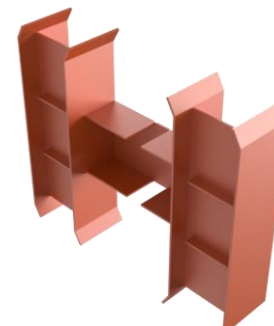
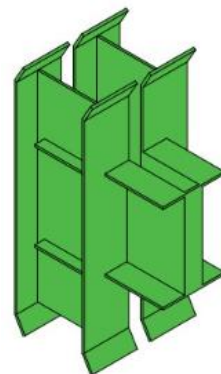
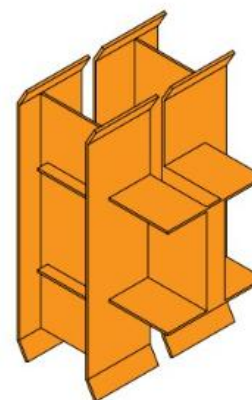
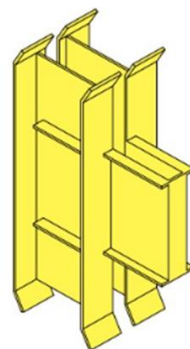


# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

Hi-Vis Gripper (HV-GR) – HDPE Joist End Seal  
ITW Construction Products



**EPD HUB, HUB-2470**

Publishing date 24 January 2025, last updated on 5 February 2025, valid until 23 January 2030.

## GENERAL INFORMATION

### MANUFACTURER

|                 |                                                                                    |
|-----------------|------------------------------------------------------------------------------------|
| Manufacturer    | ITW Construction Products                                                          |
| Address         | 1 Wheatstone Pl, Southfield Industrial Estate, Glenrothes, Fife, KY6 2SW, Scotland |
| Contact details | technical@itwcp.com                                                                |
| Website         | <a href="https://www.itwcp-offsite.co.uk/">https://www.itwcp-offsite.co.uk/</a>    |

### EPD STANDARDS, SCOPE AND VERIFICATION

|                    |                                                                                                                                                                                    |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Program operator   | EPD Hub, hub@epdhub.com                                                                                                                                                            |
| Reference standard | and ISO 14025                                                                                                                                                                      |
| PCR                | EPD Hub Core PCR Version 1.1, 5 Dec 2023                                                                                                                                           |
| Sector             | Construction product                                                                                                                                                               |
| Category of EPD    | Third party verified EPD                                                                                                                                                           |
| Parent EPD number  | -                                                                                                                                                                                  |
| Scope of the EPD   | Cradle to gate with options, A4-A5, and modules C1-C4, D                                                                                                                           |
| EPD author         | ITW Construction Products                                                                                                                                                          |
| EPD verification   | Independent verification of this EPD and data, according to ISO 14025:<br><input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification |
| EPD verifier       | Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited                                                                                                      |

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

### PRODUCT

|                                   |                                                                                 |
|-----------------------------------|---------------------------------------------------------------------------------|
| Product name                      | Hi-Vis Gripper (HV-GR) – HDPE Joist End Seal                                    |
| Additional labels                 | -                                                                               |
| Product reference                 | <a href="https://www.itwcp-offsite.co.uk/">https://www.itwcp-offsite.co.uk/</a> |
| Place of production               | Milton Keynes, England                                                          |
| Period for data                   | Calendar Year 2023                                                              |
| Averaging in EPD                  | No averaging                                                                    |
| Variation in GWP-fossil for A1-A3 | Not applicable                                                                  |

### ENVIRONMENTAL DATA SUMMARY

|                                             |      |
|---------------------------------------------|------|
| Declared unit                               | 1kg  |
| Declared unit mass                          | 1 kg |
| GWP-fossil, A1-A3 (kgCO <sub>2</sub> e)     | 2.36 |
| GWP-total, A1-A3 (kgCO <sub>2</sub> e)      | 2.00 |
| Secondary material, inputs (%)              | 0.3  |
| Secondary material, outputs (%)             | 24   |
| Total energy use, A1-A3 (kWh)               | 10.3 |
| Net freshwater use, A1-A3 (m <sup>3</sup> ) | 0.03 |

## PRODUCT AND MANUFACTURER

### ABOUT THE MANUFACTURER

ITW Construction Products UK/Nordics is a division of ITW (Illinois Tool Works Ltd), a multinational industrial business operating across multiple industries.

Since ITW's founding more than 100 years ago, it has become one of the world's leading diversified manufacturers of specialized industrial equipment, consumables, and related service businesses. The foundation of our company is the ITW Business Model, a unique and differentiated set of core capabilities and business practices that comprises three key elements: ITW's 80/20 Front to Back Process, customer-back innovation and a decentralized entrepreneurial culture.

At ITW Construction Products UK/Nordics we are suppliers of innovative, engineered fastening systems and related consumables and software. This product is uniquely specified for a variety of materials, including wood, concrete and steel.

### PRODUCT DESCRIPTION

#### Product Overview

The High-Vis Gripper (HV-GR) HDPE Joist End Seal is made from HDPE and used in a built-in detail for I-joists into masonry providing an air-tight seal at joist end. The product can be used on both external and party walls.

#### Main Components

The primary material used in these products is high-quality HDPE, which was selected for its durability.

#### Use Cases

They are typically used in a built-in detail for I-joists into masonry providing an air-tight seal at joist end.

#### Technical Details

Material: High-quality HDPE

Strength: Engineered to air-tight seal at joist end based on industry standards.

Applications: Primarily used in residential, commercial, and industrial building projects.

Compliance: Manufactured to meet relevant construction codes and standards to ensure safety and performance.

Further information can be found at <https://www.itwcp-offsite.co.uk>.

## PRODUCT RAW MATERIAL MAIN COMPOSITION

| Raw material category | Amount, mass % | Material origin                          |
|-----------------------|----------------|------------------------------------------|
| Metals                | -              | -                                        |
| Minerals              | -              | -                                        |
| Fossil materials      | 100            | HDPE - United Kingdom and Colorant - USA |
| Bio-based materials   | -              | -                                        |

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

|                                            |       |
|--------------------------------------------|-------|
| Biogenic carbon content in product, kg C   | 0     |
| Biogenic carbon content in packaging, kg C | 0.098 |

## FUNCTIONAL UNIT AND SERVICE LIFE

|                        |      |
|------------------------|------|
| Declared unit          | 1kg  |
| Mass per declared unit | 1 kg |
| Functional unit        | -    |
| Reference service life | -    |

## SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

# PRODUCT LIFE-CYCLE

## SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

| Product stage |           |               | Assembly stage |          | Use stage |             |        |             |               |                        |                       | End of life stage          |           |                  |          | Beyond the system boundaries |          |           |
|---------------|-----------|---------------|----------------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|------------------------------|----------|-----------|
| A1            | A2        | A3            | A4             | A5       | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C1                         | C2        | C3               | C4       | D                            |          |           |
| X             | X         | X             | X              | X        | MND       | MND         | MND    | MND         | MND           | MND                    | MND                   | X                          | X         | X                | X        | X                            |          |           |
| Raw materials | Transport | Manufacturing | Transport      | Assembly | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | Deconstruction/ demolition | Transport | Waste processing | Disposal | Reuse                        | Recovery | Recycling |

Modules not declared = MND. Modules not relevant = MNR

## MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

The product is manufactured from high density polyethylene mixed with colourant. The materials are mixed in the moulding machine hopper and then injection moulded by specific tooling to create the final product. The product is moulded to the correct dimensions and colour then packaged.

The finished product is packaged in cardboard boxes and leaves the manufacturing facility on a wooden pallet, with packaging films wrapped around the pallet for additional cover and security of the products.

The process is powered by medium-voltage grid electricity. Gas & Electricity is used to heat up and cool the production areas as required.

Ancillary materials such as water and lubricants are used in machinery [moulding machines / air compressors/ chiller] to maintain operational efficiency and to reduce the wear of machines thus ensuring stable moulding conditions.

Plastic scraps generated during production are reground and recycled into production, emphasizing waste reduction. Lubricant waste is environmentally managed with transportation to the waste facility assumed to be 50km. Each step is designed to maximize resource efficiency while maintaining high quality and environmental responsibility.

## TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The transportation distance is defined in the EPD. The finished products are transported initially to ITW Construction Products Warehouse in Glenrothes, Scotland before they are transported to customer locations which include England, Scotland, Wales, Ireland and Northern Ireland. The transport distance to the customer considers all locations and the quantity shipped. 100% vehicle capacity utilization volume factor is assumed, meaning all shipments are considered full loads. Although actual load factors can vary, this assumption simplifies calculations since transportation emissions contribute minimally to overall impact. Products sent to



Northern Ireland and Ireland require sea transport as part of their delivery route. These shipments are typically consolidated with other cargo on shared freight vessels, rather than using dedicated transport solely for our products. This shared arrangement minimizes emissions per unit by distributing them across multiple loads on the same journey. There is no additional installation resources required for this product as it uses existing resources such as mortar.

For A5 Wastes; EoL HDPE - 24% recycled, 49% Energy recovery, 27% landfill according to Plastics Europe 2021. Transportation to the waste facility assumed to be 50km.

### PRODUCT USE AND MAINTENANCE (B1-B7)

The use stage is not assessed as it is no impacts are expected to occur during the use of the product.

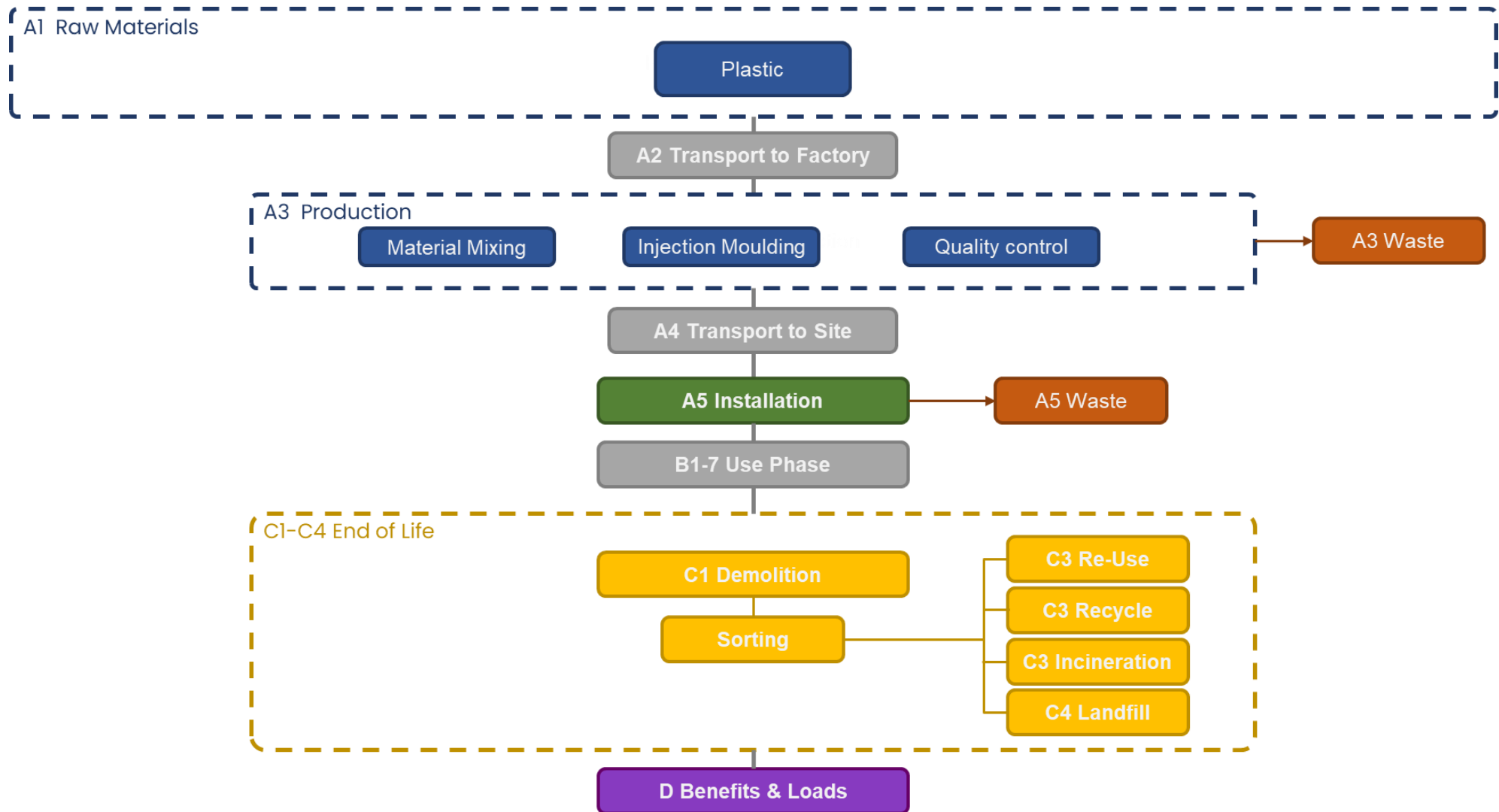
Air, soil, and water impacts during the use phase have not been studied.

### PRODUCT END OF LIFE (C1-C4, D)

Since the consumption of energy and natural resources is negligible for disassembling of the end-of-life product, the impacts of demolition are assumed zero (C1). It is assumed that the waste product is collected separately and transported to a waste treatment facility. Transportation distance to waste treatment plant is assumed to be 50km and the transportation method is assumed to be lorry (C2). Module C3 accounts for energy and resource inputs for sorting and treating of materials for recycling. Landfilled materials are included in module C4. Due to the material recovery potential of the product, and material and energy recovery potential of the recycled raw materials lead to avoided virgin material production and the energy recovered from incineration replaces electricity and heat from primary sources. Benefits and loads from incineration and recycling are included in Module D.

For EoL HDPE - 24% recycled, 49% Energy recovery, 27% landfill according to Plastics Europe 2021. Transportation to the waste facility assumed to be 50km.

## MANUFACTURING PROCESS



## LIFE-CYCLE ASSESSMENT

### CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

### ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

| Data type                      | Allocation                  |
|--------------------------------|-----------------------------|
| Raw materials                  | No allocation               |
| Packaging material             | Allocated by mass or volume |
| Ancillary materials            | Allocated by mass or volume |
| Manufacturing energy and waste | Allocated by mass or volume |

### AVERAGES AND VARIABILITY

|                                   |                |
|-----------------------------------|----------------|
| Type of average                   | No averaging   |
| Averaging method                  | Not applicable |
| Variation in GWP-fossil for A1-A3 | Not applicable |

There is no average result considered in this study since this EPD refers to one specific product produced in one production plant.

### LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.



# ENVIRONMENTAL IMPACT DATA

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

| Impact category                     | Unit                   | A1       | A2       | A3        | A1-A3     | A4       | A5       | B1  | B2  | B3  | B4  | B5  | B6  | B7  | C1       | C2       | C3        | C4        | D         |
|-------------------------------------|------------------------|----------|----------|-----------|-----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|-----------|-----------|-----------|
| GWP – total <sup>1)</sup>           | kg CO <sub>2</sub> e   | 2.04E+00 | 3.94E-02 | -7.84E-02 | 2.00E+00  | 2.43E-01 | 3.70E-01 | MND | MND | MND | MND | MND | MND | MND | 3.31E-02 | 2.39E-03 | 1.50E+00  | 4.73E-01  | -5.77E-03 |
| GWP – fossil                        | kg CO <sub>2</sub> e   | 2.03E+00 | 3.94E-02 | 2.83E-01  | 2.36E+00  | 2.42E-01 | 7.59E-03 | MND | MND | MND | MND | MND | MND | MND | 3.31E-02 | 2.39E-03 | 1.51E+00  | 4.74E-01  | -1.91E-02 |
| GWP – biogenic                      | kg CO <sub>2</sub> e   | 3.68E-03 | 0.00E+00 | -3.63E-01 | -3.59E-01 | 0.00E+00 | 3.63E-01 | MND | MND | MND | MND | MND | MND | MND | 0.00E+00 | 0.00E+00 | -2.63E-03 | -9.73E-04 | 1.34E-02  |
| GWP – LULUC                         | kg CO <sub>2</sub> e   | 6.12E-04 | 1.65E-05 | 1.01E-03  | 1.64E-03  | 1.02E-04 | 3.87E-06 | MND | MND | MND | MND | MND | MND | MND | 3.30E-06 | 8.83E-07 | 2.76E-05  | 3.36E-06  | -2.96E-05 |
| Ozone depletion pot.                | kg CFC-11e             | 4.35E-08 | 8.50E-09 | 2.18E-08  | 7.38E-08  | 5.23E-08 | 6.49E-10 | MND | MND | MND | MND | MND | MND | MND | 7.07E-09 | 5.50E-10 | 1.88E-09  | 1.24E-09  | -1.38E-09 |
| Acidification potential             | mol H <sup>+</sup> e   | 7.21E-03 | 1.16E-04 | 1.35E-03  | 8.67E-03  | 7.14E-04 | 3.11E-05 | MND | MND | MND | MND | MND | MND | MND | 3.44E-04 | 1.01E-05 | 2.29E-04  | 8.85E-05  | -1.26E-04 |
| EP-freshwater <sup>2)</sup>         | kg Pe                  | 3.11E-05 | 3.34E-07 | 2.21E-05  | 5.36E-05  | 2.06E-06 | 1.42E-07 | MND | MND | MND | MND | MND | MND | MND | 1.10E-07 | 1.96E-08 | 6.50E-07  | 8.26E-08  | -1.67E-06 |
| EP-marine                           | kg Ne                  | 1.25E-03 | 2.31E-05 | 3.69E-04  | 1.64E-03  | 1.43E-04 | 2.84E-05 | MND | MND | MND | MND | MND | MND | MND | 1.52E-04 | 3.01E-06 | 9.41E-05  | 4.14E-05  | -2.87E-05 |
| EP-terrestrial                      | mol Ne                 | 1.37E-02 | 2.57E-04 | 3.04E-03  | 1.70E-02  | 1.58E-03 | 1.10E-04 | MND | MND | MND | MND | MND | MND | MND | 1.67E-03 | 3.32E-05 | 1.06E-03  | 4.24E-04  | -3.08E-04 |
| POCP (“smog”) <sup>3)</sup>         | kg NMVOCe              | 6.75E-03 | 9.66E-05 | 8.44E-04  | 7.69E-03  | 5.95E-04 | 3.45E-05 | MND | MND | MND | MND | MND | MND | MND | 4.59E-04 | 1.06E-05 | 2.89E-04  | 1.27E-04  | -8.39E-05 |
| ADP-minerals & metals <sup>4)</sup> | kg Sbe                 | 1.38E-05 | 1.39E-07 | 1.11E-06  | 1.50E-05  | 8.59E-07 | 3.41E-08 | MND | MND | MND | MND | MND | MND | MND | 1.68E-08 | 5.61E-09 | 2.78E-07  | 2.65E-08  | -4.47E-08 |
| ADP-fossil resources                | MJ                     | 7.13E+01 | 5.71E-01 | 4.75E+00  | 7.66E+01  | 3.52E+00 | 6.57E-02 | MND | MND | MND | MND | MND | MND | MND | 4.45E-01 | 3.59E-02 | 1.84E-01  | 1.01E-01  | -3.82E-01 |
| Water use <sup>5)</sup>             | m <sup>3</sup> e depr. | 9.66E-01 | 2.52E-03 | 1.58E-01  | 1.13E+00  | 1.55E-02 | 4.85E-03 | MND | MND | MND | MND | MND | MND | MND | 1.20E-03 | 1.61E-04 | 1.61E-02  | 1.31E-02  | -7.66E-03 |

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO<sub>4</sub>e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. 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 experience with the indicator.

## ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

| Impact category                  | Unit          | A1       | A2       | A3       | A1-A3    | A4       | A5       | B1  | B2  | B3  | B4  | B5  | B6  | B7  | C1       | C2       | C3       | C4       | D         |
|----------------------------------|---------------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| Particulate matter               | Incidence     | 7.20E-08 | 3.14E-09 | 1.19E-08 | 8.70E-08 | 1.93E-08 | 4.73E-10 | MND | MND | MND | MND | MND | MND | MND | 9.22E-09 | 2.76E-10 | 3.09E-09 | 1.79E-09 | -2.40E-09 |
| Ionizing radiation <sup>6)</sup> | kBq<br>11235e | 1.35E-01 | 2.67E-03 | 9.17E-02 | 2.29E-01 | 1.65E-02 | 6.06E-04 | MND | MND | MND | MND | MND | MND | MND | 2.05E-03 | 1.71E-04 | 1.61E-03 | 3.87E-04 | -8.20E-03 |
| Ecotoxicity (freshwater)         | CTUe          | 1.11E+01 | 5.23E-01 | 4.03E+00 | 1.56E+01 | 3.22E+00 | 1.82E-01 | MND | MND | MND | MND | MND | MND | MND | 2.68E-01 | 3.23E-02 | 7.05E-01 | 4.44E-01 | -4.40E-01 |
| Human toxicity, cancer           | CTUh          | 6.07E-10 | 1.47E-11 | 3.78E-10 | 1.00E-09 | 9.08E-11 | 8.22E-12 | MND | MND | MND | MND | MND | MND | MND | 1.03E-11 | 7.94E-13 | 2.30E-10 | 7.31E-11 | -8.78E-12 |
| Human tox. non-cancer            | CTUh          | 1.30E-08 | 4.75E-10 | 3.51E-09 | 1.70E-08 | 2.92E-09 | 2.43E-10 | MND | MND | MND | MND | MND | MND | MND | 1.94E-10 | 3.20E-11 | 1.78E-09 | 9.01E-10 | -3.18E-10 |
| SQP <sup>7)</sup>                | -             | 1.88E+00 | 4.00E-01 | 2.32E+01 | 2.55E+01 | 2.46E+00 | 7.61E-02 | MND | MND | MND | MND | MND | MND | MND | 5.79E-02 | 4.14E-02 | 2.54E-01 | 1.05E-01 | -2.84E-01 |

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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; 7) SQP = Land use related impacts/soil quality.

## USE OF NATURAL RESOURCES

| Impact category                    | Unit           | A1       | A2       | A3        | A1-A3    | A4       | A5        | B1  | B2  | B3  | B4  | B5  | B6  | B7  | C1       | C2       | C3        | C4        | D         |
|------------------------------------|----------------|----------|----------|-----------|----------|----------|-----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|-----------|-----------|-----------|
| Renew. PER as energy <sup>8)</sup> | MJ             | 1.21E+00 | 6.78E-03 | 2.67E+00  | 3.88E+00 | 4.18E-02 | 3.89E-03  | MND | MND | MND | MND | MND | MND | MND | 2.54E-03 | 4.05E-04 | 1.80E-02  | 1.86E-03  | -1.84E-01 |
| Renew. PER as material             | MJ             | 0.00E+00 | 0.00E+00 | 3.16E+00  | 3.16E+00 | 0.00E+00 | -3.16E+00 | MND | MND | MND | MND | MND | MND | MND | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00  | 1.83E-01  |
| Total use of renew. PER            | MJ             | 1.21E+00 | 6.78E-03 | 5.83E+00  | 7.04E+00 | 4.18E-02 | -3.16E+00 | MND | MND | MND | MND | MND | MND | MND | 2.54E-03 | 4.05E-04 | 1.80E-02  | 1.86E-03  | -1.31E-03 |
| Non-re. PER as energy              | MJ             | 2.79E+01 | 5.71E-01 | 4.50E+00  | 3.30E+01 | 3.52E+00 | 6.57E-02  | MND | MND | MND | MND | MND | MND | MND | 4.45E-01 | 3.59E-02 | 1.84E-01  | 1.01E-01  | -3.58E-01 |
| Non-re. PER as material            | MJ             | 4.33E+01 | 0.00E+00 | -6.29E-01 | 4.27E+01 | 0.00E+00 | -2.20E-01 | MND | MND | MND | MND | MND | MND | MND | 0.00E+00 | 0.00E+00 | -3.10E+01 | -1.15E+01 | 3.68E+01  |
| Total use of non-re. PER           | MJ             | 7.13E+01 | 5.71E-01 | 3.87E+00  | 7.57E+01 | 3.52E+00 | -1.55E-01 | MND | MND | MND | MND | MND | MND | MND | 4.45E-01 | 3.59E-02 | -3.08E+01 | -1.14E+01 | 3.64E+01  |
| Secondary materials                | kg             | 2.99E-03 | 1.91E-04 | 8.79E-02  | 9.11E-02 | 1.17E-03 | 7.07E-05  | MND | MND | MND | MND | MND | MND | MND | 1.74E-04 | 9.98E-06 | 9.60E-04  | 8.44E-05  | 4.59E-04  |
| Renew. secondary fuels             | MJ             | 2.73E-05 | 2.47E-06 | 7.75E-02  | 7.75E-02 | 1.52E-05 | 5.12E-07  | MND | MND | MND | MND | MND | MND | MND | 5.70E-07 | 1.01E-07 | 6.93E-06  | 6.98E-07  | -9.20E-05 |
| Non-ren. secondary fuels           | MJ             | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00 | 0.00E+00 | 0.00E+00  | MND | MND | MND | MND | MND | MND | MND | 0.00E+00 | 0.00E+00 | 0.00E+00  | 0.00E+00  | 0.00E+00  |
| Use of net fresh water             | m <sup>3</sup> | 2.50E-02 | 6.80E-05 | 4.33E-03  | 2.94E-02 | 4.19E-04 | 3.03E-05  | MND | MND | MND | MND | MND | MND | MND | 2.70E-05 | 4.66E-06 | 3.95E-04  | 6.53E-05  | -2.47E-04 |

8) PER = Primary energy resources.

## END OF LIFE – WASTE

| Impact category     | Unit | A1       | A2       | A3       | A1-A3    | A4       | A5       | B1  | B2  | B3  | B4  | B5  | B6  | B7  | C1       | C2       | C3       | C4       | D         |
|---------------------|------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| Hazardous waste     | kg   | 4.74E-02 | 8.26E-04 | 1.76E-02 | 6.58E-02 | 5.09E-03 | 5.04E-04 | MND | MND | MND | MND | MND | MND | MND | 5.96E-04 | 4.77E-05 | 2.59E-03 | 3.24E-03 | -1.14E-03 |
| Non-hazardous waste | kg   | 1.33E+00 | 1.32E-02 | 8.34E-01 | 2.18E+00 | 8.12E-02 | 1.24E-01 | MND | MND | MND | MND | MND | MND | MND | 4.19E-03 | 7.83E-04 | 5.27E-01 | 2.27E-01 | 1.51E+01  |
| Radioactive waste   | kg   | 4.23E-05 | 3.80E-06 | 2.71E-05 | 7.32E-05 | 2.34E-05 | 2.56E-07 | MND | MND | MND | MND | MND | MND | MND | 3.13E-06 | 2.40E-07 | 5.44E-07 | 4.63E-07 | -2.40E-06 |

## END OF LIFE – OUTPUT FLOWS

| Impact category          | Unit | A1       | A2       | A3       | A1-A3    | A4       | A5       | B1  | B2  | B3  | B4  | B5  | B6  | B7  | C1       | C2       | C3       | C4       | D        |
|--------------------------|------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|----------|
| Components for re-use    | kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | MND | MND | MND | MND | MND | MND | MND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Materials for recycling  | kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 1.20E-01 | MND | MND | MND | MND | MND | MND | MND | 0.00E+00 | 0.00E+00 | 2.40E-01 | 0.00E+00 | 0.00E+00 |
| Materials for energy rec | kg   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 8.02E-03 | MND | MND | MND | MND | MND | MND | MND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy          | MJ   | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 3.31E-01 | MND | MND | MND | MND | MND | MND | MND | 0.00E+00 | 0.00E+00 | 1.52E+01 | 0.00E+00 | 0.00E+00 |

## ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

| Impact category      | Unit                               | A1       | A2       | A3       | A1-A3    | A4       | A5       | B1  | B2  | B3  | B4  | B5  | B6  | B7  | C1       | C2       | C3       | C4       | D         |
|----------------------|------------------------------------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| Global Warming Pot.  | kg CO <sub>2</sub> e               | 1.93E+00 | 3.90E-02 | 2.84E-01 | 2.25E+00 | 2.40E-01 | 1.98E-02 | MND | MND | MND | MND | MND | MND | MND | 3.27E-02 | 2.37E-03 | 1.51E+00 | 4.69E-01 | -1.89E-02 |
| Ozone depletion Pot. | kg CFC <sub>11</sub> e             | 3.78E-08 | 6.73E-09 | 1.85E-08 | 6.30E-08 | 4.15E-08 | 5.26E-10 | MND | MND | MND | MND | MND | MND | MND | 5.60E-09 | 4.36E-10 | 1.71E-09 | 1.01E-09 | -1.20E-09 |
| Acidification        | kg SO <sub>2</sub> e               | 6.02E-03 | 9.51E-05 | 1.07E-03 | 7.18E-03 | 5.86E-04 | 2.36E-05 | MND | MND | MND | MND | MND | MND | MND | 2.45E-04 | 7.87E-06 | 1.63E-04 | 6.31E-05 | -1.02E-04 |
| Eutrophication       | kg PO <sub>4</sub> <sup>3</sup> e  | 1.53E-03 | 2.10E-05 | 9.27E-04 | 2.48E-03 | 1.29E-04 | 2.68E-04 | MND | MND | MND | MND | MND | MND | MND | 5.69E-05 | 1.79E-06 | 3.89E-04 | 1.39E-03 | -6.30E-05 |
| POCP (“smog”)        | kg C <sub>2</sub> H <sub>4</sub> e | 6.13E-04 | 4.72E-06 | 6.88E-05 | 6.87E-04 | 2.91E-05 | 3.87E-06 | MND | MND | MND | MND | MND | MND | MND | 5.36E-06 | 3.07E-07 | 8.57E-06 | 1.35E-05 | -5.54E-06 |
| ADP-elements         | kg Sbe                             | 1.38E-05 | 1.36E-07 | 1.03E-06 | 1.49E-05 | 8.39E-07 | 3.33E-08 | MND | MND | MND | MND | MND | MND | MND | 1.65E-08 | 5.43E-09 | 2.63E-07 | 2.40E-08 | -4.38E-08 |
| ADP-fossil           | MJ                                 | 7.12E+01 | 5.71E-01 | 4.73E+00 | 7.65E+01 | 3.52E+00 | 6.56E-02 | MND | MND | MND | MND | MND | MND | MND | 4.45E-01 | 3.59E-02 | 1.84E-01 | 1.01E-01 | -3.81E-01 |

## ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

| Impact category       | Unit                 | A1       | A2       | A3       | A1-A3    | A4       | A5       | B1  | B2  | B3  | B4  | B5  | B6  | B7  | C1       | C2       | C3       | C4       | D         |
|-----------------------|----------------------|----------|----------|----------|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|----------|----------|----------|----------|-----------|
| GWP-GHG <sup>9)</sup> | kg CO <sub>2</sub> e | 2.03E+00 | 3.94E-02 | 2.84E-01 | 2.36E+00 | 2.43E-01 | 7.59E-03 | MND | MND | MND | MND | MND | MND | MND | 3.31E-02 | 2.39E-03 | 1.51E+00 | 4.74E-01 | -1.92E-02 |

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH<sub>4</sub> fossil, CH<sub>4</sub> biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO<sub>2</sub> is set to zero.

## VERIFICATION STATEMENT

### VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online

This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

### THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

Updated 05.02.2025

