

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

| | |
|--------------------------------|------------------------------|
| Owner of the declaration: | Saint-Gobain Finland Oy |
| Program operator: | The Norwegian EPD Foundation |
| Publisher: | The Norwegian EPD Foundation |
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weber rapid grout - dark colours (18 Dark grey, 20 Graphite, 33 Tan, 35 Khaki, 36 Mocca, 37 Chocolate, 39 Brick and 40 Mahogany)

Saint-Gobain Finland Oy



www.epd-norge.no



General information

Product:

weber rapid grout - dark colours (18 Dark grey, 20 Graphite, 33 Tan, 35 Khaki, 36 Mocca, 37 Chocolate, 39 Brick and 40 Mahogany)

Program operator:

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Declaration number:

NEPD-2151-976-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 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 kg weber rapid grout - dark colours (18 Dark grey, 20 Graphite, 33 Tan, 35 Khaki, 36 Mocca, 37 Chocolate, 39 Brick and 40 Mahogany)

Declared unit with option:

A1,A2,A3,A4

Functional unit:

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)

Owner of the declaration:

Saint-Gobain Finland Oy
Contact person: Anne Kaiser
Phone: +358400289933
e-mail: anne.kaiser@saint-gobain.com

Manufacturer:

Saint-Gobain Finland Oy

Place of production:

Parainen Premix plant
Kalkkitehtaanatie
21600 Parainen
Finland

Management system:

ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007

Organisation no:

FI09515553

Issue date: 06.05.2020

Valid to: 06.05.2025

Year of study:

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:

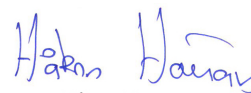
The declaration is developed using eEPD v3.0 from LCA.no
Approval:
Company specific data are:

Collected/registered by: Riitta Helio

Internal verification by: Anne Kaiser

Approved:

Sign



Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:

weber rapid grout is cement based joint grout for grouting floors in indoor and outdoor spaces. It is suitable for grouting vitreous tiles such as porcellanato or natural stone tiles. Weber rapid grout has 16 shades of which 8 shades are included in this EPD (18 Dark grey, 20 Graphite, 33 Tan, 35 Khaki, 36 Mocca, 37 Chocolate, 39 Brick and 40 Mahogany).

Product specification

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

| Materials | % |
|-----------|--------|
| Filler | 40-60% |
| Binder | 30-50% |
| Additives | 2-7% |
| Packaging | 4.2% |

Technical data:

Weber rapid grout complies with EN 13888 - CG2WA class. For further information, see: <https://www.fi.weber/files/fi/2019-04/weber-rapid-grout-Tile-Grout-Product-Datasheet.pdf>

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

60 years.

LCA: Calculation rules

Declared unit:

1 kg weber rapid grout - dark colours (18 Dark grey, 20 Graphite, 33 Tan, 35 Khaki, 36 Mocca, 37 Chocolate, 39 Brick and 40 Mahogany)

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.

Machines and facilities (capital goods) required for and during the production are excluded, as is transportation of employees.

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.

Plant manufacturing data is collected for 2017. Raw materials, transport and production volumes are for 2019.

| Materials | Source | Data quality | Year |
|-----------|--------------------------|--------------|------|
| Chemicals | Chemicals below cut-off | No data | 0 |
| Chemicals | EPD-EFC-20150087-IAG1-EN | EPD | 2015 |
| 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 |
| Packaging | ecoinvent 3.5 | Database | 2018 |
| Pigments | LCA.no | Database | 2018 |
| Binder | Supplier | EPD | 2018 |

System boundary:

All processes from raw material extraction to product transport to the construction site are included in the analysis (A1 - A4). The flow chart below illustrates the system boundaries for the A1 to A3 part of the analysis.



Additional technical information:

The density of the product is 1.2 kg/dm³. Recommended water content for dry product is appr. 0,20-0,23 l/kg.

LCA: Scenarios and additional technical information

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

Transport to market (A4) is calculated based on the default distance of 300 km from NPCR 009. Additional information is given in the table below regarding distances to other relevant markets and calculation factors for converting GWP/A4 to the specific market.

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 |
|--|------------------------------|-------|
| Tullinge, Sweden (truck / ro-ro boat / truck to jobsite: 658 km) | Multiplication factor GWP/A4 | 1.61 |
| Lilleström, Norway (truck / ro-ro boat / truck to jobsite: 1135km) | Multiplication factor GWP/A4 | 3.11 |
| Karlslunde, Denmark (truck / ro-ro boat / truck to jobsite: 1312 km) | Multiplication factor GWP/A4 | 3.67 |
| Tallinn, Estonia (truck / ro-ro boat / truck to jobsite: 563 km) | Multiplication factor GWP/A4 | 1.57 |
| Riga, Latvia (truck / ro-ro boat / truck to jobsite: 869 km) | Multiplication factor GWP/A4 | 2.54 |
| Vilnius, Lithuania (truck / ro-ro boat / truck to jobsite: 1162 km) | Multiplication factor GWP/A4 | 3.47 |

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 | |

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 | |

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 | 4,49E-01 | 1,42E-02 | 3,61E-03 | 2,62E-02 |
| ODP | kg CFC11 -eq | 1,25E-08 | 2,69E-09 | 4,60E-10 | 5,10E-09 |
| POCP | kg C ₂ H ₄ -eq | 6,16E-05 | 2,60E-06 | 2,18E-06 | 4,23E-06 |
| AP | kg SO ₂ -eq | 1,18E-03 | 7,71E-05 | 3,29E-05 | 8,51E-05 |
| EP | kg PO ₄ ³⁻ -eq | 1,96E-04 | 1,55E-05 | 1,22E-05 | 1,43E-05 |
| ADPM | kg Sb -eq | 8,74E-07 | 1,82E-08 | 2,59E-08 | 5,91E-08 |
| ADPE | MJ | 4,42E+00 | 2,13E-01 | 2,32E-02 | 4,11E-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 | 8,30E-01 | 2,71E-03 | 4,36E-01 | 7,42E-03 |
| RPEM | MJ | 6,50E-01 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| TPE | MJ | 1,48E+00 | 2,71E-03 | 4,36E-01 | 7,42E-03 |
| NRPE | MJ | 3,92E+00 | 2,17E-01 | 2,39E-02 | 4,23E-01 |
| NRPM | MJ | 1,01E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| TRPE | MJ | 4,93E+00 | 2,17E-01 | 2,39E-02 | 4,23E-01 |
| SM | kg | 7,74E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| RSF | MJ | 5,31E-02 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| NRSF | MJ | 3,00E-03 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| W | m ³ | 1,46E-03 | 3,70E-05 | 1,26E-05 | 9,98E-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*10⁻³ = 0,009

*INA Indicator Not Assessed

End of life - Waste

| Parameter | Unit | A1 | A2 | A3 | A4 |
|-----------|------|----------|----------|----------|----------|
| HW | kg | 7,81E-06 | 1,05E-07 | 4,58E-05 | 2,25E-07 |
| NHW | kg | 2,62E-02 | 1,08E-02 | 1,96E-02 | 3,84E-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*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 | 4,26E-04 | 0,00E+00 | 3,76E-04 | 0,00E+00 |
| MER | kg | 1,97E-04 | 0,00E+00 | 6,00E-04 | 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 |
|---|------------------------|--------|---------------|
| Renewable electricity with Guarantee of Origin from LOS (kWh) | Modified ecoinvent 3.4 | 60,20 | g CO2-ekv/kWh |
| District heating, Parainen (kWh) | Modified ecoinvent 3.4 | 20,54 | 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 | 30-50% |

Indoor environment

Regarding indoor air quality weber classic grout has a M1 indoor air emission classification granted by the Finnish Building Information Foundation (Suomen Rakennustietosäätiö, RTS).

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

Iversen et al., (2019) EPD generator for Saint-Gobain Weber and Scanspac - Background information and LCA data, LCA.no report number 05.18

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.

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