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The Norwegian EPD Foundation

ENVIRONMENTAL PRODUCT DECLARATION

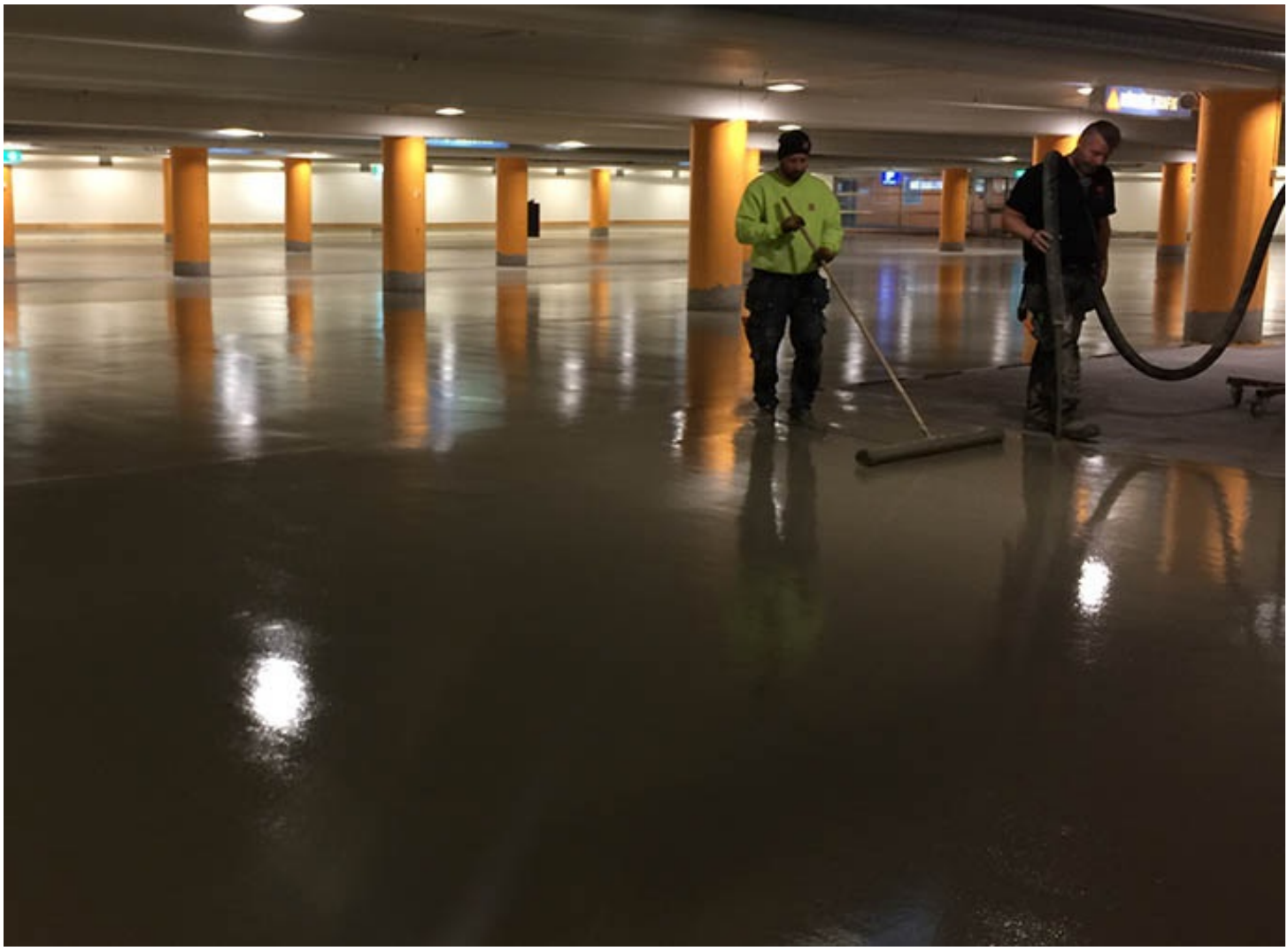
in accordance with ISO 14025, ISO 21930 and EN 15804

Owner of the declaration:	Saint-Gobain Sweden AB, Weber
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-2393-1131-EN
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Issue date:	01.10.2020
Valid to:	01.10.2025

weber REP flow

Saint-Gobain Sweden AB, Weber

www.epd-norge.no



General information

Product:

weber REP flow

Owner of the declaration:

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Manufacturer:

Saint-Gobain Sweden AB, Weber

Declaration number:

NEPD-2393-1131-EN

Place of production:

Saint-Gobain Sweden AB, Riksten

ECO Platform reference number:

Management system:

ISO 9001, ISO 14001

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A1:2013 serves as core PCR.
NPCR 009:2018 Part B for Technical - Chemical products in the building and construction industry

Organisation no:

SE-556241-2592

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: 01.10.2020

Valid to: 01.10.2025

Declared unit:

1 kg weber REP flow

Year of study:

2019

Declared unit with option:

A1,A2,A3,A4,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:

Author of the Life Cycle Assessment:

The declaration is developed using eEPD v4.0 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 flow is a highly flowable drymix mortar based on CEM I binder. Main areas are for concrete renovation on top of old concrete slabs and as a thin solution to standard concrete slabs.
REP flow is used for pouring and laying where a very high-grade and durable concrete is needed. For example, structures that will be exposed to frost and salt, concrete structures exposed to chemical attack and floors subjected to heavy wear. REP flow is mainly used in layers of 10-80 mm.

Product specification

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

Materials	%
Binder	25-50
Aggregate	40-70
Filler	5-10
Additives	<5
Fiber	<1
Packaging	0,02

Technical data:

weber REP flow 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 flow

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.

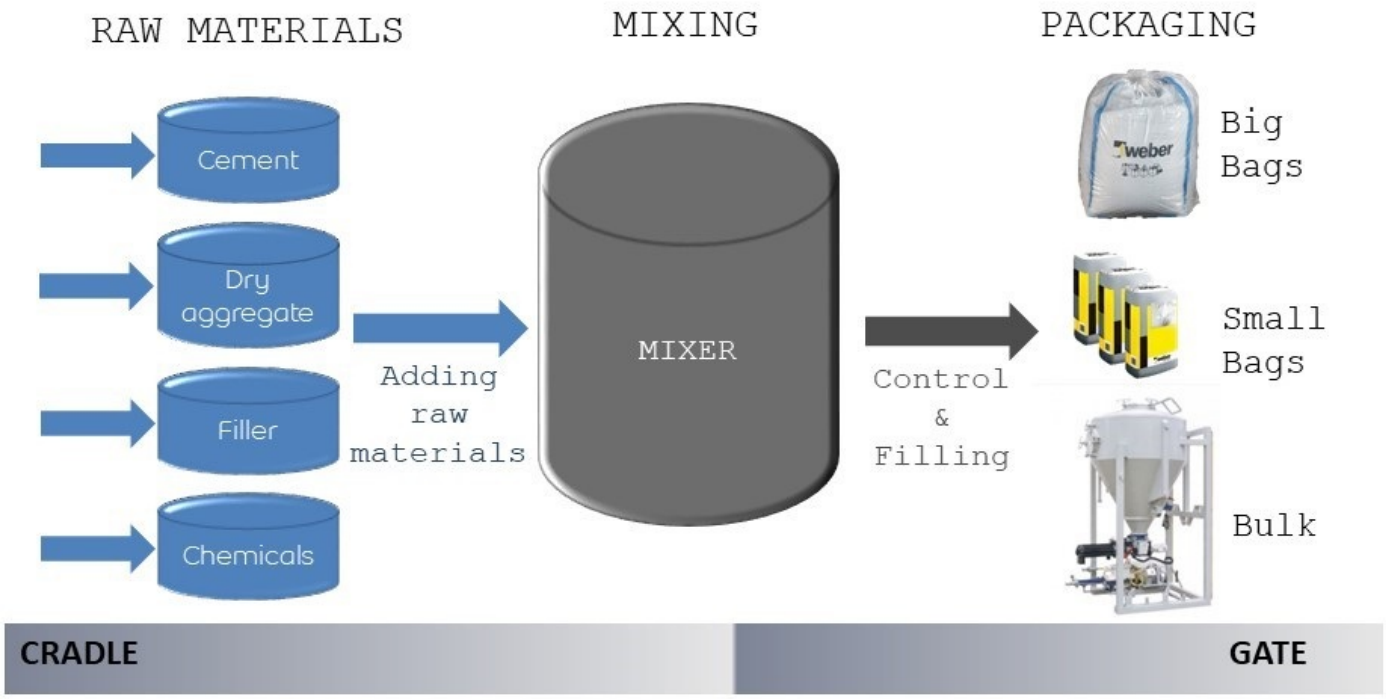
Data quality:

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, 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
Cement	Supplier	EPD	2014
Additives	EPD-EFC-20150091-IAG1-EN	EPD	2015
Additives	ecoinvent 3.4	Database	2017
Aggregate	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 199	Owner of EPD	Database	

System boundary:

All processes from raw material extraction to product transport to the construction site and assembly are included in the analysis (A1 - A5).
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	55,0 %	Truck, lorry over 32 tonnes, EURO 5	300	0,022823	l/tkm	6,85
Railway					l/tkm	
Boat					l/tkm	
Other Transportation					l/tkm	

Additional A4 information	Unit/Range	Value
Lilleström, Norway (truck / truck to jobsite: 798 km)	Multiplication factor GWP/A4	1,86
Karlslunde, Denmark (truck / truck to jobsite: 960 km)	Multiplication factor GWP/A4	2,15
Helsinki, Finland (truck / truck to jobsite: 800 km)	Multiplication factor GWP/A4	1,87

Assembly (A5)

.	Unit	Value
Auxiliary	kg	
Water consumption	m^3	0,0002
Electricity consumption	kWh	0,0020
Other energy carriers	MJ	
Material loss	kg	
Output materials from waste treatment	kg	0,0043
Dust in the air	kg	
VOC emissions	kg	

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 bondaries
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-A3	A4	A5
GWP	kg CO_2 -eq	4,24E-01	2,62E-02	1,51E-04
ODP	kg CFC11 -eq	1,00E-08	5,10E-09	1,00E-10
POCP	kg C_2H_4-eq	6,95E-05	4,23E-06	4,32E-08
AP	kg SO_2 -eq	7,88E-04	8,51E-05	8,06E-07
EP	kg PO_4^{3-} -eq	1,81E-04	1,43E-05	1,55E-07
ADPM	kg Sb -eq	9,52E-07	5,91E-08	1,35E-09
ADPE	MJ	3,17E+00	4,11E-01	1,40E-03

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-A3	A4	A5
RPEE	MJ	1,12E+00	7,42E-03	5,65E-03
RPEM	MJ	5,25E-01	0,00E+00	0,00E+00
TPE	MJ	1,65E+00	7,42E-03	5,65E-03
NRPE	MJ	3,52E+00	4,23E-01	1,36E-02
NRPM	MJ	5,93E-02	0,00E+00	0,00E+00
TRPE	MJ	3,58E+00	4,23E-01	1,36E-02
SM	kg	1,78E-03	0,00E+00	0,00E+00
RSF	MJ	1,74E-01	0,00E+00	5,34E-06
NRSF	MJ	2,90E-01	0,00E+00	0,00E+00
W	m^3	2,01E-03	9,98E-05	2,14E-04

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-A3	A4	A5
HW	kg	7,84E-05	2,25E-07	7,40E-09
NHW	kg	7,68E-02	3,84E-02	1,30E-04
RW	kg	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-A3	A4	A5
CR	kg	0,00E+00	0,00E+00	0,00E+00
MR	kg	1,06E-04	0,00E+00	0,00E+00
MER	kg	1,22E-03	0,00E+00	4,26E-03
EEE	MJ	INA*	INA*	INA*
ETE	MJ	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
Renewable electricity with Guarantee of Origin from LOS (kWh)	Modified ecoinvent 3.4	60,20	g CO2-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	65997-15-1	25-50%

Indoor environment

The product has no impact on the indoor environment.

Bibliography

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