

# ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804+A2 

## **Secil Betão, S.A. - Linhó** **Hidrófugo C30/37**



### **Owner of the declaration**

Secil Betão, S.A. - Linhó  
Impasse Fernão Lopes  
2710-692 Sintra  
Portugal

### **Product**

Hidrófugo C30/37

### **Declared product / Declared unit**

1 m<sup>3</sup>

### **This declaration is based on Product Category Rules**

EN 15804:2012 + A2:2019,  
NPCR 020 PART B for concrete and  
concrete elements (v3.0)

### **Program operator:**

EPD Global  
Majorstuen P.O. Box 5250  
N-0303 Oslo  
Norway

### **Declaration number**

NEPD-10272-10272-2

### **Registration number**

NEPD-10272-10272-2

### **Issue date**

09.09.2025

### **Valid to**

08.09.2030

### **EPD Software**

Emidat EPD Tool v1.0.0

## General Information

### Product

Hidrófugo C30/37

### Program Operator

EPD Global  
Majorstuen P.O. Box 5250  
N-0303 Oslo  
Norway  
Phone: +47 23 08 80 00  
Email: post@epd-norge.no

### Declaration Number

NEPD-10272-10272-2

### This declaration is based on Product Category Rules

EN 15804:2012 + A2:2019,  
NPCR 020 PART B for concrete and concrete elements  
(v3.0)

### Statements

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

### Declared unit

1 m<sup>3</sup>

### General information on verification of EPD from EPD tools

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD Norway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools.

### Verification of EPD tool

Charlotte Merlin, FORCE Technology  
(no signature required)

### Owner of the declaration

Secil Betão, S.A. - Linhó

### Contact person

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### Phone

+351217927100

### Email

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### Manufacturer

Secil Betão, S.A. - Linhó  
Impasse Fernão Lopes  
2710-692 Sintra, Portugal

### Place of production

Sintra, Portugal

### Management system

ISO 9001, ISO 14001

### Organisation no

23630

### Issue date

09.09.2025

### Valid to

08.09.2030

### Year of study

2024

### Comparability

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not seen in a building context. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database (including primary and secondary data).

### Development and verification of EPD

The declaration was created using the Emidat EPD tool v1.0, developed by Emidat GmbH. The EPD tool has been approved by EPD Norway.

Developer of EPD: Daniela Faisca

Reviewer of company-specific input data and EPD: Raquel Sofia Venâncio Madeira do Nascimento Paulo

### Approved



Håkon Hauan, CEO EPD-Norge

## Product

### Product description

Ready-mix concrete is a construction material consisting of a homogeneous mixture of cement, aggregates (coarse and fine), water, and optionally admixtures or additions. It is produced in a batching plant and delivered to the construction site in a fresh state, ready for placement.

This specific ready-mix concrete incorporates a hydrophobic admixture, providing water-repellent properties that enhance durability and reduce permeability.

The concrete is designed and manufactured in accordance with the requirements of NP EN 206 and complies with all relevant European standards for production control and testing.

Testing is carried out in accordance with EN 12350 and EN 12390.



Hydrophobic Ready-Mix Concrete is widely used in civil engineering, infrastructure works, and building construction, including but

not limited to:

Foundations (footings, raft slabs, cast-in-place piles)

Floor slabs and pavements (industrial, commercial, residential)

Structural elements (columns, beams, retaining walls)

Water-retaining and containment structures

Infrastructure works (bridges, tunnels, culverts)

Residential, commercial and industrial buildings

### Product specification

| Name of ingredient | Share of total weight | Country of origin |
|--------------------|-----------------------|-------------------|
| Admixtures         | 0 - 2 %               | Portugal          |
| Aggregates         | 80 - 100 %            | Portugal          |
| Cement             | 10 - 25 %             | Portugal          |
| Water              | 2 - 10 %              | Portugal          |

### Technical data

|                                 | Unit                | Value  |
|---------------------------------|---------------------|--------|
| Gross Density                   | kg / m <sup>3</sup> | 2413.5 |
| Compressive Strength (Cylinder) | N / mm <sup>2</sup> | 41.6   |
| Compressive Strength (Cube)     | N / mm <sup>2</sup> | 52.0   |

### Market

Portugal

## LCA: Calculation rules

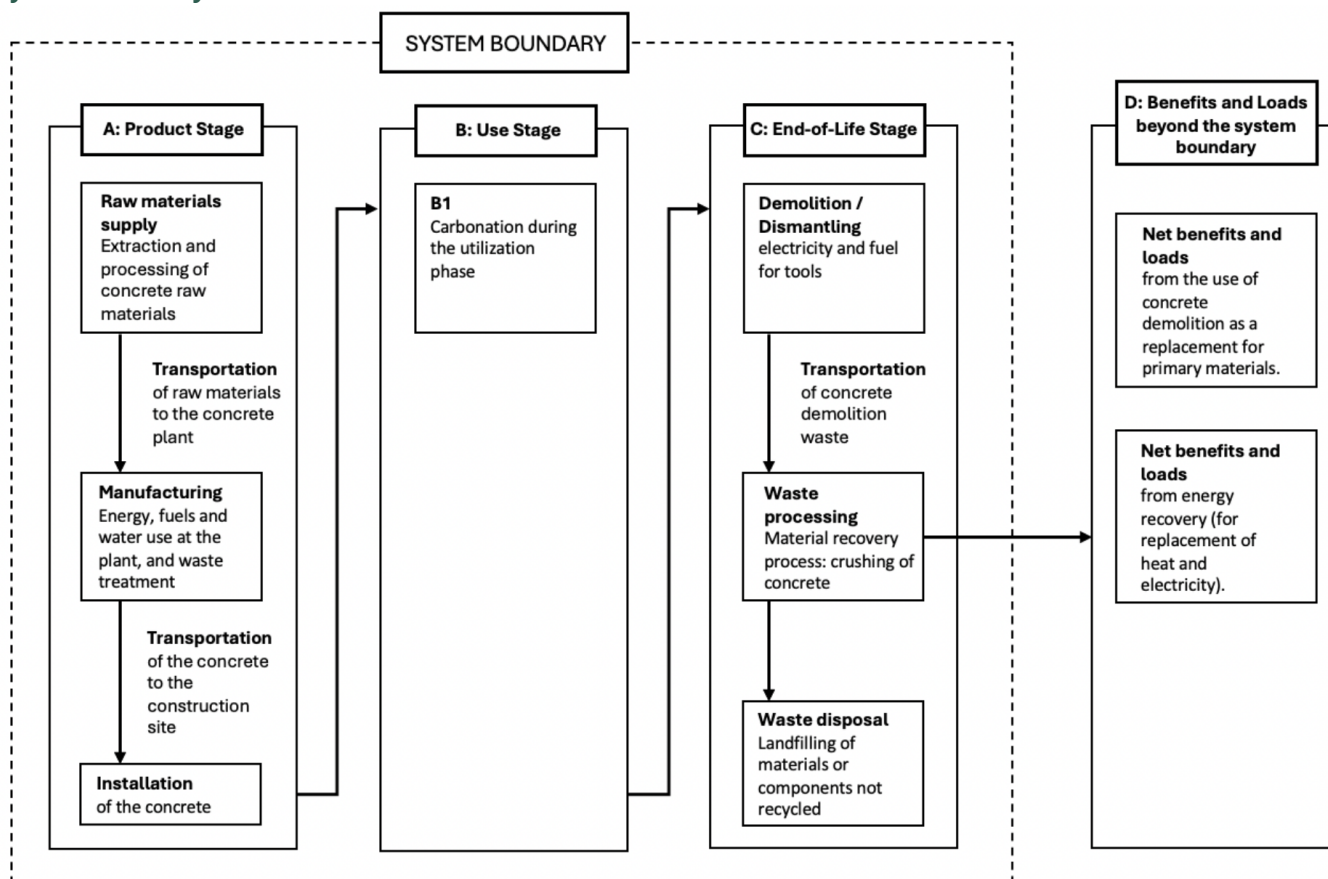
### Declared unit

1 m<sup>3</sup>

### Reference service life

50 years

### System boundary



### Data quality

The foreground data are based on extensive and detailed data collection at the production site of the manufacturer, covering key processes such as raw material sourcing, formulation, and manufacturing. These foreground data are fully linked with corresponding datasets from the background database (ecoinvent 3.10) or with EN15804+A2-compliant EPDs, ensuring consistency, reliability, and maintaining alignment with the latest industry standards.

The overall data representativeness is rated as good with an overall score of 3.95/5, in accordance with EN 15804+A2 Annex E guidance on data quality assessment, considering geographical, technical, and temporal representativeness.

## System boundaries (X=included, MND=module not declared)

|                  | Production          |           |               | Installation |                      | Use stage |             |        |             |               |                        |                       | End-of-Life |           |                  |          | Next product system                           |
|------------------|---------------------|-----------|---------------|--------------|----------------------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|-------------|-----------|------------------|----------|-----------------------------------------------|
|                  | Raw material supply | Transport | Manufacturing | Transport    | Installation Process | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational Energy Use | Operational Water Use | Demolition  | Transport | Waste Processing | Disposal | Benefits and loads beyond the system boundary |
| 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         | MND         | MND    | MND         | MND           | MND                    | MND                   | x           | x         | x                | x        | x                                             |
| Geography        |                     |           | PT            | PT           | PT                   | PT        | MND         | MND    | MND         | MND           | MND                    | MND                   | PT          | PT        | PT               | PT       | PT                                            |

For the geographies modeled in A1 and A2, refer to *Product specification*.

Type of EPD: Cradle to gate with options A4, A5, B1, C1, C2, C3, C4 and D

### Stage of Material Production and Construction

Module A1: Extraction and processing of raw materials

Module A2: Transportation of raw materials to the plant

Module A3: Concrete production at the plant and waste treatment

Module A4: Transportation to the construction site

Module A5: Includes processes associated with concrete installation (e.g., pumping on the construction site), as well as the production, transportation, and treatment of unused concrete

### Use Stage

Module B1: Carbonation during the utilization phase

### Disposal Stage

Module C1: Demolition/Dismantling

Module C2: Transportation of concrete demolition waste for processing

Module C3: Sorting of waste components and recycling of concrete

Module C4: Disposal of concrete

### Credits and burdens outside the system boundaries

Module D: Credits and burdens from the use of demolished concrete as a replacement for primary materials

## Cut-off criteria

Environmental impacts of the following processes are considered to be negligible: Production and use of formwork and falsework for the installation of concrete, Materials used for the curing of concrete (e.g. plastics, aluminum) .

## Allocation

Foreground inventory data (energy and fuels, ancillary materials, emissions and waste) was collected at the production-process level. Using the total output of the production process in 2024, these flows are allocated to one declared unit based on volume.

## LCA: Scenarios and additional technical information

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

| Transport to the building site (A4)   | Value                                           | Unit                |
|---------------------------------------|-------------------------------------------------|---------------------|
| Transported mass                      | 2413.50                                         | kg                  |
| Gross density of products transported | 2413.50                                         | kg / m <sup>3</sup> |
| Truck: Distance                       | 100.00                                          | km                  |
| Truck: Energy demand                  | 1.58                                            | MJ / t*km           |
| Truck: Activity                       | transport, freight, lorry >32 metric ton, EURO6 | -                   |
| Truck: Capacity utilization           | 53.30                                           | %                   |

| Installation into the building (A5)                           | Value | Unit           |
|---------------------------------------------------------------|-------|----------------|
| Installation loss                                             | 1.50  | %              |
| Formwork                                                      | -     | kg             |
| Falsework                                                     | -     | kg             |
| Distance to waste landfill facility (for installation losses) | 50.00 | km             |
| Amount of electricity to pour 1 m <sup>3</sup> of concrete    | 3.00  | kWh            |
| Amount of diesel to pour 1 m <sup>3</sup> of concrete         | 60.00 | MJ             |
| Water                                                         | 0.29  | m <sup>3</sup> |
| Wastewater treatment                                          | 0.29  | m <sup>3</sup> |

Formwork and Falsework each contribute less than 1% of the total product CO<sub>2</sub> emissions, and are therefore neglected under cut-off rules. (Kaethner, Burrige, 2012). Other sources: Concrete waste: Adams & Hobbs (2023). Electricity, Diesel: Ecoinvent benchmark average.

| Use of the installed product (B1) | Value                              | Unit                           |
|-----------------------------------|------------------------------------|--------------------------------|
| Reference use period              | 50.00                              | years                          |
| Application                       | Building, outside, exposed to rain |                                |
| Degree of carbonation (Dc)        | 0.85                               | -                              |
| Cement absorption factor          | 0.34                               | kg CO <sub>2</sub> / kg Cement |
| k-factor                          | 1.10                               | mm / √year                     |
| Correction factor                 | 1.00                               | -                              |
| Surface area of concrete          | 5.00                               | m <sup>2</sup>                 |

Calculation of carbonization according to EN 16757. k-factor results from the concrete's compressive strength and its application. The cement absorption factor (maximum theoretical CO<sub>2</sub> uptake) depends on the average clinker content in cement. The correction factor results from cement substitutes in the recipe.

| Demolition (C1)                                              | Value    | Unit    |
|--------------------------------------------------------------|----------|---------|
| Diesel required to demolish 1 kg of concrete                 | 0.06     | MJ / kg |
| PM 10 emissions during the demolishment of 1 kg of concrete  | 6.00e-05 | kg / kg |
| PM 2.5 emissions during the demolishment of 1 kg of concrete | 1.70e-05 | kg / kg |

| Transport to the waste facility (C2) | Value                                           | Unit      |
|--------------------------------------|-------------------------------------------------|-----------|
| Mass to recycling                    | 1158.48                                         | kg        |
| Mass to landfill                     | 1255.02                                         | kg        |
| Distance to recycling by truck       | 50.00                                           | km        |
| Distance to landfill by truck        | 50.00                                           | km        |
| Truck: Activity                      | transport, freight, lorry >32 metric ton, EURO6 | -         |
| Truck: Capacity utilization          | 53.30                                           | %         |
| Truck: Distance                      | 50.00                                           | km        |
| Truck: Energy demand                 | 1.58                                            | MJ / t*km |

| Waste processing (C3)  | Value   | Unit |
|------------------------|---------|------|
| Material for recycling | 1158.48 | kg   |

Carbonation during waste processing is not considered. Recycling rate for concrete of 48% reflects the modeled country. Source: [https://ec.europa.eu/environment/pdf/waste/studies/deliverables/CDW\\_Portugal\\_Final.pdf](https://ec.europa.eu/environment/pdf/waste/studies/deliverables/CDW_Portugal_Final.pdf).

| Disposal (C4)         | Value   | Unit |
|-----------------------|---------|------|
| Material for landfill | 1255.02 | kg   |

| Reuse, recovery and/or recycling potentials (D)       | Value   | Unit |
|-------------------------------------------------------|---------|------|
| Amount of secondary material that the system takes in | 86.20   | kg   |
| Substitution of gravel                                | 1117.10 | kg   |
| Substitution of electrical energy production          | 0.06    | MJ   |
| Substitution of thermal energy production             | 0.84    | MJ   |

Calculation of benefits and loads per EN 15804+A2.

## LCA: Results

### Core environmental impact indicators

| Indicator      | Unit                             | A1-3     | A4       | A5       | B1        | C1       | C2       | C3       | C4       | D         |
|----------------|----------------------------------|----------|----------|----------|-----------|----------|----------|----------|----------|-----------|
| GWP-total      | kg CO <sub>2</sub> -eq.          | 2.26e+02 | 2.50e+01 | 1.13e+01 | -3.20e+00 | 1.48e+01 | 1.25e+01 | 7.10e+00 | 7.85e+00 | -2.35e+00 |
| GWP-fossil     | kg CO <sub>2</sub> -eq.          | 2.26e+02 | 2.50e+01 | 1.11e+01 | -3.20e+00 | 1.48e+01 | 1.25e+01 | 7.10e+00 | 7.85e+00 | -2.29e+00 |
| GWP-biogenic   | kg CO <sub>2</sub> -eq.          | 1.53e-01 | 1.25e-02 | 1.31e-01 | 0         | 1.48e-03 | 6.27e-03 | 7.09e-04 | 8.12e-04 | -6.06e-02 |
| GWP-luluc      | kg CO <sub>2</sub> -eq.          | 7.26e-02 | 8.87e-03 | 1.82e-02 | 0         | 1.29e-03 | 4.44e-03 | 6.17e-04 | 4.08e-03 | -3.47e-04 |
| ODP            | kg CFC-11-Eq                     | 5.05e-06 | 5.21e-07 | 2.06e-07 | 0         | 2.26e-07 | 2.60e-07 | 1.09e-07 | 2.27e-07 | -3.42e-08 |
| AP             | mol H+-Eq                        | 6.70e-01 | 5.90e-02 | 7.19e-02 | 0         | 1.33e-01 | 2.95e-02 | 6.41e-02 | 5.56e-02 | -1.92e-02 |
| EP-freshwater  | kg P-Eq                          | 1.16e-02 | 1.76e-03 | 9.49e-04 | 0         | 4.31e-04 | 8.80e-04 | 2.07e-04 | 6.51e-04 | -9.98e-05 |
| EP-marine      | kg N-Eq                          | 6.58e-02 | 1.55e-02 | 3.30e-02 | 0         | 6.19e-02 | 7.74e-03 | 2.97e-02 | 2.12e-02 | -7.62e-03 |
| EP-terrestrial | mol N-Eq                         | 2.33e+00 | 1.67e-01 | 3.30e-01 | 0         | 6.78e-01 | 8.37e-02 | 3.26e-01 | 2.31e-01 | -8.90e-02 |
| POCP           | kg NMVOC-Eq                      | 6.20e-01 | 1.02e-01 | 9.93e-02 | 0         | 2.02e-01 | 5.12e-02 | 9.71e-02 | 8.29e-02 | -2.55e-02 |
| ADPE           | kg Sb-Eq                         | 2.44e-04 | 7.14e-05 | 1.08e-05 | 0         | 5.30e-06 | 3.57e-05 | 2.55e-06 | 1.24e-05 | -2.28e-05 |
| ADPF           | MJ, net calorific value          | 1.33e+03 | 3.75e+02 | 1.28e+02 | 0         | 1.93e+02 | 1.88e+02 | 9.29e+01 | 1.92e+02 | -3.35e+01 |
| WDP            | m <sup>3</sup> world Eq deprived | 1.66e+01 | 1.88e+00 | 1.05e+00 | 0         | 4.74e-01 | 9.42e-01 | 2.27e-01 | 5.38e-01 | -1.57e+00 |

**GWP-total:** Global Warming Potential - total **GWP-fossil:** Global warming potential - fossil **GWP-biogenic:** Global Warming Potential - biogenic **GWP-luluc:** Global Warming Potential - luluc **ODP:** Depletion potential of the stratospheric ozone layer **AP:** Acidification potential, Accumulated Exceedance **EP-freshwater:** Eutrophication potential - freshwater **EP-marine:** Eutrophication potential - marine **EP-terrestrial:** Eutrophication potential - terrestrial **POCP:** Photochemical Ozone Creation Potential **ADPE:** Abiotic depletion potential - non-fossil resources **ADPF:** Abiotic depletion potential - fossil resources **WDP:** Water (user) deprivation potential

### Additional indicators

| Indicator | Unit              | A1-3     | A4       | A5       | B1 | C1       | C2       | C3       | C4       | D         |
|-----------|-------------------|----------|----------|----------|----|----------|----------|----------|----------|-----------|
| PM        | disease incidence | 1.45e-05 | 2.43e-06 | 1.88e-06 | 0  | 2.15e-05 | 1.22e-06 | 1.04e-05 | 1.26e-06 | -5.26e-07 |
| IRP       | kBq U235-Eq       | 2.58e+03 | 4.56e-01 | 3.89e+01 | 0  | 8.66e-02 | 2.28e-01 | 4.16e-02 | 1.23e-01 | -3.75e-01 |
| ETP-fw    | CTUe              | 3.08e+02 | 8.89e+01 | 3.46e+01 | 0  | 2.74e+01 | 4.44e+01 | 1.32e+01 | 2.63e+01 | -1.61e+01 |
| HTP-c     | CTUh              | 1.36e-06 | 1.60e-07 | 5.45e-08 | 0  | 5.78e-08 | 8.00e-08 | 2.78e-08 | 3.55e-08 | -3.63e-08 |
| HTP-nc    | CTUh              | 1.41e-05 | 2.47e-07 | 2.58e-07 | 0  | 2.62e-08 | 1.24e-07 | 1.26e-08 | 3.46e-08 | -2.11e-08 |
| SQP       | dimensionless     | 9.18e+02 | 3.77e+02 | 4.40e+01 | 0  | 1.36e+01 | 1.89e+02 | 6.51e+00 | 3.79e+02 | -7.32e+01 |

**PM:** Potential incidence of disease due to PM emissions **IRP:** Potential Human exposure efficiency relative to U235 **ETP-fw:** Potential Comparative Toxic Unit for ecosystems **HTP-c:** Potential Comparative Toxic Unit for humans - cancer effects **HTP-nc:** Potential Comparative Toxic Unit for humans - non-cancer effects **SQP:** Potential Soil quality index

**IRP:** This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

**ETP-fw, HTP-c, HTP-nc and SQP:** The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with these indicators.

## Use of resources

| Indicator | Unit | A1-3     | A4       | A5       | B1 | C1       | C2       | C3        | C4       | D         |
|-----------|------|----------|----------|----------|----|----------|----------|-----------|----------|-----------|
| PERE      | MJ   | 1.06e+02 | 5.95e+00 | 1.11e+01 | 0  | 1.18e+00 | 2.98e+00 | 5.68e-01  | 1.78e+00 | -1.06e+01 |
| PERM      | MJ   | 0        | 0        | 0        | 0  | 0        | 0        | 0         | 0        | 0         |
| PERT      | MJ   | 1.06e+02 | 5.95e+00 | 1.11e+01 | 0  | 1.18e+00 | 2.98e+00 | 5.68e-01  | 1.78e+00 | -1.06e+01 |
| PENRE     | MJ   | 1.25e+03 | 3.75e+02 | 1.27e+02 | 0  | 1.93e+02 | 1.88e+02 | 9.29e+01  | 1.92e+02 | -3.35e+01 |
| PENRM     | MJ   | 2.60e+01 | 0        | 3.90e-01 | 0  | 0        | 0        | -1.25e+01 | 0        | 0         |
| PENRT     | MJ   | 1.28e+03 | 3.75e+02 | 1.27e+02 | 0  | 1.93e+02 | 1.88e+02 | 8.04e+01  | 1.92e+02 | -3.35e+01 |
| SM        | kg   | 1.48e+02 | 0        | 2.22e+00 | 0  | 0        | 0        | 0         | 0        | 1.12e+03  |
| RSF       | MJ   | 1.33e+02 | 0        | 1.99e+00 | 0  | 0        | 0        | 0         | 0        | 0         |
| NRSF      | MJ   | 1.77e+02 | 0        | 2.65e+00 | 0  | 0        | 0        | 0         | 0        | 0         |
| FW        | m³   | 1.49e+00 | 5.45e-02 | 4.72e-02 | 0  | 1.26e-02 | 2.73e-02 | 6.04e-03  | 2.00e-01 | -1.59e+00 |

**PERE:** Primary energy resources - renewable: use as energy carrier **PERM:** Primary energy resources - renewable: used as raw materials **PERT:** Primary energy resources - renewable: total **PENRE:** Primary energy resources - non-renewable: use as energy carrier **PENRM:** Primary energy resources - non-renewable: used as raw materials **PENRT:** Primary energy resources - non-renewable: total **SM:** Use of secondary material **RSF:** Renewable secondary fuels **NRSF:** Non-renewable secondary fuels **FW:** Net use of fresh water

## Waste flows

| Indicator | Unit | A1-3     | A4       | A5       | B1 | C1       | C2       | C3       | C4       | D         |
|-----------|------|----------|----------|----------|----|----------|----------|----------|----------|-----------|
| HWD       | kg   | 3.73e+00 | 5.45e-01 | 2.14e-01 | 0  | 2.16e-01 | 2.73e-01 | 1.04e-01 | 2.14e-01 | -1.46e-01 |
| NHWD      | kg   | 1.01e+02 | 1.09e+01 | 3.32e+02 | 0  | 2.95e+00 | 5.46e+00 | 1.42e+00 | 1.26e+03 | -1.51e+00 |
| RWD       | kg   | 5.41e-04 | 1.13e-04 | 6.37e-05 | 0  | 2.12e-05 | 5.64e-05 | 1.02e-05 | 2.99e-05 | -8.05e-05 |

**HWD:** Hazardous waste disposed **NHWD:** Non hazardous waste disposed **RWD:** Radioactive waste disposed

## Output flows

| Indicator | Unit | A1-3     | A4 | A5       | B1 | C1 | C2 | C3       | C4 | D |
|-----------|------|----------|----|----------|----|----|----|----------|----|---|
| CRU       | kg   | 0        | 0  | 0        | 0  | 0  | 0  | 0        | 0  | 0 |
| MFR       | kg   | 1.16e+02 | 0  | 1.74e+00 | 0  | 0  | 0  | 1.16e+03 | 0  | 0 |
| MER       | kg   | 0        | 0  | 0        | 0  | 0  | 0  | 0        | 0  | 0 |
| EEE       | MJ   | 6.13e-02 | 0  | 9.19e-04 | 0  | 0  | 0  | 0        | 0  | 0 |
| EET       | MJ   | 8.26e-01 | 0  | 1.24e-02 | 0  | 0  | 0  | 0        | 0  | 0 |

**CRU:** Components for re-use **MFR:** Materials for recycling **MER:** Materials for energy recovery **EEE:** Exported electrical energy **EET:** Exported thermal energy

| Name                                              | Value | Unit |
|---------------------------------------------------|-------|------|
| Biogenic carbon content in product                | 0     | kg C |
| Biogenic carbon content in accompanying packaging | 0     | kg C |

## Additional requirements

### Greenhouse gas emissions from the use of electricity in the manufacturing phase

Electricity consumption in the manufacturing phase is composed from the source below. Electricity is represented by data in ecoinvent 3.10 regionalised for Portugal.

| Electricity           | Unit                          | Value |
|-----------------------|-------------------------------|-------|
| Electricity from grid | kg CO <sub>2</sub> -eq. / kWh | 0.60  |

### Dangerous substances

The product contains no hazardous substances given by the REACH Candidate List or the Norwegian Priority List.

## Additional environmental information

### Additional environmental impact indicators required in NPCR Part A for construction products

| Indicator | Unit                    | A1-3 | A4       | A5 | B1        | C1       | C2       | C3       | C4       | D         |
|-----------|-------------------------|------|----------|----|-----------|----------|----------|----------|----------|-----------|
| GWP-IOBC  | kg CO <sub>2</sub> -eq. | ND   | 2.50e+01 | ND | -3.20e+00 | 1.48e+01 | 1.25e+01 | 7.10e+00 | 7.86e+00 | -2.29e+00 |

**GWP-IOBC:** Global Warming Potential - Instantaneous oxidation of biogenic carbon

## Bibliography

|                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DIN EN ISO 14025:2011-10               | Environmental labels and declarations - Type III environmental declarations - Principles and procedures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| DIN EN ISO 14040:2021-02               | Environmental management - Life cycle assessment - Principles and framework                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| DIN EN ISO 14044:2021-02               | Environmental management - Life cycle assessment - Requirements and guidelines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| EN 15804:2012+A2:2019                  | Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| DIN CENTR 15941:2010-11                | Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| DIN EN 15942:2022-04                   | Sustainability of construction works - Environmental product declarations - Communication format business-to-business                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ISO 21930:2017-07                      | Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| ecoinvent v3.10                        | ecoinvent, Zurich, Switzerland, database version 3.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| PCR                                    | NPCR 020 PART B for concrete and concrete elements (v3.0)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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