CASTING A SUSTAINABLE FUTURE IN CONCRETE

# ENVIRONMENTAL PRODUCT DECLARATION

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

## - Brick Faced Concrete Sandwich Panel


CREAGH
INNOVATION IN CONCRETE

**Address:**
Blackpark Road
Toomebridge
BT41 3SL

**Contact Us:**
www.creaghconcrete.com
info@creaghconcrete.com
(028) 796 50500

## GENERAL INFORMATION

| MANUFACTURER | |
|---|---|
| Manufacturer | Creagh Concrete Products Ltd |
| Address | 38 Blackpark Road, Toome, Co Antrim, N Ireland |
| Contact Details | info@creaghconcrete.com |
| Website | www. creaghconcrete.com |

## EPD STANDARDS, SCOPE

| EPD STANDARDS, SCOPE | |
|---|---|
| Program Operator | OneClickLCA |
| Reference Standard | EN 15804+A2:2019 and ISO 14025 |
| PCR | EPD Hub Core PCR version 1.1, 5 Dec 2023 |
| Sector | Construction product |
| Category of EPD | Self Declared |
| Scope of EPD | Cradle to gate with modules C1-C4, D |
| EPD Author | J. Kennedy |

This EPD is intended for business-to-business and/or business-to-consumer communication. 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 | Brickfaced Concrete Sandwich Panel |
| Additional labels | - |
| Product Reference | - |
| Place of production | United Kingdom |
| Place(s) of installation and use | United Kingdom & Ireland |
| Period of data | 2025 |
| Averaging in EPD | No averaging |
| Variation in GWP-fossil for A1-A3 (%) | - |
| GTIN (Global Trade Item Number) | - |
| NOBB (Norwegian Building Product Database) | - |

| ENVIRONMENTAL DATA SUMMARY | |
|---|---|
| Declared unit | M2 |
| Declared unit mass | 629 kg |
| GWP-fossil, A1-A3 (kgCO2e) | 233.4 |
| GWP-total, A1-A3 (kgCO2e) | 230.4 |
| Secondary material, inputs (%) | 106 |
| Secondary material, outputs (%) | 0 |
| Total energy use, A1-A3 (kWh) | 633 |
| Net fresh water use, A1-A3 (m3) | 128 |

## PRODUCT AND MANUFACTURER

### ABOUT THE MANUFACTURER

Creagh Concrete is one of the leading producers of concrete products for the civil engineering, residential, education, commercial, custodial, and agricultural sectors. The company offers a diverse portfolio of products that showcase the limitless possibilities and potential of precast concrete. Its flooring range includes prestressed hollowcore flooring, Spantherm Insulated flooring system, prestressed t-beam flooring, plate flooring and Spantherm insulated flooring. Other products include ready mixed concrete, bricks and blocks, sand and gravel, agricultural precast products, general precast for home and garden, structural precast such as precast stairs, landings, terrace units and frames. Creagh design, manufactures and supplies an extensive range of concrete products. The company operates from its head office in Toomebridge, Northern Ireland with bases in Ardboe, Dunloy, Draperstown and Magheraglass and at Nottingham, England and Edinburgh, Scotland.

### PRODUCT DESCRIPTION

Insulated brick faced concrete sandwich panel This product is precast, slabs consisting of aggregates, cement and reinforcing rebar, rockwool insulation

Further information can be found at creaghconcrete.com

| BIOGENIC CARBON CONTENT<br>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 |

| PRODUCT RAW MATERIAL MAIN COMPOSITION | | |
|---|---|---|
| Raw material category | Amount, mass-% | Material origin |
| Metals | 5% | UK |
| Minerals | 95% | UK |
| Fossil materials | NA | NA |
| Bio-based materials | NA | NA |

| FUNCTIONAL UNIT AND SERVICE LIFE | |
|---|---|
| Declared unit VP-011 | M2 |
| Mass per declared unit VP-012 | 629 kg |
| Functional unit | Structural Unit |
| Reference service life | 100 years |

| SUBSTANCES, REACH - VERY HIGH CONCERN | | |
|---|---|---|
| Substances of very high concern | EC | CAS |
| 0 | - | - |
| 0 | - | - |
| 0 | - | - |
| 0 | - | - |

## 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 | MND | MND | 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 | Deconstr./demol. | Transport | Waste processing | Disposal | Reuse | Recovery | Recycling |

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

### 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 production of the hollowcore slabs begins with the preparation of the casting bed, which includes cleaning the casting platform and applying form oil. At the same time, reinforcement strand is placed on the bed. The stand is pulled by a brush cart machine to the end of the casting bed. When the strand is placed, they are tensioned, after which semi-dry concrete is placed via a slip forming machine incapsulating the strand. After casting the additional details are added such as lifting pins, open cores etc. and the slab is covered and left to cure. When the slabs are cured they are cut into the required lengths and widths.

There is very little material loss in production as there is no formwork needed to cast hollowcore. There is some waste of ancillary material with small amount of mould oil remaining on the bed. There is no additional packaging required, the finished product is loaded with timber skids for dispatch, which are also reused.

### 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.

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

## 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 | Allocated by mass or volume |
| Packaging materials | Not applicable |
| 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 | % |

This EPD is product and factory specific and does not contain average calculations.

### 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 v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2’.

## ENVIRONMENTAL IMPACT DATA

KEY 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 – total1) | kg $CO_2$e | 2,31E+02 | 1,83E-02 | 2,48E+00 | 2,33E+02 | MND | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | MNR | 0,00E+00 | 0,00E+00 | 0,00E+00 | -2,26E+01 |
| GWP – fossil | kg $CO_2$e | 2,30E+02 | 1,83E-02 | 6,43E+00 | 2,36E+02 | MND | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | MNR | 0,00E+00 | 0,00E+00 | 0,00E+00 | -2,27E+01 |
| Water use5) | $m^3$e depr. | 8,05E+01 | 1,31E-03 | 5,33E-01 | 8,10E+01 | MND | 0,00E+00 | MND | MND | MND | MND | MND | MND | MND | MNR | 0,00E+00 | 0,00E+00 | 0,00E+00 | -1,77E+01 |