

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Saint-Gobain Sweden AB, Weber
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-1903-833-EN
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Issue date:	16.10.2019
Valid to:	16.10.2024

weber REP 65 reparationsbruk anl

Saint-Gobain Sweden AB, Weber



www.epd-norge.no



General information

Product:

weber REP 65 reparationsbruk anl

Program operator:

The Norwegian EPD Foundation
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Declaration number:

NEPD-1903-833-EN

ECO Platform reference number:

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A1:2013 serves as core PCR.
Requirements on the EPD for Mineral factory-made mortar.

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 kg weber REP 65 reparationsbruk anl

Declared unit with option:

A1,A2,A3,A4

Functional unit:

Owner of the declaration:

Saint-Gobain Sweden AB, Weber
Contact person: Anders Anderberg
Phone: +46 8 625 6105
e-mail: anders.anderberg@weber.se

Manufacturer:

Saint-Gobain Sweden AB, Weber

Place of production:

Saint-Gobain Sweden AB, Weber, Riksten

Management system:

ISO 9001, ISO 14001

Organisation no:

SE-556241-2592

Issue date: 16.10.2019

Valid to: 16.10.2024

Year of study:

2018

Comparability:

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

Author of the Life Cycle Assessment:

The declaration is developed using eEPD v3.0 from LCA.no
Approval:
Company specific data are:

Collected/registered by: Jenny Knutsson

Internal verification by: Helene Wallgren

Verification:

Independent verification of data, other environmental information and the declaration according to ISO14025:2010, § 8.1.3 and § 8.1.4

External

Third party verifier:

Sign



Senior Research Scientist, Anne Rønning

(Independent verifier approved by EPD Norway)

Approved:

Sign



Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:

weber rep 65 reparationsbruk anl is a hand applied drymix mortar based on CEM I binder with plastic fiber.

weber rep 65 reparationsbruk anl is used for reconditioning and repairing concrete where a repair mortar based on slowcuring, low alkaline building cement is required.

Designed for repairing concrete without using formwork in layers of 5-50 mm thickness. For thicker layers, the product can be applied in several layers. When applying to horizontal surfaces or surfaces with horizontal support, weber rep 65 reparationsbruk anl can be applied in one layer. Contains plastic fibre to reduce the risk of cracking.

weber rep 65 reparationsbruk anl is designed for repairing very high grade concrete (at least C32/40) and where great durability is required. A 20 mm layer will withstand carbonation for 50 years.

Product specification

The composition of the product is described in the following table:

Materials	%
Binder	25-50%
Aggregate	40-70%
Additives	<1%
Packaging	0,02%

Technical data:

weber REP 65 reparationsbruk anl is tested and approved according to EN 1504-3

For further information, see www.se.weber/

Market:

Nordic and Baltic countries

Reference service life, product

The reference service life of the product is similar to the service life of the building.

Reference service life, building

50 years

LCA: Calculation rules

Declared unit:

1 kg weber REP 65 reparationsbruk anl

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.

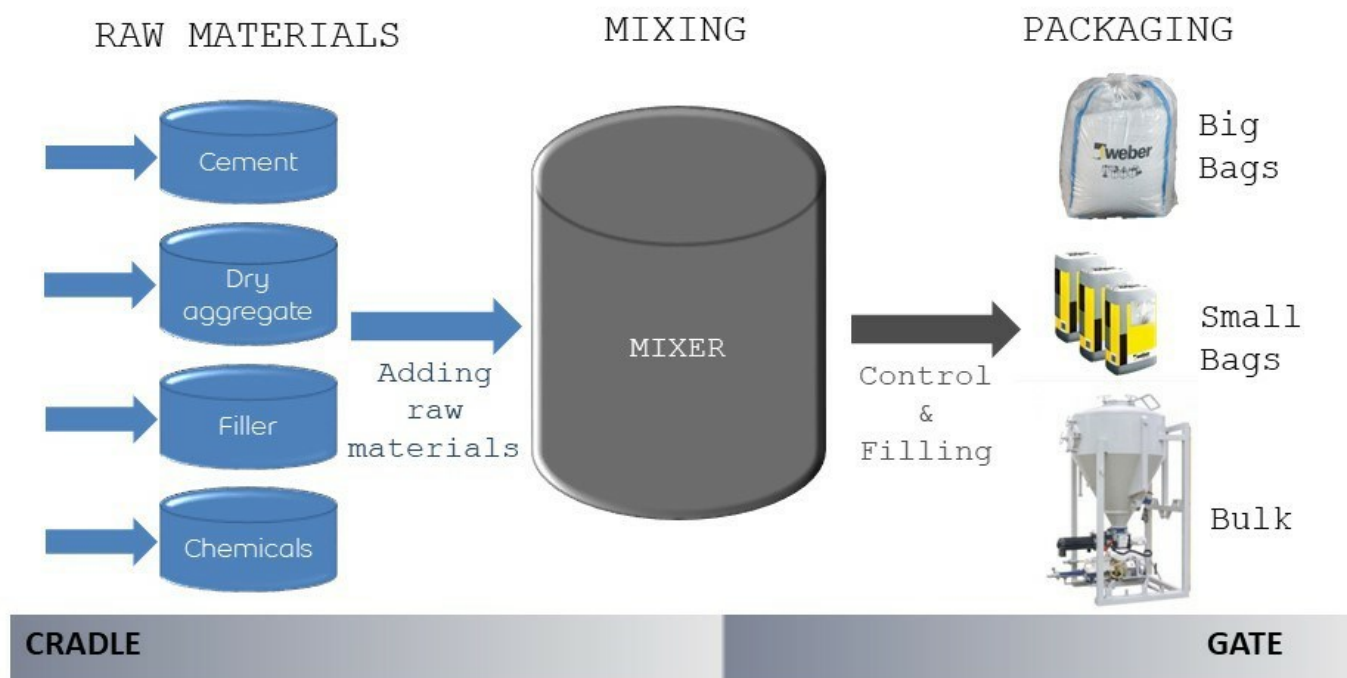
Materials	Source	Data quality	Year
Binder	Østfoldforskning	Database	2013
Cement	Supplier	EPD	2014
Additives	Supplier	EPD	2016
Additives	ecoinvent 3.4	Database	2017
Aggregate	ecoinvent 3.4	Database	2017
Chemicals	ecoinvent 3.4	Database	2017
Filler	ecoinvent 3.4	Database	2017
Packaging	ecoinvent 3.4	Database	2017
Packaging	Modified ecoinvent 3.4	Database	2017
SC 115	Owner of EPD	Database	
SC 199	Owner of EPD	Database	

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:

"All processes from raw material extraction to product from the factory gate are included in the analysis (A1-A3). In addition, transportation to a central warehouse placed in accordance with guidelines issued by the EPD Norway (A4) is included. The flow chart below illustrates the system boundaries for the A1 to A3 part of the analysis."



Additional technical information:

The remaining powder is classified as hazardous waste. Cured material is inactive and not classified as hazardous waste and may be disposed as construction waste to disposal or recycling. The packaging properly emptied is not classified as hazardous waste.

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	38,8 %	Truck, lorry 16-32 tonnes, EURO 5	152	0,044606	l/tkm	6,78
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 for waste treatment	kg	
Dust in the air	kg	
VOC emissions	kg	

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	

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	

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	

Use (B1)

	Unit	Value

Replacement (B4)/Refurbishment (B5)

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

* Described above if relevant

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	

Scenarios after A1-A4 are not included

LCA: Results

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		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	MND	MND	MND	MND	.	MND

Environmental impact

Parameter	Unit	A1	A2	A3	A4
GWP	kg CO ₂ -eq	4,23E-01	1,42E-02	2,02E-02	2,47E-02
ODP	kg CFC11 -eq	3,69E-09	2,62E-09	4,16E-09	4,56E-09
POCP	kg C ₂ H ₄ -eq	6,17E-05	2,71E-06	6,18E-06	4,03E-06
AP	kg SO ₂ -eq	6,91E-04	6,44E-05	1,11E-04	7,89E-05
EP	kg PO ₄ ³⁻ -eq	1,67E-04	1,03E-05	2,45E-05	1,31E-05
ADPM	kg Sb -eq	8,22E-07	3,66E-08	1,97E-08	7,54E-08
ADPE	MJ	3,29E+00	2,12E-01	3,23E-01	3,73E-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	8,21E-01	2,94E-03	2,63E-01	5,43E-03
RPEM	MJ	5,30E-01	0,00E+00	0,00E+00	0,00E+00
TPE	MJ	1,35E+00	2,94E-03	2,63E-01	5,43E-03
NRPE	MJ	2,52E+00	2,17E-01	3,25E-01	3,81E-01
NRPM	MJ	1,17E+00	0,00E+00	0,00E+00	0,00E+00
TRPE	MJ	3,69E+00	2,17E-01	3,25E-01	3,81E-01
SM	kg	8,40E-04	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	1,24E-01	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	3,14E-01	0,00E+00	0,00E+00	0,00E+00
W	m ³	3,19E-03	3,95E-05	4,04E-05	7,14E-05

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 = $9,0 \cdot 10^{-3}$ = 0,009

*INA Indicator Not Assessed

End of life - Waste

Parameter	Unit	A1	A2	A3	A4
HW	kg	3,92E-06	1,22E-07	2,28E-05	2,23E-07
NHW	kg	2,82E-02	9,78E-03	6,81E-02	2,01E-02
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 = $9,0 \cdot 10^{-3}$ = 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	6,49E-07	0,00E+00	3,68E-04	0,00E+00
MER	kg	4,92E-06	0,00E+00	1,55E-03	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 = $9,0 \cdot 10^{-3}$ = 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
Renewable electricity with Guarantee of Origin from LOS (kWh)	Modified ecoinvent 3.4	60,20	g CO ₂ -ekv/kWh

Dangerous substances

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

Name	CASNo	Amount
Portland cement		25-50%

Indoor environment

The product has no impact on the indoor environment.

Bibliography

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 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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 NPCR Part A: Construction products and services. Ver. 1.0. April 2017, EPD-Norge.
 NPCR 009 Part B for technical-chemical products. Ver. 1.0 June 2018, EPD-Norge.

Product Category Rules for Environmental Product Declarations: Institut Bauen und Umwelt e.V. (IBU): Requirements on the EPD for Mineral factory-made mortar.

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