

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

| | |
|--------------------------------|----------------------------------|
| Owner of the declaration: | Saint-Gobain Sweden AB, Scanspac |
| Program operator: | The Norwegian EPD Foundation |
| Publisher: | The Norwegian EPD Foundation |
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| Valid to: | 03.01.2025 |

Gypfill X-Ray Protection, Promix X-Ray Protection

Saint-Gobain Sweden AB, Scanspac

Scanspac

www.epd-norge.no



General information

Product:

Gypfill X-Ray Protection, Promix X-Ray Protection

Program operator:

The Norwegian EPD Foundation
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Declaration number:

NEPD-1974-868-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 009:2018 Part B for Technical - Chemical products in the
building and construction industry

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 Gypfill X-Ray Protection, Promix X-Ray Protection

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 Sweden AB, Scanspac
Contact person: Christian Nilsson
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Manufacturer:

Saint-Gobain Sweden AB, Scanspac

Place of production:

Saint Gobain Sweden AB, Scanspac
Site: Glanshammar, Kemivägen 7, 70597 Glanshammar, SWEDEN
Site: Sala, Norrängsgatan 35, 73338 Sala, SWEDEN

Management system:

ISO 9001, ISO 14001

Organisation no:

556241-2592

Issue date: 03.01.2020

Valid to: 03.01.2025

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: Ellinor Johansson

Internal verification by: Christian Nilsson

Approved:

Sign



Håkon Hauan
Managing Director of EPD-Norway

Product

Product description:

Gypfill- and Promix X-Ray Protection Joint Mix is a wet ready mixed filler which is specially adapted to be used with lead-free Gyproc X-Ray plasterboards to get a lead-free wall system for X-Ray rooms. The filler is based on barium sulfate and is used for joints ,screw heads and any gaps or surface defects on the board in order to ensure the X-Ray protection. X-Ray Protection is a ready to use product.

X-Ray Protection is a jointing compound for indoor use. Lead-free X-Ray plasterboards replaces lead-containing boards in hospitals and contributes to a lead-free environment. Do not add water or any other substances to the product, it can affect the protection against X-Rays.

MATERIAL CONSUMPTION For joint filling on plasterboard:
approx. 0.3-0.4 l/m.

Product specification

Packaging:

10L plastic bucket

| Materials | % |
|----------------------|---------|
| Filler Dolomite | 20-40% |
| Filler Bariumsulfate | 30-50-% |
| Water | 20-40% |
| Binder | 2,5-10% |
| Additive | 1-3 % |

Technical data:

Binding agent: Latex co-polymer

Solvent: Water

Grain size: Max. 0.20 mm

pH: Approx. 9

Colour: Yellow

Market:

Europe

Reference service life, product

Filler has a limited shelf life and is date-marked. Unopened packaging can be kept in a dark place, free from frost, for up to 12 months. Containers that have been opened must be sealed well.

Reference service life, building

Not part of the declaration.

LCA: Calculation rules

Declared unit:

1 kg Gypfill X-Ray Protection, Promix X-Ray Protection

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 | Chemicals below cut-off | No data | 0 |
| Cellulose Ether | ecoinvent 3.4 | Database | 2017 |
| Filler | ecoinvent 3.4 | Database | 2017 |
| Packaging | ecoinvent 3.4 | Database | 2017 |
| Water | ecoinvent 3.4 | Database | 2017 |
| Packaging | Modified ecoinvent 3.4 | Database | 2017 |
| Filler | ecoinvent 3.5 | Database | 2018 |

System boundary:

A1



A2



A3



A4



Additional technical information:

The product is tested by an independent institute "Radiation Metrology Group of Public Health England" for lead equivalents according to IEC 61331-1:2014.

Meets CE-marking requirements in accordance with EN 13963. Manufactured in accordance with ISO 9001 and ISO 14001.

When treating plasterboards, follow recommendations in accordance with EN 13963.

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 | |

| Assembly (A5) | | | Use (B1) | | |
|---------------------------------------|----------------|-------|----------|------|-------|
| . | Unit | Value | . | 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 | | | | |

| Maintenance (B2)/Repair (B3) | | | Replacement (B4)/Refurbishment (B5) | | |
|------------------------------|----------------|-------|-------------------------------------|------|-------|
| . | Unit | Value | . | Unit | Value |
| Maintenance cycle* | | | Replacement cycle* | | |
| Auxiliary | | | Electricity consumption | kWh | |
| Other resources | | | Replacement of worn parts | | |
| Water consumption | m ³ | | * Described above if relevant | | |
| Electricity consumption | kWh | | | | |
| Other energy carriers | MJ | | | | |
| Material loss | kg | | | | |
| VOC emissions | kg | | | | |

| Operational energy (B6) and water consumption (B7) | | | End of Life (C1, C2) | | |
|--|----------------|-------|---------------------------------------|------|-------|
| . | Unit | Value | . | Unit | Value |
| Water consumption | m ³ | | Hazardous waste disposed | kg | |
| Electricity consumption | kWh | | Collected as mixed construction waste | kg | |
| Other energy carriers | MJ | | Reuse | kg | |
| Power output of equipment | kW | | 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 | 2,46E-01 | 1,10E-01 | 4,32E-03 | 2,62E-02 |
| ODP | kg CFC11 -eq | 1,92E-08 | 2,05E-08 | 6,19E-10 | 5,10E-09 |
| POCP | kg C ₂ H ₄ -eq | 1,34E-04 | 1,77E-05 | 1,62E-06 | 4,23E-06 |
| AP | kg SO ₂ -eq | 2,20E-03 | 3,56E-04 | 3,20E-05 | 8,51E-05 |
| EP | kg PO ₄ ³⁻ -eq | 4,39E-04 | 5,98E-05 | 1,58E-05 | 1,43E-05 |
| ADPM | kg Sb -eq | 1,66E-06 | 2,47E-07 | 1,81E-08 | 5,91E-08 |
| ADPE | MJ | 4,42E+00 | 1,72E+00 | 4,03E-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 | 8,92E-01 | 3,11E-02 | 2,61E-01 | 7,42E-03 |
| RPEM | MJ | 4,82E-01 | 0,00E+00 | 1,45E-04 | 0,00E+00 |
| TPE | MJ | 1,37E+00 | 3,11E-02 | 2,62E-01 | 7,42E-03 |
| NRPE | MJ | 5,06E+00 | 1,77E+00 | 4,28E-02 | 4,23E-01 |
| NRPM | MJ | 1,12E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| TRPE | MJ | 6,17E+00 | 1,77E+00 | 4,28E-02 | 4,23E-01 |
| SM | kg | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| RSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| NRSF | MJ | 0,00E+00 | 0,00E+00 | 0,00E+00 | 0,00E+00 |
| W | m ³ | 6,33E-02 | 4,18E-04 | 4,85E-04 | 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 = $9,0 \cdot 10^{-3} = 0,009$

*INA Indicator Not Assessed

End of life - Waste

| Parameter | Unit | A1 | A2 | A3 | A4 |
|-----------|------|----------|----------|----------|----------|
| HW | kg | 4,10E-06 | 9,44E-07 | 1,69E-04 | 2,25E-07 |
| NHW | kg | 1,53E-01 | 1,61E-01 | 6,96E-03 | 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 = $9,0 \cdot 10^{-3} = 0,009$

*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 | 0,00E+00 | 0,00E+00 | 7,61E-04 | 0,00E+00 |
| MER | kg | 0,00E+00 | 0,00E+00 | 9,79E-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 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., (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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