

## ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006 and  
EN 15804:2012+A2:2019/AC:2021 for:



### Programme

The International EPD® System,  
[www.environdec.com](http://www.environdec.com)  
EPD registered through the fully aligned regional hub  
EPD Southeast Asia,  
<http://www.epd-southeastasia.com/>

### Programme operator

EPD international AB

### Regional Hub

EPD Southeast Asia

### Validity

5 years

## Plastering mortar MU-307 AirePlaster

from

PT Cipta Mortar Utama  
produced in  
Mortar Utama, Jawilan



EPD registration number  
EPD-IES-0024626:001

### Publication date

2025/06/19

### Revision date

2025/07/14

### Version

2

### Valid until

2030/06/18

### Scope of the EPD

Indonesia



An EPD should provide current information and may be updated  
if conditions change. The stated validity is therefore subject to the  
continued registration and publication at [www.environdec.com](http://www.environdec.com)

## General information

### Programme information

|                   |                                                                                                                                                   |                                                                                                                                                           |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PROGRAMME:</b> | <b>The International EPD® System</b>                                                                                                              |                                                                                                                                                           |
|                   | EPD registered through the fully aligned regional hub:<br>EPD Southeast Asia                                                                      |                                                                                                                                                           |
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CEN standard EN 15804:2012+A2:2019/AC:2021 as the Core Product Category Rules (PCR)

**Product category rules (PCR):** PCR 2019:14 Construction Products, version 1.3.4

**PCR review was conducted by:** The Technical Committee of the International EPD® System. See [www.environdec.com](http://www.environdec.com) for a list of members. Review chair: No chair appointed. The review panel may be contacted via the Secretariat [www.environdec.com/contact](http://www.environdec.com/contact)

**Independent third-party verification of the declaration and data, according to ISO 14025:2006:**

☐ EPD process certification    ☒ EPD verification

**Third party verifier:** Dandan.Li

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Approved by: The International EPD® System



**Procedure for follow-up of data during EPD validity involves third part verifier:** ☒ Yes    ☐ No

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same version number up to the first two digits) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical DU/FU); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of Comparison. For further information about comparability, see EN 15804:2012+A2:2019/AC:2021 and ISO 14025:2006.

## Contact information

### EPD Owner

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# Product information

## Company information

**Manufacturer:** PT Cipta Mortar Utama

**Production plant(s):** weber Jawilan, Indonesia

**Management system - related certifications:** ISO 9001 (Certificate No.: EUFI29- 23001898-S1/EN), ISO 14001 (Certificate No.: EUFI29- 23001898-S2/EN)

**Programme used:** EN 15804:2012+A2:2019/AC 2021 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 1.3.4 for Construction products

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

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

**Owner of the declaration:** PT. Cipta Mortar Utama

**Product name and manufacturer represented:** Plastering mortar MU-307

**EPD® prepared by:** Muhammad Amri Yahya (muhammadamri.yahya@saint-gobain.com), Zhao Lin (lin.zhao@saint-gobain.com)

The intended use of this EPD is for B2B communication.

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

**EPD® registration number:** EPD-IES-0024626:001

**Declaration issued:** 2025/06/19, valid until: 2030/06/18

**Demonstration of verification:** An independent verification of the declaration was made, according to ISO 14025:2010. This verification was external and conducted by the following third party based on the PCR mentioned above.

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

# Product description

## Product description and description of use

This Environmental Product Declaration (EPD®) describes the environmental impacts of 1 kg of PT Cipta Mortar Utama Plastering Mortar MU-307 for red brick masonry and plastering work. This EPD applies for one specific product produced in one single plant.

The product is a lightweight mortar designed for red brick installation work, autoclaved aerated concrete (AAC) plastering applications with a thickness of 10 mm to 15 mm on both interior and exterior walls. Formulated with recycled materials, selected sand, cement, fillers, active lime particles, and additives homogeneously mixed, it offers a 50% more coverage and easier application.

All technical characteristics and properties for any product could be found on the website:  
<https://www.mortarutama.com/produk/mu-307-aireplaster/>

## Technical data/physical characteristics:

| Parameter                                 | Value / Description             |                |
|-------------------------------------------|---------------------------------|----------------|
| Tensile adhesion strength (after 28 days) | Min 0.1 – 0.2 N/mm <sup>2</sup> | BS EN 1015 :12 |
| Compressive Strength (after 28 days)      | 3 - 5 N/mm <sup>2</sup>         | BS EN 1015 :11 |
| Pot Life (35°C)                           | 1 hour                          | -              |
| Fresh density                             | 1.65 kg/liter                   | -              |
| Colour                                    | Grey                            | -              |
| Water demand                              | 11.5 -12.5 liter/ 40 kg bag     | -              |
| Mass of declared unit                     | 1 kg                            | -              |

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

Description of the main components and/or materials:

| Product components  | Weight (kg) | Post-consumer recycled material weight (%) | Biogenic material, weight- % and kg C/kg product |
|---------------------|-------------|--------------------------------------------|--------------------------------------------------|
| Binder              | 0.25kg      | 0 %                                        | 0 %, 0 kg                                        |
| Filler/aggregate    | 0.50kg      | 0 %                                        | 0 %, 0 kg                                        |
| Additives           | 0.25kg      | 100 %                                      | 0.017 % 0.00166kg                                |
| <b>Sum</b>          | <b>1kg</b>  | <b>25 %</b>                                | <b>0.017%, 0.00166kg</b>                         |
| Packaging materials | Weight (kg) | Weight versus the product (%)              | Weight biogenic carbon, kg C/kg product          |
| Paper bag           | 0.005 kg    | 0.54 %                                     | 0.00855 kg                                       |
| LDPE film           | 0.00001 kg  | 0.001 %                                    | 0 kg                                             |
| Wooden pallet       | 0.011 kg    | 1.06 %                                     | 0.0161 kg                                        |

At the date of issue of this declaration, there is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, and neither do their packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

The verifier and the program operator do not make any claim nor have any responsibility of the legality of the product.

## LCA calculation information

|                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TYPE OF EPD</b>                           | Product-specific EPD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>DECLARED UNIT</b>                         | 1 kg of dry powder, including packaging                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>SYSTEM BOUNDARIES</b>                     | Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and A4-A5, B1-B7)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>REFERENCE SERVICE LIFE (RSL)</b>          | The Reference Service Life (RSL) of the mortar product is 50 years. This 50-year value is the amount of time that we recommend our products last for without refurbishment and corresponds to standard building design life.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>CUT-OFF RULES</b>                         | <p>In the case that there is not enough information, the process energy and materials representing less than 1% of the whole energy and mass used can be excluded (if they do not cause significant impacts). The addition of all the inputs and outputs excluded cannot be bigger than the 5% of the whole mass and energy used, as well of the emissions to environment occurred.</p> <p>Flows related to human activities such as employee transport are excluded.</p> <p>The construction of plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the production of the building product when compared at these systems lifetime level.</p> |
| <b>ALLOCATIONS</b>                           | <p>Allocation has been avoided when possible and when not possible a mass allocation has been applied.</p> <p>The polluter pays and the modularity principles as well have been followed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>GEOGRAPHICAL COVERAGE AND TIME PERIOD</b> | <p>Scope: Indonesia</p> <p>Data is collected from one production site located in Indonesia</p> <p>Data collected for the year 2024</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>BACKGROUND DATA SOURCE</b>                | The databases Sphera 2023.2 and ecoinvent v.3.9.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>SOFTWARE</b>                              | Sphera LCA for experts (GaBi) 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## 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 BOUNDARY |
|--------------------|---------------------|-----------|---------------|--------------------|-----------------------------------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|-----------------------------------------------|
|                    | 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          | GL O                | GL O      | IDN           | IDN                | IDN                               | IDN       | IDN         | IDN    | IDN         | IDN           | IDN                    | IDN                   | IDN                        | IDN       | IDN              | IDN      | IDN                                           |
| Specific data used | 18% GWP- GHG        |           |               |                    |                                   |           |             |        |             |               |                        |                       |                            |           |                  |          |                                               |
| Variation products | 0%                  |           |               |                    |                                   |           |             |        |             |               |                        |                       |                            |           |                  |          |                                               |
| Variation sites    | 0%                  |           |               |                    |                                   |           |             |        |             |               |                        |                       |                            |           |                  |          |                                               |

## Life cycle stages

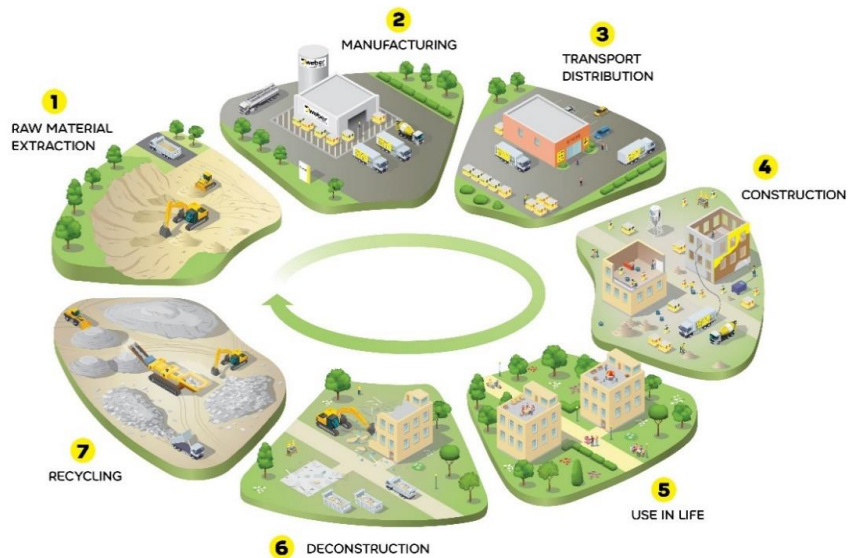


Figure 1. Flow diagram of the Life Cycle



## A1-A3. Product stage

The product stage of plaster products is subdivided into 3 modules A1, A2 and A3 respectively “raw material supply”, “transport to manufacturer” and “manufacturing”.

### A1. Raw materials supply

This module includes the extraction and transformation of raw materials.

### A2. Transport to the manufacturer

This module includes the transportation of raw materials and packaging to the manufacturing site. The modelling includes road, boat and/or train transportations.

### A3. Manufacturing

This module includes the manufacture of products and the manufacture of packaging. The production of packaging material is considered at this stage. The processing of any waste arising from this stage is also included.

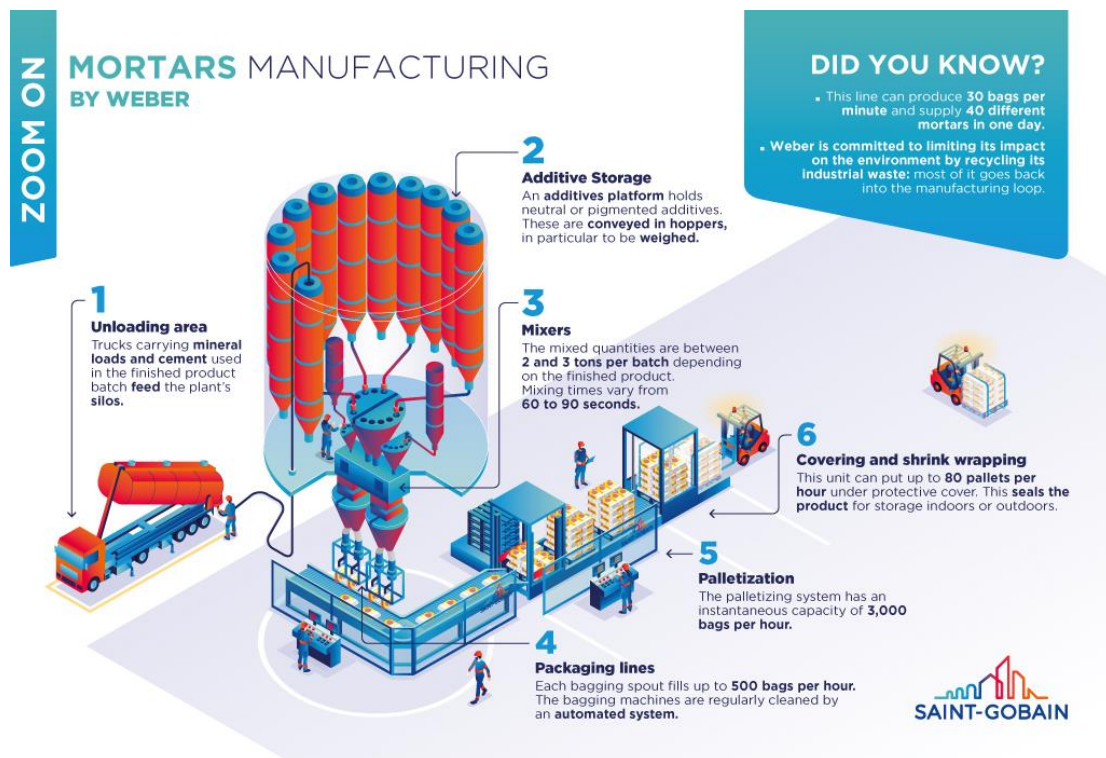
The manufacturing activities include grinding, drying, storing, mixing, packing and internal transportation. Packaging-related flows in the production process and all up-stream packaging are included in the manufacturing module, i.e., wooden pallets, bags, and LDPE film.

The infrastructure/capital goods are excluded from the study.

## Manufacturing process flow diagram

### System diagram:

Basic scheme of a Mortar Production line



### Manufacturing in detail:

The raw materials and packaging are transported and stored in the plant. During manufacturing, the raw materials are mixed based on its ratio and filled into a packaging bag. These bags are



then assembled on pallet with protective plastic cover prior to being kept and transported out of the plant.

## A4-A5. Construction process 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 based on 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, maximum load weight of 27 t, diesel consumption 38 liters for 100 km |
| Distance                                                                                                     | 63.6 km by truck                                                                    |
| Capacity utilisation (including empty returns)                                                               | 62.2% of the capacity in mass<br>30% of empty returns                               |
| Bulk density of transported products*                                                                        | 1333.956 kg / m <sup>3</sup>                                                        |
| Volume capacity utilisation factor                                                                           | 1 (by default)                                                                      |

### A5. Installation in the building:

This module includes the parameters for installing the product at the building site. All installation materials and their waste processing are included.

In this module:

Was taken into consideration:

- Energy used in the equipment to prepare the product.

Not taken into consideration:

- Additional accessories for installation
- Energy used to install the product (manual tools are used instead).

| PARAMETER                                                                                                                                                  | VALUE                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| secondary materials for installation (specified by materials)                                                                                              | None                                                                                                                                                       |
| Water use                                                                                                                                                  | 0.2 liters/kg of product                                                                                                                                   |
| Other resource use                                                                                                                                         | None                                                                                                                                                       |
| Quantitative description of energy type (regional mix) and consumption during the installation process                                                     | 0.00396 MJ/kg of product                                                                                                                                   |
| Wastage of materials on the building site before waste processing, generated by the product's installation (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 | Product: 100% to landfill<br>Packaging:<br>Paper bag: 100% to landfill<br>Low-density polyethylene film: 100% to landfill<br>Wooden pallet: 100% is reused |
| Direct emissions to ambient air, soil, and water                                                                                                           | None                                                                                                                                                       |

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

The use stage is divided into the following modules:

- B1: Use
- B2: Maintenance
- B3: Repair
- B4: Replacement
- B5: Refurbishment
- B6: Operational energy use
- B7: Operational water use

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. The product covered by this EPD does not require any maintenance as it is aimed for gluing different types of tiles. 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 B7 excepting facade products for which carbonation is considered.

## C1-C4. End of Life Stage

This stage includes the next modules:

### C1. Deconstruction, demolition

The de-construction and/or dismantling of the product take part of the demolition of the entire building. A consumption of 0.05 MJ/kg of demolished product is used for this stage.

### C2. Transport to waste processing

Transport to waste processing

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

Waste processing for reuse, recovery and/or recycling

### C4. Disposal

The product is landfilled at the end of life.

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

| PARAMETER                                                  | VALUE/DESCRIPTION                                                                                              |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Collection process specified by type                       | 1 kg product and part of water mixed in at installation collected with mixed construction waste                |
| Recovery system specified by type                          | 0% of Waste. There is no recovery, recycling or reuse of the product once it was reached its end of life phase |
| 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

There is no inclusion of secondary materials in the product and packaging.

100% of wastes are landfilled. There is no reuse, nor recycling, nor incineration with energy recovery for the for the product nor its packaging.

Considering all the above, no benefits or loads are reported on stage D.

## LCA results

As specified in EN 15804:2012+A2:2019/AC:2021 and the Product-Category Rules, the environmental impacts are declared and reported using the baseline characterization factors are from the ILCD. Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant. Characterisation factors EN15804 based on EF 3.1.

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.

The results of the impact categories abiotic depletion of minerals and metals, land use, human toxicity (cancer), human toxicity, noncancer and ecotoxicity (freshwater) may be highly uncertain in LCAs that include capital goods/infrastructure in generic datasets in case infrastructure/capital goods contribute greatly to the total results. This is because the LCI data of infrastructure/capital goods used to quantify these indicators in currently available generic datasets sometimes lack temporal, technological, and geographical representativeness. Caution should be exercised when using the results of these indicators for decision-making purposes.

*Disclaimer 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 following indicators: Resource use, mineral and metals [kg Sb eq.], Resource use, energy carriers [MJ], Water deprivation potential [m<sup>3</sup> world equiv.].

*Disclaimer 2:* The following optional indicators are not declared: Ecotoxicity freshwater [CTUe], Particulate Matter emissions [Disease incidence], Cancer human health effects [CTUh], Ionizing radiation - human health [kBq U235 eq.], Non-cancer human health effects [CTUh] and Land Use [Pt].

*Disclaimer 3:* This EPD including module C, we strongly advise against using the results of modules A1-A3 without considering the results of module C.

All figures refer to the declared unit of 1kg of dry powder.

The following results corresponds to a single product manufactured in a single plant:

## Environmental Impacts

|                                                                                     |                                                             | PRODUCT STAGE | CONSTRUCTION STAGE | USE STAGE       |           |                |           |                |                  |                           |                          | END OF LIFE STAGE              |              |                     |             | BENEFITS AND LOADS BEYOND THE LIFE CYCLE |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------|--------------------|-----------------|-----------|----------------|-----------|----------------|------------------|---------------------------|--------------------------|--------------------------------|--------------|---------------------|-------------|------------------------------------------|
| 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.]                                 | 8.76E-02      | 4.25E-03           | 3.26E-02        | -2.45E-02 | 0              | 0         | 0              | 0                | 0                         | 0                        | 4.65E-03                       | 7.50E-03     | 0                   | 1.74E-02    | 0                                        |
|                                                                                     | Climate Change (fossil) [kg CO2 eq.]                        | 1.13E-01      | 4.20E-03           | 8.61E-03        | -2.45E-02 | 0              | 0         | 0              | 0                | 0                         | 0                        | 4.65E-03                       | 7.41E-03     | 0                   | 1.55E-02    | 0                                        |
|                                                                                     | Climate Change (biogenic) [kg CO2 eq.]                      | -2.57E-02     | 1.11E-05           | 2.40E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 4.03E-06                       | 2.02E-05     | 0                   | 1.88E-03    | 0                                        |
|                                                                                     | Climate Change (land use change) [kg CO2 eq.]               | 1.73E-04      | 3.95E-05           | 2.22E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 8.86E-08                       | 6.94E-05     | 0                   | 4.89E-05    | 0                                        |
|    | Ozone depletion [kg CFC-11 eq.]                             | 4.70E-10      | 3.74E-16           | 4.25E-11        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 3.58E-16                       | 9.76E-16     | 0                   | 4.00E-14    | 0                                        |
|    | Acidification terrestrial and freshwater [Mole of H+ eq.]   | 5.90E-04      | 4.83E-06           | 4.39E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 7.32E-06                       | 9.54E-06     | 0                   | 1.12E-04    | 0                                        |
|   | Eutrophication freshwater [kg P eq.]                        | 6.99E-06      | 1.56E-08           | 3.93E-07        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 8.99E-10                       | 2.74E-08     | 0                   | 3.17E-08    | 0                                        |
|                                                                                     | Eutrophication marine [kg N eq.]                            | 1.40E-04      | 1.65E-06           | 2.05E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2.53E-06                       | 3.34E-06     | 0                   | 2.88E-05    | 0                                        |
|                                                                                     | Eutrophication terrestrial [Mole of N eq.]                  | 1.51E-03      | 1.95E-05           | 1.16E-04        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2.80E-05                       | 3.91E-05     | 0                   | 3.17E-04    | 0                                        |
|  | Photochemical ozone formation - human health [kg NMVOC eq.] | 4.18E-04      | 4.19E-06           | 3.21E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 7.66E-06                       | 8.37E-06     | 0                   | 8.70E-05    | 0                                        |
|  | Resource use, mineral and metals [kg Sb eq.] <sup>1</sup>   | 1.11E-07      | 2.77E-10           | 6.14E-09        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 4.70E-11                       | 4.97E-10     | 0                   | 7.28E-10    | 0                                        |
|                                                                                     | Resource use, energy carriers [MJ] <sup>1</sup>             | 1.08E+00      | 5.80E-02           | 9.77E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 6.19E-02                       | 1.02E-01     | 0                   | 2.10E-01    | 0                                        |
|  | Water deprivation potential [m³ world equiv.] <sup>1</sup>  | 9.16E-03      | 4.92E-05           | 1.51E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 1.20E-05                       | 9.06E-05     | 0                   | 1.73E-03    | 0                                        |

<sup>1</sup> 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

|                                                                                                                                                                          | PRODUCT STAGE | CONSTRUCTION STAGE |                 | USE STAGE |                |           |                |                  |                           |                          | END OF LIFE STAGE              |              |                     |             | BENEFITS AND LOADS BEYOND THE LIFE CYCLE |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-----------------|-----------|----------------|-----------|----------------|------------------|---------------------------|--------------------------|--------------------------------|--------------|---------------------|-------------|------------------------------------------|
| Resources Use indicators <sup>2</sup>                                                                                                                                    | 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] <sup>3</sup>                               | 1.16E-01      | 4.11E-03           | 1.48E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2.73E-04                       | 7.43E-03     | 0                   | 3.42E-02    | 0                                        |
|  Primary energy resources used as raw materials (PERM) [MJ] <sup>2</sup>                | 2.41E-01      | 0                  | -1.56E-01       | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                                        |
|  Total use of renewable primary energy resources (PERT) [MJ] <sup>2</sup>               | 3.57E-01      | 4.11E-03           | -1.41E-01       | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 2.73E-04                       | 7.43E-03     | 0                   | 3.42E-02    | 0                                        |
|  Use of non-renewable primary energy (PENRE) [MJ] <sup>2</sup>                          | 1.08E+00      | 5.82E-02           | 9.78E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 6.21E-02                       | 1.03E-01     | 0                   | 2.10E-01    | 0                                        |
|  Non-renewable primary energy resources used as raw materials (PENRM) [MJ] <sup>2</sup> | 2.53E-04      | 0                  | 1.27E-05        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 0                              | 0            | 0                   | 0           | 0                                        |
|  Total use of non-renewable primary energy resources (PENRT) [MJ] <sup>2</sup>         | 1.08E+00      | 5.82E-02           | 9.78E-02        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 6.21E-02                       | 1.03E-01     | 0                   | 2.10E-01    | 0                                        |
|  Input of secondary material (SM) [kg]                                                | 2.50E-01      | 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]                                                     | 2.95E-04      | 4.53E-06           | 3.59E-04        | 0         | 0              | 0         | 0              | 0                | 0                         | 0                        | 4.44E-07                       | 8.14E-06     | 0                   | 5.30E-05    | 0                                        |

<sup>3</sup> From EPD International Construction Product PCR 1.3.4 (Annex 3). The option B was retained to calculate the primary energy use indicators.

## Waste Category & Output flows

| Waste Category & Output Flows                                                                                              | PRODUCT<br>STAGE | CONSTRUCTION<br>STAGE |                 | USE STAGE |                |           |                |                  |                |                      | END OF LIFE STAGE                 |              |                     |             | BENEFITS<br>AND LOADS<br>BEYOND<br>THE LIFE<br>CYCLE |
|----------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------|-----------------|-----------|----------------|-----------|----------------|------------------|----------------|----------------------|-----------------------------------|--------------|---------------------|-------------|------------------------------------------------------|
|                                                                                                                            | A1 / A2 / A3     | A4 Transport          | A5 Installation | B1 Use    | B2 Maintenance | B3 Repair | B4 Replacement | B5 Refurbishment | B6 Operational | B7 Operational water | C1 Deconstruction /<br>demolition | C2 Transport | C3 Waste processing | C4 Disposal | D Reuse, recovery,<br>recycling                      |
|  Hazardous waste disposed (HWD) [kg]      | 7.17E-05         | 2.15E-13              | 3.59E-06        | 0         | 0              | 0         | 0              | 0                | 0              | 0                    | 1.79E-13                          | 3.17E-13     | 0                   | 4.56E-12    | 0                                                    |
|  Non-hazardous waste disposed (NHWD) [kg] | 3.99E-02         | 8.39E-06              | 1.12E-01        | 0         | 0              | 0         | 0              | 0                | 0              | 0                    | 1.28E-05                          | 1.56E-05     | 0                   | 1.05E+00    | 0                                                    |
|  Radioactive waste disposed (RWD) [kg]    | 1.28E-05         | 7.52E-08              | 2.12E-06        | 0         | 0              | 0         | 0              | 0                | 0              | 0                    | 7.16E-08                          | 1.92E-07     | 0                   | 2.39E-06    | 0                                                    |
|  Components for re-use (CRU) [kg]         | 0                | 0                     | 1.10E-02        | 0         | 0              | 0         | 0              | 0                | 0              | 0                    | 0                                 | 0            | 0                   | 0           | 0                                                    |
|  Materials for Recycling (MFR) [kg]       | 5.99E-03         | 0                     | 0               | 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

|                                                                                   |                                   | PRODUCT STAGE | CONSTRUCTION STAGE |                 | USE STAGE |                |           |                |                  |                           |                          | END OF LIFE STAGE              |              |                     |             | BENEFITS AND LOADS BEYOND THE LIFE CYCLE |
|-----------------------------------------------------------------------------------|-----------------------------------|---------------|--------------------|-----------------|-----------|----------------|-----------|----------------|------------------|---------------------------|--------------------------|--------------------------------|--------------|---------------------|-------------|------------------------------------------|
| 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>4</sup> | 1.13E-01      | 4.24E-03           | 8.63E-03        | -2.50E-02 | 0              | 0         | 0              | 0                | 0                         | 0                        | 4.65E-03                       | 7.48E-03     | 0                   | 1.56E-02    | 0                                        |

<sup>4</sup> The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This indicator is thus almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

## Information on biogenic carbon content

|                                                                                   |                                           | PRODUCT STAGE |
|-----------------------------------------------------------------------------------|-------------------------------------------|---------------|
| Biogenic Carbon Content in kg C                                                   |                                           | A1 / A2 / A3  |
|  | Biogenic carbon content in product [kg]   | 0.000474      |
|  | Biogenic carbon content in packaging [kg] | 0.0066        |

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

## Additional information:

During the manufacturing process, electricity based on 100% residual mix has been used. The amount of electricity purchases with Indonesian national grid mix correspond to 100% of the electricity consumed at the manufacturing site, leaving 0% to be covered by the Guarantee of Origin (GO).

## Electricity information

The factory based in Jawilan uses the following electricity description.

| TYPE OF INFORMATION                                   | DESCRIPTION                                          |
|-------------------------------------------------------|------------------------------------------------------|
| Location                                              | Representative of Electricity purchased by Indonesia |
| Geographical representativeness description           | Coal 80.6%<br>Natural gas 16.7%<br>Oil 2.7%          |
| Reference year                                        | 2024                                                 |
| Type of dataset                                       | Cradle to gate from Gabi and ecoinvent databases     |
| Source                                                | International Energy Agency                          |
| CO <sub>2</sub> emission kg CO <sub>2</sub> eq. / kWh | 0.96 kg CO <sub>2</sub> eq./kWh<br>GWP-GHG           |

## 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 PT Cipta Mortar Utama, Saint-Gobain Indonesia. After evaluating the inventory, according to the defined ranking in the LCA report, the assessment reflects 100% inventory data quality.

## Differences with previous versions of the EPD

- Contact information changed
- Product name corrected
- Product mark logo corrected

## References

1. EN 998-1:2016 Specification for mortar for masonry Rendering and plastering mortar
2. EPD International General Programme Instructions for the International EPD® System. Version 5.0. [www.environdec.com](http://www.environdec.com).
3. EN16757: 2022, Sustainability of construction works – Environmental product declarations - Product Category Rules for concrete and concrete elements.
4. EN 15804:2012+A2:2019/AC:2021 - Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
5. EPD International (2021) General Programme Instructions for the International EPD® System. Version 4.0. [www.environdec.com](http://www.environdec.com).
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7. The International EPD System PCR 2019:14 Construction products and Construction services. Version 1.3.4
8. European Chemical Agency, Candidate List of substances of very high concern for Authorization. <https://echa.europa.eu/candidate-list-table>
9. Project report for the verification of the Environmental Product Declaration of Aire products