	4,30E-06	4,30E-06
RSF	MJ	1,96E-03	1,96E-03	1,96E-03
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00
W	m <sup>3</sup>	1,19E-02	1,19E-02	1,19E-02

Parameter	Unit	A4
RPEE	MJ	3,24E+00
RPEM	MJ	0,00E+00
TPE	MJ	3,24E+00
NRPE	MJ	1,65E+02
NRPM	MJ	0,00E+00
TRPE	MJ	1,65E+02
SM	kg	0,00E+00
RSF	MJ	0,00E+00
NRSF	MJ	0,00E+00
W	$m^3$	3,89E-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	Sprengstein, Seljestokken	Grovknusing	Finknusing
HW	kg	6,11E-05	6,11E-05	6,11E-05
NHW	kg	1,03E+00	1,03E+00	1,03E+00
RW	kg	INA*	INA*	INA*

Parameter	Unit	A4
HW	kg	1,12E-04
NHW	kg	7,68E+00
RW	kg	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	Sprengstein, Seljestokken	Grovknusing	Finknusing
CR	kg	0,00E+00	0,00E+00	0,00E+00
MR	kg	9,05E-02	9,05E-02	9,05E-02
MER	kg	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	INA*	INA*	INA*
ETE	MJ	INA*	INA*	INA*

Parameter	Unit	A4
CR	kg	0,00E+00
MR	kg	0,00E+00
MER	kg	0,00E+00
EEE	MJ	INA*
ETE	MJ	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).

#### **Dangerous substances**

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

#### Indoor environment

Not relevant

## **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., (2019) EPD-generator for Norsk Bergindustri, Bakgrunnsrapport for bransjeapplikasjon og datagrunnlag, LCA.no report number 07.19.

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