

# ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and  
EN 15804:2012+A2:2019 for:



THE INTERNATIONAL EPD® SYSTEM  
Registration number  
The International EPD® System:  
**S-P-10301**



## weber.xerm 840

**Version 1**

**Date of publication: 2023/08/10**

**Validity: 5 years**

**Valid until: 2028/08/10**

**Scope of the EPD®: Germany**



Production plant: Weilerswist

# General information

## Company information

**Manufacturer:** Saint-Gobain Weber GmbH, Schanzenstraße 84, 40549 Düsseldorf

**Production plant:** Weilerswist

**Management system - related certifications:** DIN EN ISO 9001 – 42-Z-06 QMS e

**Programme used:** EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declaration - core rules for the product category of construction product and The International EPD® System

**PCR identification:** PCR 2019:14 version 1.3 for Construction products and Construction services

**Prepared by:** IVL Swedich Environmental Research Institute, EPD International Secretariat

**UN CPC CODE:** 37510 Non-refractory mortars and concretes

**Owner of the declaration:** Saint-Gobain Weber GmbH, Schanzenstraße 84, 40549 Düsseldorf

**Product name and manufacturer represented:** This EPD describes the environmental impact of weber.xerm 840

**EPD® prepared by:** Yves Coquelet, (yves.coquelet@saint-gobain.com )

and Sophia Stark ,(sophia.stark@saint-gobain.com )

**Geographical scope of the EPD®:** Germany

**EPD® registration number:** S-P-10301

**Declaration issued:** 2023/08/10, valid until: 2028/08/10 **Demonstration of verification:** An independent verification of the declaration was made, according to EN ISO 14025:2010. This verification was external and conducted by a third party, based on the PCR mentioned above (see information below).

## Programme information

|                                                                                                                                                              |                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| <b>PROGRAMME:</b>                                                                                                                                            | The International EPD® System                                    |
| <b>ADDRESS:</b>                                                                                                                                              | EPD International AB - Box 210 60 - SE-100 31 Stockholm - Sweden |
| <b>WEBSITE:</b>                                                                                                                                              | <a href="http://www.environdec.com">www.environdec.com</a>       |
| <b>E-MAIL:</b>                                                                                                                                               | <a href="mailto:info@environdec.com">info@environdec.com</a>     |
| CEN standard EN 15804:2012 + A2:2019 serves as the Core Product Category Rules (PCR)                                                                         |                                                                  |
| <b>Product category rules (PCR):</b> PCR 2019:14 Construction Products, version 1.3.0                                                                        |                                                                  |
| <b>PCR review was conducted by:</b> The Technical Committee of the International EPD® System                                                                 |                                                                  |
| <b>President:</b> Massimo Marino                                                                                                                             |                                                                  |
| <b>Independent third-party verification of the declaration and data, according to ISO 14025:2006:</b>                                                        |                                                                  |
| <input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification                                                      |                                                                  |
| <b>Third party verifier:</b> Dr Andrew NORTON                                                                                                                |                                                                  |
| Tlf: +44 (0)1244 940204 – email: <a href="mailto:a.norton@renuables.co.uk">a.norton@renuables.co.uk</a>                                                      |                                                                  |
| Approved by: The International EPD® System                                                                                                                   |                                                                  |
| <b>Procedure for follow-up of data during EPD validity involves third part verifier:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                                                                  |

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804. For further information about comparability, see EN 15804 and ISO 14025.

# Product description

## Product description and description of use

The product family considered in this study is cement-based. The tile installation system of the BlueComfort family can be used in new construction as well as renovation in both, living and wet rooms.

Our tiling system enables waterproofing, bonding and grouting of tiles and natural stone coverings on all types of interior and exterior surfaces.

This EPD applies for one specific product manufactured by Saint-Gobain Weber GmbH in the plant located in Weilerswist, Germany.

All technical characteristics and properties for any product can be found on the website

## Technical data/physical characteristics:

| Technical data/physical characteristics |         |
|-----------------------------------------|---------|
| Reaction to fire                        | A1      |
| Maturation time                         | 3 Min.  |
| Processing time                         | 3 h     |
| Open time/Insertion time                | 30 Min. |
| Thickness (mm)                          | 1-10 mm |
| Fully loadable                          | > 7 d   |

## Declaration of the main product components and/or materials

| PRODUCT                     | WEIGHT (KG) | Post-consumer recycled material, weight % | Biogenic material weight kg C/kg |
|-----------------------------|-------------|-------------------------------------------|----------------------------------|
| Weber.xerm 840              | 1 kg        | 1 - 5 %                                   | 1.12E-03 kg C/kg                 |
| PRODUCT COMPONENTS          | WEIGHT (%)  | Post-consumer recycled material, weight % | Biogenic material weight kg C/kg |
| Inert fillers               | 55 - 70 %   | 0 %                                       | < 1 %                            |
| Mineral and organic binders | 30 - 35 %   | 5 - 15 %                                  | < 1 %                            |
| Additives                   | 1 - 2 %     | 0 %                                       | < 1 %                            |
| PACKAGING MATERIALS         | WEIGHT kg   | WEIGHT (%) Vs the product                 | Biogenic material weight kg C/kg |
| Foil bag                    | 0,0036 kg   | 0,36 %                                    | << 0,01 kg C/kg                  |
| Pallet                      | 0,021       | 2,1 %                                     | 1,07E-02 kg C/kg                 |

During the life cycle of the product any hazardous substance listed in the "Candidate List of Substances of Very High Concern (SVHC) for authorization" has been used in a percentage higher than 0.1% of the weight of the product. The verifier and the PROGRAMME operator do not make any claim nor have any responsibility of the legality of the product.

## LCA calculation information

|                                              |                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TYPE OF EPD</b>                           | Cradle to grave and module D                                                                                                                                                                                                                                                                                                         |
| <b>DECLARED UNIT</b>                         | 1 kg of dry mortar                                                                                                                                                                                                                                                                                                                   |
| <b>SYSTEM BOUNDARIES</b>                     | Mandatory Stages = A1-A3 ; B1-B7 ; C1-C4 and D                                                                                                                                                                                                                                                                                       |
| <b>REFERENCE SERVICE LIFE (RSL)</b>          | 50 years                                                                                                                                                                                                                                                                                                                             |
| <b>CUT-OFF RULES</b>                         | Life Cycle Inventory data for a minimum of 99% of total inflows to the upstream and core module shall be included.<br>Flows related to human activities such as employee transport are excluded.<br>Transportation in-site is excluded<br>The construction of plants, production of machines and transportation systems are excluded |
| <b>ALLOCATIONS</b>                           | Allocation criteria are based on mass.<br>The polluter pays and modularity principles have been followed.                                                                                                                                                                                                                            |
| <b>GEOGRAPHICAL COVERAGE AND TIME PERIOD</b> | Scope: Germany<br>Data is collected from 1 production site Weilerswist located in Germany<br>Data collected for the year 2022<br>Cradle to grave study                                                                                                                                                                               |
| <b>BACKGROUND DATA SOURCE</b>                | The databases Gabi 2022 and ecoinvent v.3.8                                                                                                                                                                                                                                                                                          |
| <b>SOFTWARE</b>                              | GaBi 10                                                                                                                                                                                                                                                                                                                              |

According to EN 15804:2012+A2:2019, EPDs of construction products may not be comparable if they do not comply with this standard.

According to ISO 21930:2017, EPDs might not be comparable if they are from different programmes.

## LCA scope

System boundaries (X=included. MND=module not declared)

|                    | PRODUCT STAGE       |           |               | CONSTRUCTION STAGE |                                   | USE STAGE |             |        |             |               |                        |                       | END OF LIFE STAGE          |           |                  |          | BENEFITS AND LOADS BEYOND THE SYSTEM |
|--------------------|---------------------|-----------|---------------|--------------------|-----------------------------------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|--------------------------------------|
|                    | Raw material supply | Transport | Manufacturing | Transport          | Construction-Installation process | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-recovery                       |
| Module             | A1                  | A2        | A3            | A4                 | A5                                | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C1                         | C2        | C3               | C4       | D                                    |
| Modules declared   | X                   | X         | X             | X                  | X                                 | X         | X           | X      | X           | X             | X                      | X                     | X                          | X         | X                | X        | X                                    |
| Geography          | DE                  | DE        | DE            | DE                 | DE                                | DE        | DE          | DE     | DE          | DE            | DE                     | DE                    | DE                         | DE        | DE               | DE       | DE                                   |
| Specific data used | 12 % GWP- GHG       |           |               |                    |                                   |           |             |        |             |               |                        |                       |                            |           |                  |          |                                      |
| Variation products | < 10%               |           |               |                    |                                   |           |             |        |             |               |                        |                       |                            |           |                  |          |                                      |
| Variation sites    | < 10 %              |           |               |                    |                                   |           |             |        |             |               |                        |                       |                            |           |                  |          |                                      |

## Life cycle stages

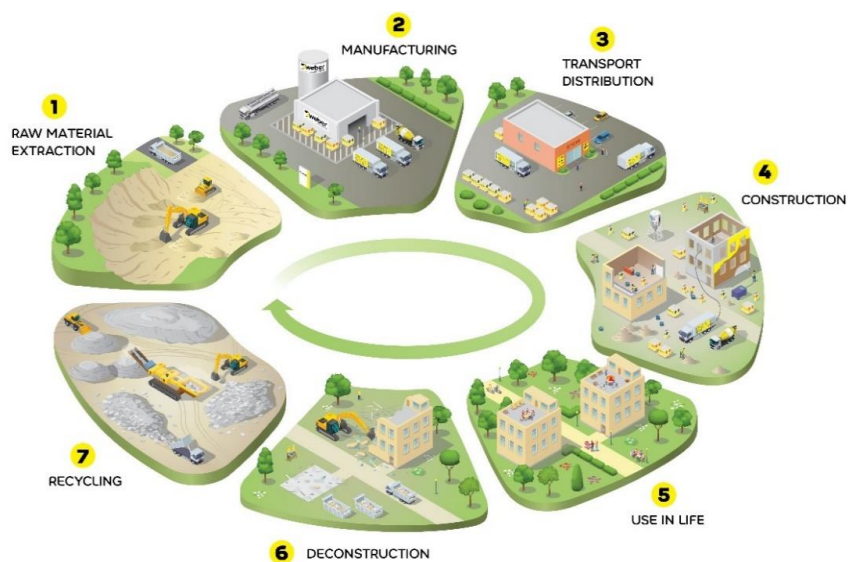


Figure 1.Flow diagram of the Life Cycle

## **A1-A3, Product stage**

### **Description of the stage:**

The product stage of the Weber products is subdivided into 3 modules A1, A2 and A3 respectively “Raw material supply”, “transport” and “manufacturing”.

The aggregation of the modules A1, A2 and A3 is a possibility considered by the EN 15804 standard. This rule is applied in this EPD.

### **Description of the scenarios and other additional technical information:**

#### **A1, Raw materials supply**

This part takes into account the extraction and processing of all raw materials and energy which occurs upstream to the studied manufacturing process.

Specifically, the raw material supply covers sourcing (quarry) and production of all binder components and additives (e.g. sand, cement, rheology agent and others).

Use of electricity, fuels and auxiliary materials in the production is taken into account too. The environmental profile of these energy carriers is modeled for local conditions.

#### **A2, Transport to the manufacturer**

The raw materials are transported to the manufacturing site. In this case, the modelling includes road and boat transportations (average values) of each raw material.

#### **A3, Manufacturing**

This module includes manufacturing of products but also besides on-site activities such as grinding, drying, storing, mixing, packing and internal transportation.

The manufacturing process also collect data on the combustion of refinery products, such as diesel and gasoline, related to the production process.

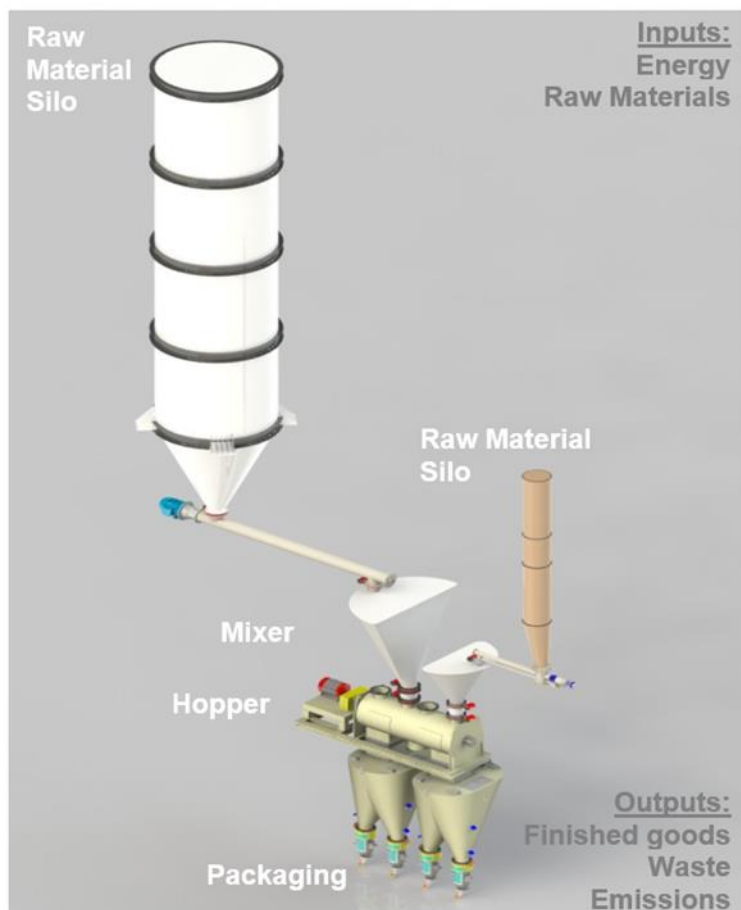
Packaging-related flows in the production process and all up-stream packaging are included in the manufacturing module, i.e. wooden pallets, paper sack and LDPE film.

Apart from production of packaging material, the supply and transport of packaging material are also considered in the LCA model. They are reported and allocated to the module where the packaging is applied. Data on packaging waste created during this step are then generated. It is assumed that packaging waste generated in the course of production and up-stream processes is 100% collected and either recycled or incinerated with energy recovery.

## Manufacturing process flow diagram

### System diagram:

Manufacturing process flow diagram: Basic scheme of a Mortar Production line



## A4-A5, Construction process stage

**Description of the stage:** The construction process is divided into 2 modules: A4, transport to the building site and A5, installation in the building

### A4, Transport to the building site:

This module includes transport from the production gate to the building site. Transport is calculated on the basis of a scenario with the parameters described in the following table.

| PARAMETER                                                                                                    | VALUE                                                                         |
|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc. | Freight truck trailer 15,2 t payload, diesel consumption 38 liters for 100 km |
| Distance                                                                                                     | 335 km                                                                        |
| Capacity utilisation (including empty returns)                                                               | 44,4% of the capacity in mass<br>21% of empty returns                         |
| Bulk density of transported products*                                                                        | 1526 kg / m <sup>3</sup>                                                      |
| Volume capacity utilisation factor                                                                           | 1 (by default)                                                                |



## A5, Installation in the building: this module includes:

No additional accessory was taken into account for the implementation phase insulation product.  
No energy is needed to install the product (manual installation without tool)

| PARAMETER                                                                                                                                                                          | VALUE (expressed per declared unit)                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| secondary materials for installation<br>(specified by materials)                                                                                                                   | none                                                                                                                                                         |
| Water use                                                                                                                                                                          | 0.3 l / FU                                                                                                                                                   |
| Other resource use                                                                                                                                                                 | None                                                                                                                                                         |
| Quantitative description of energy type (regional mix) and consumption during the installation process                                                                             | 0.0396 MJ/m <sup>2</sup>                                                                                                                                     |
| Wastage of materials on the building site before waste processing, generated by the product's installation<br>(specified by type)                                                  | 5% losses during installation                                                                                                                                |
| Output materials (specified by type) as results of waste processing at the building site e.g. of collection for recycling, for energy recovering, disposal<br>(specified by route) | Polyethylene bag: 0.0036 kg to landfill<br>Polyethylene film: <0.01 kg to landfill<br>Wooden pallet: 0.0027 kg to landfill<br>Wooden pallet: 0.019 kg reused |
| Direct emissions to ambient air, soil and water                                                                                                                                    | None                                                                                                                                                         |

## B1-B7, Use stage (excluding potential savings)

Description of the stage: the use stage is divided into the following modules:

- The use stage is divided into the following modules: Use – B1, Maintenance – B2, Repair – B3, Replacement – B4, Refurbishment – B5, Operational energy and water use – B6 and B7
- Once installation is complete, no actions or technical operations are required during the use stages until the end of life stage. The product does not require any energy, water or material input to keep it in working order. Furthermore, it is not exposed to the indoor atmosphere of the building, nor is it in contact with the circulating water or the ground.
- The product covered by this EPD does not require any maintenance as it is aimed for pavements regularization. In addition, due to the product durability; maintenance, repair, replacement or restoration are irrelevant in the specified applications. Declared product performances therefore assume a working life that equals the building's lifetime. For this reason, no environmental loads are attributed to any of the modules between B1 and B5.

## C1-C4, End of Life Stage

**Description of the stage:** Landfill is considered to be the worst scenario.  
The end-of-life stage is divided into the following modules:

### C1, Deconstruction, demolition

The de-construction and/or dismantling of the product take part of the demolition of the entire building. In our case, a small amount of energy is considered 0.05 MJ/m<sup>2</sup>

### C2, Transport to waste processing

The model use for the transportation is applied

### C3, Waste processing for reuse, recovery and/or recycling

The product is considered to be landfilled without reuse, recovery or recycling. No environmental loads are attributed to this stage.

### C4, Disposal

The product is considered to be landfilled

## Description of the scenarios and additional technical information for the End of life:

| PARAMETER                                                  | VALUE/DESCRIPTION                                                                                                            |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Collection process specified by type                       | 1,09 kg collected with mixed construction waste (1 kg of dry powder + 0,09 kg of water content linked to hydraulic binder) . |
| Recovery system specified by type                          | 0% of Waste                                                                                                                  |
| Disposal specified by type                                 | 100 % to municipal landfill                                                                                                  |
| Assumptions for scenario development (e.g. transportation) | Average truck trailer with 27t payload, diesel consumption 38L/100km ; 100km distance to landfill                            |

## D, Reuse/recovery/recycling potential

Packaging could be partly reuse recycle or landfill, The D module contains the benefits or load linked to the future use of recycled packaging

100% of wastes are landfilled, so no recycling, recovery or reuse has been considered.

## LCA results

As specified in EN 15804:2012+A2:2019 and also the Product-Category Rules, the environmental impacts are declared and reported using the baseline characterization factors from EC-JRC. Specific data has been supplied by the plant, and generic data come from GABI and Ecoinvent databases.

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

All emissions to air, water, and soil, and all materials and energy used have been included.

LCA data results are detailed on the following tables and they refer to a declared unit of 1 kg of weber.xerm 840.

Description of the system boundary, X = Included in LCA, MND = Module Not Declared

# Environmental Impacts

|                                                                                     |                                                             | PRODUCT STAGE | CONSTRUCTION STAGE |                 | USE STAGE |                |           |                |                  |                           |                          | END OF LIFE STAGE              |              |                     |             | REUSE, RECOVERY RECYCLING    |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------|--------------------|-----------------|-----------|----------------|-----------|----------------|------------------|---------------------------|--------------------------|--------------------------------|--------------|---------------------|-------------|------------------------------|
| Environmental indicators                                                            |                                                             | A1 / A2 / A3  | A4 Transport       | A5 Installation | B1 Use    | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Operational energy use | B7 Operational water use | C1 Deconstruction / demolition | C2 Transport | C3 Waste processing | C4 Disposal | D Reuse, recovery, recycling |
|    | Climate Change [kg CO2 eq.]                                 | 3,29E-01      | 8,65E-03           | 2,74E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 4,89E-03                       | 5,27E-05     | 0                   | 6,28E-02    | 0                            |
|                                                                                     | Climate Change (fossil) [kg CO2 eq.]                        | 3,24E-01      | 8,62E-03           | 2,05E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 4,88E-03                       | 5,28E-05     | 0                   | 1,65E-02    | 0                            |
|                                                                                     | Climate Change (biogenic) [kg CO2 eq.]                      | 5,45E-03      | -1,19E-05          | 6,90E-03        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 6,37E-06                       | -5,20E-07    | 0                   | 4,62E-02    | 0                            |
|                                                                                     | Climate Change (land use change) [kg CO2 eq.]               | 2,08E-04      | 4,79E-05           | 2,38E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 6,29E-08                       | 3,58E-07     | 0                   | 4,76E-05    | 0                            |
|    | Ozone depletion [kg CFC-11 eq.]                             | 1,31E-08      | 5,15E-16           | 7,24E-10        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2,91E-16                       | 5,22E-18     | 0                   | 6,13E-17    | 0                            |
|    | Acidification terrestrial and freshwater [Mole of H+ eq.]   | 9,00E-04      | 5,53E-05           | 6,67E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 7,59E-06                       | 3,04E-07     | 0                   | 1,19E-04    | 0                            |
|    | Eutrophication freshwater [kg P eq.]                        | 3,26E-03      | 7,89E-08           | 1,65E-04        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2,83E-09                       | 5,83E-10     | 0                   | 8,72E-08    | 0                            |
|                                                                                     | Eutrophication freshwater [kg (PO4)³ eq.]                   | 1,06E-03      | 2,57E-08           | 5,37E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 9,23E-10                       | 1,90E-10     | 0                   | 2,84E-08    | 0                            |
|                                                                                     | Eutrophication marine [kg N eq.]                            | 4,34E-04      | 2,72E-05           | 3,22E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2,61E-06                       | 1,48E-07     | 0                   | 3,05E-05    | 0                            |
|                                                                                     | Eutrophication terrestrial [Mole of N eq.]                  | 2,57E-03      | 3,02E-04           | 2,09E-04        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2,88E-05                       | 1,64E-06     | 0                   | 3,35E-04    | 0                            |
|  | Photochemical ozone formation - human health [kg NMVOC eq.] | 7,22E-04      | 5,12E-05           | 5,46E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 7,92E-06                       | 2,79E-07     | 0                   | 1,06E-04    | 0                            |
|  | Resource use. mineral and metals [kg Sb eq.]¹               | 1,21E-06      | 7,19E-10           | 6,88E-08        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 1,95E-10                       | 5,36E-12     | 0                   | 1,48E-09    | 0                            |
|                                                                                     | Resource use. energy carriers [MJ]¹                         | 3,70E+00      | 1,15E-01           | 2,51E-01        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 6,42E-02                       | 6,98E-04     | 0                   | 2,17E-01    | 0                            |
|  | Water deprivation potential [m³ world equiv.]¹              | 7,71E-02      | 7,71E-05           | 1,81E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 1,31E-05                       | 5,94E-07     | 0                   | 1,73E-03    | 0                            |

¹ The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

# Resources Use

| Resources Use indicators                                                                                                                                     | PRODUCT STAGE | CONSTRUCTION STAGE |                 | USE STAGE |                |           |                |                  |                           |                          | END OF LIFE STAGE              |              |                     |             | D REUSE, RECOVERY, RECYCLING |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-----------------|-----------|----------------|-----------|----------------|------------------|---------------------------|--------------------------|--------------------------------|--------------|---------------------|-------------|------------------------------|
|                                                                                                                                                              | A1 / A2 / A3  | A4 Transport       | A5 Installation | B1 Use    | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Operational energy use | B7 Operational water use | C1 Deconstruction / demolition | C2 Transport | C3 Waste processing | C4 Disposal | D Reuse, recovery, recycling |
|  Use of renewable primary energy (PERE) [MJ]                                | 4,69E-01      | 6,53E-03           | 3,26E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2,54E-04                       | 4,83E-05     | 0                   | 2,84E-02    | 0                            |
|  Primary energy resources used as raw materials (PERM) [MJ]                 | 2,86E-01      | 0                  | 2,73E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                            |
|  Total use of renewable primary energy resources (PERT) [MJ]                | 7,55E-01      | 6,53E-03           | 6,00E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2,54E-04                       | 4,83E-05     | 0                   | 2,84E-02    | 0                            |
|  Use of non-renewable primary energy (PENRE) [MJ]                           | 3,70E+00      | 1,15E-01           | 2,52E-01        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 6,44E-02                       | 7,00E-04     | 0                   | 2,17E-01    | 0                            |
|  Non-renewable primary energy resources used as raw materials (PENRM) [MJ] | 6,45E-01      | 0                  | 4,15E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                            |
|  Total use of non-renewable primary energy resources (PENRT) [MJ]         | 4,34E+00      | 1,15E-01           | 2,93E-01        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 6,44E-02                       | 7,00E-04     | 0                   | 2,17E-01    | 0                            |
|  Input of secondary material (SM) [kg]                                    | 0             | 0                  | 0               | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                            |
|  Use of renewable secondary fuels (RSF) [MJ]                              | 0             | 0                  | 0               | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                            |
|  Use of non-renewable secondary fuels (NRSF) [MJ]                         | 0             | 0                  | 0               | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                            |
|  Use of net fresh water (FW) [m3]                                         | 1,88E-03      | 7,39E-06           | 4,28E-04        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 4,75E-07                       | 5,58E-08     | 0                   | 5,47E-05    | 0                            |

## Waste Category & Output flows

|                                                                                     |                                          | PRODUCT<br>STAGE | CONSTRUCTION<br>STAGE | USE STAGE       |        |                |           |                |                  |                              |                             | END OF LIFE STAGE                 |              |                     |             | D REUSE.<br>RECOVERY.<br>RECYCLING |
|-------------------------------------------------------------------------------------|------------------------------------------|------------------|-----------------------|-----------------|--------|----------------|-----------|----------------|------------------|------------------------------|-----------------------------|-----------------------------------|--------------|---------------------|-------------|------------------------------------|
| Waste Category & Output Flows                                                       |                                          | A1 / A2 / A3     | A4 Transport          | A5 Installation | B1 Use | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Operational energy<br>use | B7 Operational water<br>use | C1 Deconstruction /<br>demolition | C2 Transport | C3 Waste processing | C4 Disposal | D Reuse. recovery.<br>recycling    |
|    | Hazardous waste disposed (HWD) [kg]      | 8,34E-11         | 5,52E-13              | 1,70E-10        | 0      | 0              | 0         | 0              | 0                | 0                            | 0                           | 2,53E-13                          | 3,71E-15     | 0                   | 3,31E-09    | 0                                  |
|    | Non-hazardous waste disposed (NHWD) [kg] | 2,35E-02         | 1,65E-05              | 5,58E-02        | 0      | 0              | 0         | 0              | 0                | 0                            | 0                           | 1,35E-05                          | 1,14E-07     | 0                   | 1,09E+00    | 0                                  |
|    | Radioactive waste disposed (RWD) [kg]    | 4,60E-05         | 1,42E-07              | 2,48E-06        | 0      | 0              | 0         | 0              | 0                | 0                            | 0                           | 7,18E-08                          | 1,30E-09     | 0                   | 2,47E-06    | 0                                  |
|    | Components for re-use (CRU) [kg]         | 0                | 0                     | 0               | 0      | 0              | 0         | 0              | 0                | 0                            | 0                           | 0                                 | 0            | 0                   | 0           | 0                                  |
|   | Materials for Recycling (MFR) [kg]       | 1,01E-02         | 0                     | 5,05E-04        | 0      | 0              | 0         | 0              | 0                | 0                            | 0                           | 0                                 | 0            | 0                   | 0           | 0                                  |
|  | Material for Energy Recovery (MER) [kg]  | 0                | 0                     | 0               | 0      | 0              | 0         | 0              | 0                | 0                            | 0                           | 0                                 | 0            | 0                   | 0           | 0                                  |
|  | Exported electrical energy (EEE) [MJ]    | 0                | 0                     | 0               | 0      | 0              | 0         | 0              | 0                | 0                            | 0                           | 0                                 | 0            | 0                   | 0           | 0                                  |
|  | Exported thermal energy (EET) [MJ]       | 0                | 0                     | 0               | 0      | 0              | 0         | 0              | 0                | 0                            | 0                           | 0                                 | 0            | 0                   | 0           | 0                                  |

## Additional voluntary indicators from EN 15804 (according to ISO 21930:2017)

|                                                                                   |                                   | PRODUCT STAGE | CONSTRUCTION STAGE |                 | USE STAGE |                |           |                |                  |                           |                          | END OF LIFE STAGE              |              |                     |             | REUSE. RECOVERY RECYCLING    |
|-----------------------------------------------------------------------------------|-----------------------------------|---------------|--------------------|-----------------|-----------|----------------|-----------|----------------|------------------|---------------------------|--------------------------|--------------------------------|--------------|---------------------|-------------|------------------------------|
| Environmental indicators                                                          |                                   | A1 / A2 / A3  | A4 Transport       | A5 Installation | B1 Use    | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Operational energy use | B7 Operational water use | C1 Deconstruction / demolition | C2 Transport | C3 Waste processing | C4 Disposal | D Reuse. recovery. recycling |
|  | GWP-GHG [kg CO2 eq.] <sup>2</sup> | 3,24E-01      | 8,62E-03           | 2,05E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 4,88E-03                       | 5,28E-05     | 0                   | 1,65E-02    | 0                            |

<sup>2</sup> This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO<sub>2</sub> is set to zero.

## Information on biogenic carbon content

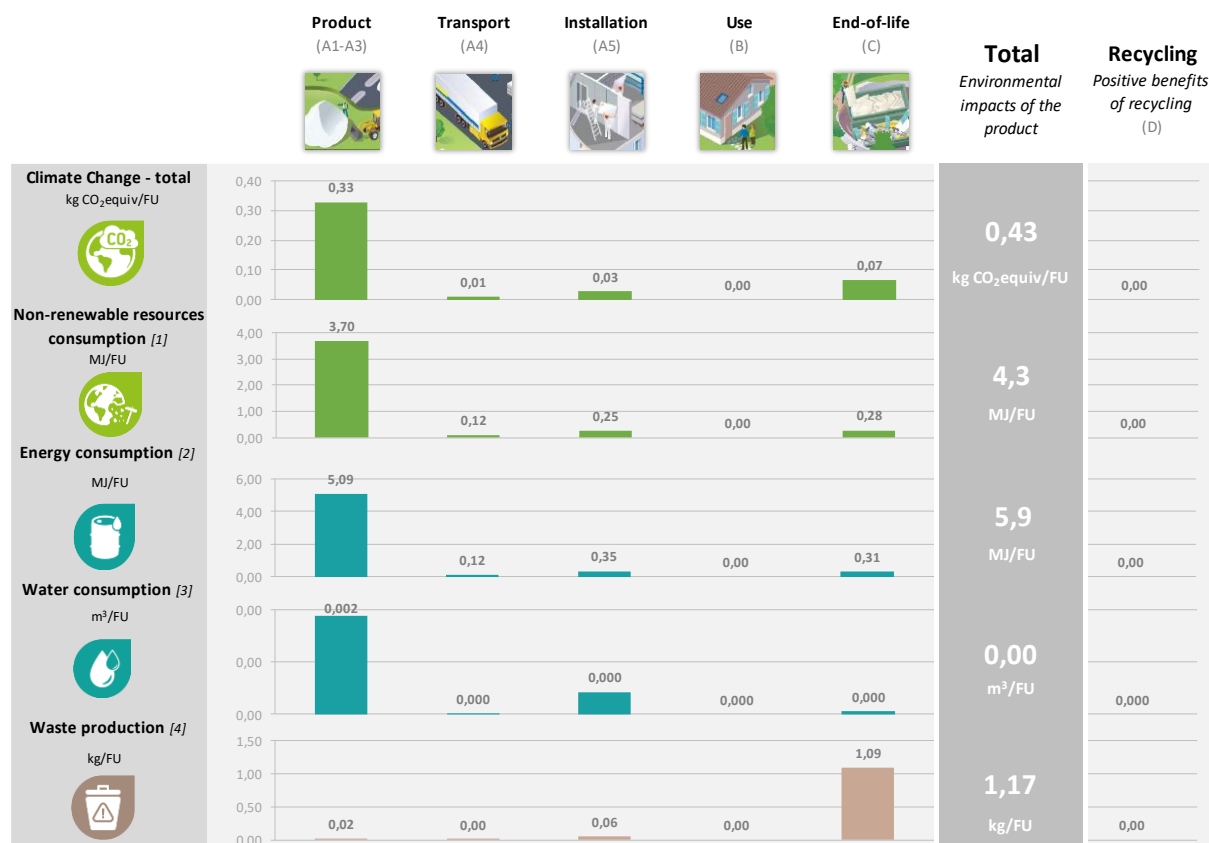
|                                                                                   |                                           | PRODUCT STAGE |
|-----------------------------------------------------------------------------------|-------------------------------------------|---------------|
| Biogenic Carbon Content in kg C                                                   |                                           | A1 / A2 / A3  |
|  | Biogenic carbon content in product [kg]   | 1.12E-03      |
|  | Biogenic carbon content in packaging [kg] | 1.07E-02      |

*Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.*



# LCA interpretation

The following figure refers to a declared unit of weber.xerm 840



[1] This indicator corresponds to the abiotic depletion potential of fossil resources.

[2] This indicator corresponds to the total use of primary energy.

[3] This indicator corresponds to the use of net fresh water.

[4] This indicator corresponds to the sum of hazardous, non-hazardous and radioactive waste disposed.

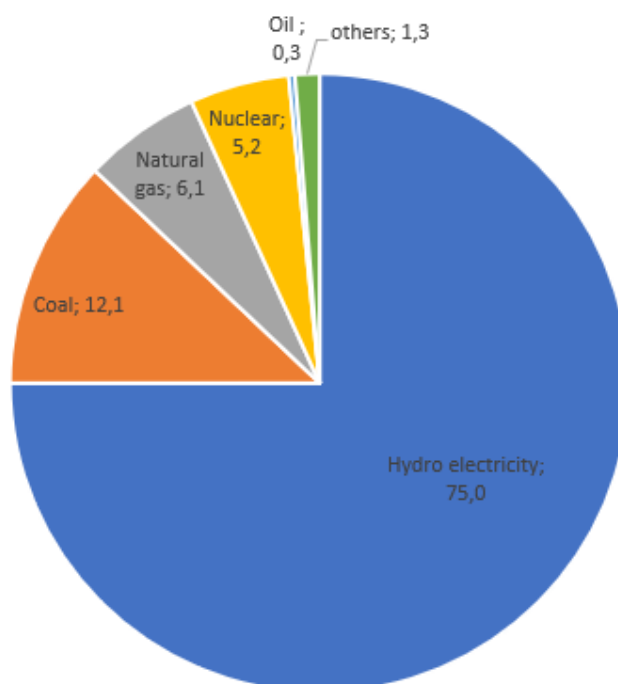
With the graphic views above, it is possible to assess which steps of the LCA are the most impacting for the chosen indicators

The main environmental impacts of the product life cycle come from extraction and processing of raw materials (A1-A3). The Product stage is responsible for over 75% of the impact for following indicators: Climate Change. Ozone depletion. Acidification terrestrial and freshwater. Eutrophication freshwater. Eutrophication marine. Eutrophication terrestrial. Photochemical ozone formation - human health. Resource use, mineral and metals. Resource use, energy carriers and Water scarcity.

## Additional information:

### Electricity information

| TYPE OF INFORMATION                                   | DESCRIPTION                                                          |
|-------------------------------------------------------|----------------------------------------------------------------------|
| Location                                              | Representative of Electricity purchased by Saint-Gobain Weber GmbH   |
| Geographical representativeness description           | Split of residual mix in Germany 25 % of total:                      |
|                                                       | Coal 48,24 %                                                         |
|                                                       | Natural gas 24,56 %                                                  |
|                                                       | Nuclear 20,80 %                                                      |
|                                                       | Oil 1,3 %                                                            |
|                                                       | others 5,11 %                                                        |
|                                                       | Hydro electricity 75 %                                               |
| Reference year                                        | 2021                                                                 |
| Type of dataset                                       | Cradle to gate from Gabi database                                    |
| Source                                                | IAE Electricity Information 2022. Association of Issuing Bodies 2020 |
| CO <sub>2</sub> emission kg CO <sub>2</sub> eq. / kWh | 0,163 kg of CO2 eq /kWh (based on Climate Change (fossil) indicator) |



### Data quality

Inventory data quality is judged by geographical. temporal. and technological representativeness. To cover these requirements and to ensure reliable results. first-hand industry data crossed with LCA background datasets were used. The data was collected from internal records and reporting documents from Saint-Gobain Weber GmbH. After evaluating

the inventory. according to the defined ranking in the LCA report. the assessment reflects a good inventory data quality.

## References

1. EPD International (2021) General Programme Instructions for the International EPD® System. Version 4.0. [www.environdec.com](http://www.environdec.com).
2. The International EPD System PCR 2019:14 version 1.3 0 Construction products
3. EN 15804:2012 + A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
4. ISO 14 025: environmental labels and declarations – type III Environmental Declarations Principles and procedure (2009)
5. ISO 14 040: Environmental management – Life Cycle Assessment – Principles and framework (2006)
6. ISO 14 044: Environmental management – Life Cycle Assessment – Requirements and guidelines (2006)
7. ISO 14020:2000 Environmental labels and Declarations - General principles
8. EN 15978 Sustainability of construction works - Assessment of environmental performance of buildings - Calculation method
9. EN 998-1:2016 Specification for mortar for masonry Rendering and plastering mortar
10. FprEN 16757:2016 Sustainability of construction works - Environmental product declarations - Product Category Rules for concrete and concrete elements