# ENVIRONMENTAL PRODUCT DECLARATION

## IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

## Brymec Cast Iron Drainage


**EPD HUB, EPD number HUB-5666**
Published on 09.03.2026, last updated on 09.03.2026, valid until 08.03.2031

Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

# GENERAL INFORMATION

## MANUFACTURER

| | |
|---|---|
| Manufacturer | Brymec Ltd. |
| Address | Unit C, Redlands, Coulsdon, Surrey, United Kingdom, CR5 2HT |
| Contact details | sales@brymec.com |
| Website | https://www.brymec.com/ |

## EPD STANDARDS, SCOPE AND VERIFICATION

| | |
|---|---|
| Program operator | EPD Hub, hub@epdhub.com |
| Reference standard | EN 15804:2012+A2:2019/AC:2021 and ISO 14025 |
| PCR | EPD Hub Core PCR Version 1.2, 24 Mar 2025 |
| Sector | Construction product |
| Category of EPD | Third party verified EPD |
| Scope of the EPD | Cradle to gate with modules C1-C4, D |
| EPD author | Adeleh Ghodsizadeh, Blue Marble Environmental Partnerships Ltd. |
| EPD verification | Independent verification of this EPD and data, according to ISO 14025:<br>☐ Internal verification ☑ External verification |
| EPD verifier | D.V, as an authorized verifier for EPD Hub |

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 | Brymec Cast Iron Drainage |
| Additional labels | - |
| Product reference | See Annex for List of Included Products |
| Place(s) of raw material origin | Global |
| Place of production | China and Austria |
| Place(s) of installation and use | United Kingdom |
| Period for data | Calendar Year (2023) |
| Averaging in EPD | Multiple products |
| Variation in GWP-fossil for A1-A3 (%) | -15% / +33% |
| A1-A3 Specific data (%) | 8 |

## ENVIRONMENTAL DATA SUMMARY

| | |
|---|---|
| Declared unit | 1 Kg |
| Declared unit mass | 1 kg |
| Mass of packaging | 0.09 kg |
| GWP-fossil, A1-A3 ($kgCO_2e$) | 5.64E+00 |
| GWP-total, A1-A3 ($kgCO_2e$) | 5.59E+00 |
| Secondary material, inputs (%) | 39.6 |
| Secondary material, outputs (%) | 79.5 |
| Total energy use, A1-A3 (kWh) | 22.2 |
| Net freshwater use, A1-A3 ($m^3$) | 0.06 |

# PRODUCT AND MANUFACTURER

## ABOUT THE MANUFACTURER

Brymec Ltd is a turnkey solutions provider to the building services industry, delivering complete M&E solutions alongside end-to-end project support, all backed by exceptional customer service and technical expertise.

Established in 1974 as a family business, Brymec manufactures a wide range of high-quality M&E products, delivered directly to site through a single point of contact via its innovative supply chain model: Brymec Breeze

## PRODUCT DESCRIPTION

This EPD is representative of Brymec Cast Iron Drainage manufactured from Cast iron, stainless steel and rubber. All fittings conform to BS EN1254-1:1998 and are guaranteed against manufacturing defects for 25 years. For full traceability all fittings are etched or stamped with unique branding; together with the EN specification reference and fitting size where space permits.

Product Application: Suitable for use on for soil, waste, and rainwater drainage. Incorporating the benefits high performance materials along with the ease of use, installation and maintenance cast iron drainage is popular for projects including hospitals and healthcare, commercial, offices, education buildings, and industrial projects.

The results of this EPD are representative for 1kg of Brymec Cast Iron Drainage. To calculate actual impacts per unit the results should be multiplied by the unit mass contained in the annex.

Further information can be found at: https://www.brymec.com/

## PRODUCT RAW MATERIAL MAIN COMPOSITION

| Raw material category | Amount, mass % | Material origin |
|---|---|---|
| Metals | 80.1 | Global |
| Minerals | 19.9 | Global |
| Fossil materials | - | - |
| Bio-based materials | - | - |

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

| | |
|---|---|
| Biogenic carbon content in product, kg C | - |
| Biogenic carbon content in packaging, kg C | 0.04 |

## FUNCTIONAL UNIT AND SERVICE LIFE

| | |
|---|---|
| Declared unit | 1 Kg |
| 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 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 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 = ND. 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.

A market-based approach is used in modelling the electricity mix utilized in the factory.

This EPD is representative of Brymec Cast Iron Drainage comprised of Couplers and Pipes manufactured from Cast Iron and Steel. The Cast Iron Tubes, Stainless Steel Couplers and Overclamps are sourced from a supplier in Austria, and the Iron Couplers are sourced from a supplier in China. The raw material is received from suppliers, cast into the desired shape, finished and packed for shipping to the UK. (A1/A2)

Transportation to the Brymec warehouse in the UK is via a combination of >32 tonne lorry and container ship (A2).

The products are received at the Brymec warehouse where they are unloaded and stored in the Brymec warehouse ready for dispatch. Medium voltage electricity drawn from the UK grid is used to supply energy to the warehouse. An Ecoinvent country-specific average electricity dataset (residual mix) has been used to model direct supply of electricity.

When an order is ready to be shipped it is packaged in a cardboard box and loaded for onward transportation to the customer (A3).

## TRANSPORT AND INSTALLATION (A4-A5)

This EPD does not consider the transportation to site and installation modules. Air, soil, and water impacts during the construction phase have not been studied.

Due to this EPD not disclosing the Installation phase, packaging waste has been modelled as leaving the system boundary at end-of-life.

In line with EPD Hub Core PCR Version 1.2, 24 Mar 2025, due to the exclusion of module A5, biogenic $CO_2$ of packaging has been balanced-out in the A1-A3 results.

## PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.

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

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

At the end of its life the product is assumed to be collected separately due to its high resale value. Manual dismantling of pipework is anticipated therefore no energy is required. (C1).

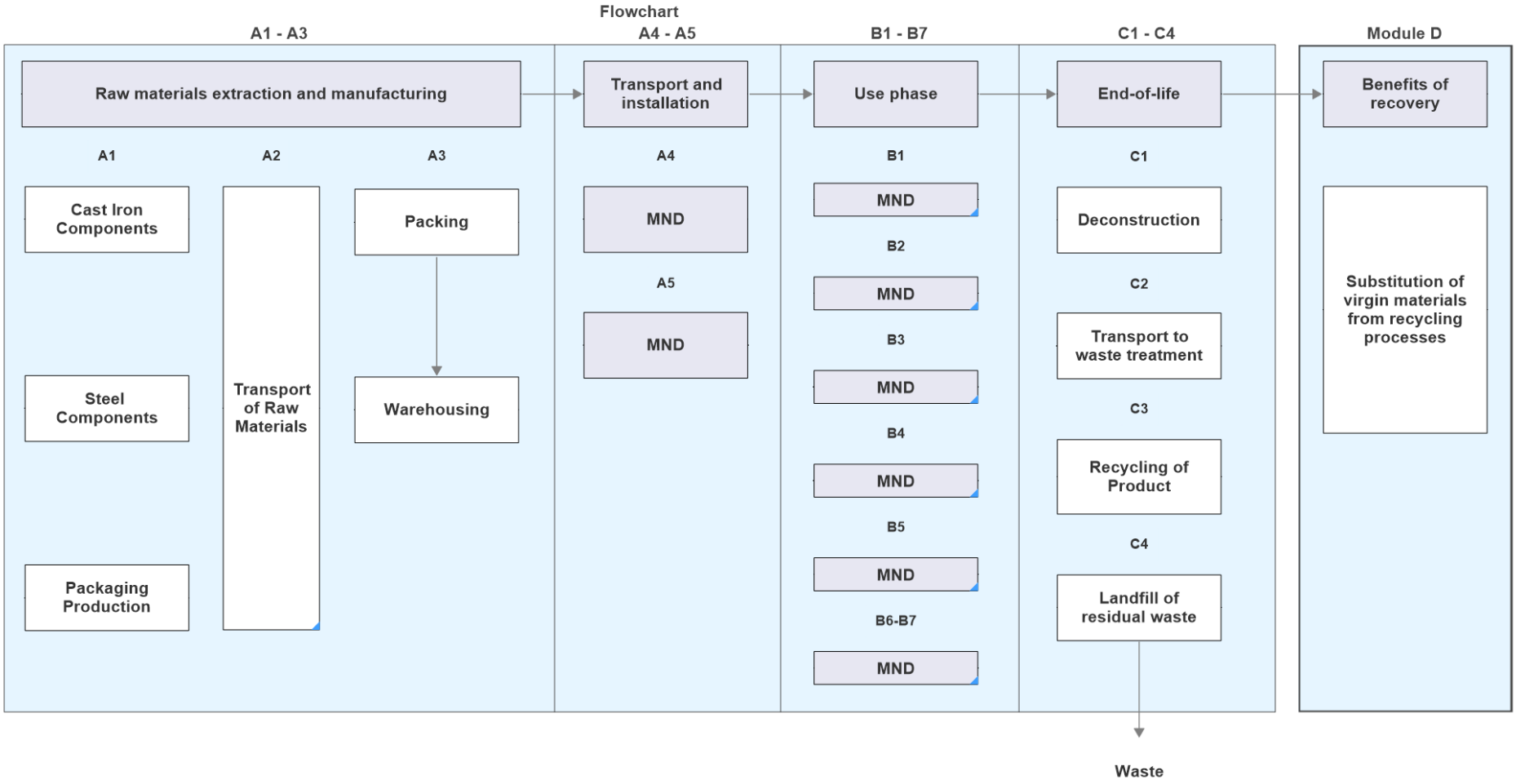
The product is assumed to be transported no more than 50km via >32 tonne lorry for recycling / waste treatment. (C2)

An end-of-life scenario for MEP products has been assumed, based on RICS v2. 90% of the metal in the product is assumed to be recycled, with the remaining 10% reaching landfill. Very small amounts of plastic in certain products are assumed to reach landfill with no benefits. (C3/C4).

Due to this EPD not disclosing the Installation phase, packaging waste has been modelled as leaving the system boundary at end-of-life. Cardboard packaging is assumed to be recycled at a rate of 74.3% with the remaining percentage assumed to reach landfill with no benefits (DEFRA, 2024) (C3/C4).

Module D accounts for the benefits and loads beyond the system boundary. The benefits from the provision of recyclates (metals, cardboard) to subsequent lifecycles is expressed as a negative figure, after first deducting the loads of the recycling process. The negative figure / benefit represents the avoided impact from the recycling process by not producing virgin material.

# SYSTEM BOUNDARY DIAGRAM



# 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.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

## VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

## 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 | Partly allocated by revenue |
| Packaging material | No allocation |
| Ancillary materials | Not applicable |
| Manufacturing energy and waste | Allocated by revenue |

## PRODUCT & MANUFACTURING SITES GROUPING

| | |
|---|---|
| Type of grouping | Multiple products |
| Grouping method | Based on average results of product group - by total revenue |
| Variation in GWP-fossil for A1-A3, % | -15% / +33% |

The results in this EPD are for multiple products, based on the average results of the product group. The mass of each product has been scaled to 1kg then weighted according to shares of total revenue during the reference period. The GWP fossil A1-A3 impacts do not exceed +/-50% difference for any one product within the group. The products are manufactured using similar

processes from similar raw materials and serve a similar functional purpose (drainage system).

The variation is based on assuming a 100% steel product (-15% variation in GWP-fossil for A1-A3) and a 100% cast iron product (33% variation in GWP-fossil for A1-A3).

## 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

*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.*

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP – total[1)] | kg $CO_2$e | 5.19E+00 | 4.42E-01 | -4.10E-02 | 5.59E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 5.68E-03 | 2.26E-01 | 6.38E-02 | -1.16E+00 |
| GWP – fossil | kg $CO_2$e | 5.09E+00 | 4.41E-01 | 1.03E-01 | 5.64E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 5.68E-03 | 2.18E-02 | 1.96E-02 | -1.08E+00 |
| GWP – biogenic | kg $CO_2$e | 9.11E-02 | 7.56E-05 | -1.46E-01 | -5.48E-02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.24E-06 | 2.05E-01 | 4.42E-02 | -7.70E-02 |
| GWP – LULUC | kg $CO_2$e | 5.86E-03 | 2.24E-04 | 2.08E-03 | 8.17E-03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 2.21E-06 | 2.37E-05 | 2.42E-06 | 8.46E-04 |
| Ozone depletion pot. | kg $CFC_{-11}$e | 5.71E-08 | 6.83E-09 | 3.32E-09 | 6.72E-08 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.18E-10 | 2.19E-10 | 8.14E-11 | -3.24E-09 |
| Acidification potential | mol $H^+$e | 1.10E-01 | 1.00E-02 | 5.87E-04 | 1.21E-01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.34E-05 | 2.16E-04 | 2.65E-05 | -4.36E-03 |
| EP-freshwater[2)] | kg Pe | 8.59E-03 | 1.84E-05 | 3.47E-05 | 8.64E-03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 3.97E-07 | 1.09E-05 | 3.90E-07 | -3.13E-04 |
| EP-marine | kg Ne | 8.06E-03 | 2.51E-03 | 1.99E-04 | 1.08E-02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 3.52E-06 | 4.80E-05 | 4.52E-04 | -9.32E-04 |
| EP-terrestrial | mol Ne | 9.98E-02 | 2.79E-02 | 1.54E-03 | 1.29E-01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 3.80E-05 | 5.42E-04 | 9.69E-05 | -1.04E-02 |
| POCP ("smog")[3)] | kg NMVOCe | 3.17E-02 | 7.78E-03 | 5.26E-04 | 4.01E-02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 2.33E-05 | 1.59E-04 | 4.74E-05 | -3.59E-03 |
| ADP-minerals & metals[4)] | kg Sbe | 1.24E-03 | 6.35E-07 | 3.76E-07 | 1.24E-03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.62E-08 | 1.18E-06 | 6.89E-09 | -5.08E-07 |
| ADP-fossil resources | MJ | 6.90E+01 | 5.69E+00 | 1.49E+00 | 7.61E+01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 8.53E-02 | 2.41E-01 | 7.11E-02 | -1.08E+01 |
| Water use[5)] | $m^3$e depr. | 2.09E+00 | 1.96E-02 | 2.83E-02 | 2.14E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 4.37E-04 | 4.28E-03 | 4.15E-04 | -8.52E-02 |

*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 PO4e; 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, EF 3.1

| 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 | 5.33E-07 | 2.07E-08 | 1.45E-08 | 5.68E-07 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 5.54E-10 | 3.02E-09 | 5.06E-10 | -1.21E-07 |
| Ionizing radiation[6)] | kBq U235e | 3.51E-01 | 3.62E-03 | 1.09E-02 | 3.65E-01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.03E-04 | 9.60E-04 | 8.87E-05 | 4.14E-02 |
| Ecotoxicity (freshwater) | CTUe | 1.23E+02 | 5.05E-01 | 5.83E-01 | 1.24E+02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.00E-02 | 1.42E-01 | 1.69E+00 | -3.26E+00 |
| Human toxicity, cancer | CTUh | 1.54E-08 | 8.85E-11 | 9.33E-11 | 1.56E-08 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 9.46E-13 | 1.65E-11 | 3.04E-12 | -2.22E-09 |
| Human tox. non-cancer | CTUh | 1.23E-06 | 2.04E-09 | 2.82E-09 | 1.24E-06 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 5.51E-11 | 1.03E-09 | 5.86E-10 | -1.95E-07 |
| SQP[7)] | - | 4.67E+01 | 1.96E+00 | 9.27E+00 | 5.79E+01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 8.58E-02 | 4.50E-01 | 1.54E-01 | -9.04E+00 |

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[8)] | MJ | 8.59E+00 | 5.64E-02 | 5.03E-01 | 9.15E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.39E-03 | -1.04E+00 | -4.14E-01 | -1.74E+00 |
| Renew. PER as material | MJ | 0.00E+00 | 0.00E+00 | 1.16E+00 | 1.16E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 0.00E+00 | -8.62E-01 | -2.98E-01 | -6.75E-03 |
| Total use of renew. PER | MJ | 8.59E+00 | 5.64E-02 | 1.66E+00 | 1.03E+01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.39E-03 | -1.90E+00 | -7.12E-01 | -1.74E+00 |
| Non-re. PER as energy | MJ | 6.37E+01 | 5.69E+00 | 1.50E+00 | 7.09E+01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 8.53E-02 | 2.41E-01 | -7.16E+00 | -1.07E+01 |
| Non-re. PER as material | MJ | 4.94E+00 | 0.00E+00 | 8.64E-03 | 4.94E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 0.00E+00 | -6.42E-03 | -4.94E+00 | 0.00E+00 |
| Total use of non-re. PER | MJ | 6.87E+01 | 5.69E+00 | 1.51E+00 | 7.58E+01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 8.53E-02 | 2.35E-01 | -1.21E+01 | -1.07E+01 |
| Secondary materials | kg | 3.96E-01 | 2.65E-03 | 5.12E-02 | 4.50E-01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 3.69E-05 | 3.06E-04 | 2.38E-05 | 6.25E-01 |
| Renew. secondary fuels | MJ | 6.35E-03 | 1.31E-05 | 1.25E-02 | 1.89E-02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 4.65E-07 | 1.24E-05 | 4.45E-07 | -5.78E-03 |
| Non-ren. secondary fuels | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Use of net fresh water | $m^3$ | 6.10E-02 | 5.17E-04 | 5.97E-04 | 6.21E-02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.26E-05 | 1.15E-04 | -8.11E-04 | -6.26E-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 | 1.18E+00 | 7.89E-03 | 5.74E-03 | 1.19E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.23E-04 | 1.98E-03 | 1.29E-04 | 2.65E-03 |
| Non-hazardous waste | kg | 3.95E+01 | 1.21E-01 | 1.68E-01 | 3.98E+01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 2.47E-03 | 5.43E-02 | 1.11E+00 | -2.66E+00 |
| Radioactive waste | kg | 8.84E-05 | 8.88E-07 | 2.49E-06 | 9.18E-05 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 2.54E-08 | 2.34E-07 | 2.17E-08 | 1.11E-05 |

## 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 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 0.00E+00 | 7.95E-01 | 0.00E+00 | 0.00E+00 |
| Materials for energy rec | kg | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |
| Exported energy – Electricity | MJ | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 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 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

## ENVIRONMENTAL IMPACTS – EN 15804+A1, CML

| 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 $CO_2e$ | 5.15E+00 | 4.39E-01 | 1.13E-01 | 5.71E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 5.64E-03 | 2.18E-02 | 5.02E-02 | -1.07E+00 |
| Ozone depletion Pot. | kg $CFC_{-11}e$ | 4.93E-08 | 5.42E-09 | 4.13E-09 | 5.88E-08 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 9.42E-11 | 1.81E-10 | 6.50E-11 | -3.11E-09 |
| Acidification | kg $SO_2e$ | 9.57E-02 | 8.00E-03 | 3.41E-04 | 1.04E-01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.06E-05 | 1.73E-04 | 2.00E-05 | -3.54E-03 |
| Eutrophication | kg $PO_4^3e$ | 1.10E-02 | 9.12E-04 | 2.23E-04 | 1.21E-02 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 2.65E-06 | 2.51E-05 | 4.97E-05 | -6.95E-04 |
| POCP (“smog”) | kg $C_2H_4e$ | 4.74E-03 | 4.08E-04 | 5.15E-05 | 5.20E-03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.08E-06 | 1.03E-05 | 1.08E-05 | -5.82E-04 |
| ADP-elements | kg Sbe | 1.24E-03 | 6.23E-07 | 3.61E-07 | 1.24E-03 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 1.59E-08 | 1.18E-06 | 6.70E-09 | -4.79E-07 |
| ADP-fossil | MJ | 6.35E+01 | 5.63E+00 | 1.33E+00 | 7.04E+01 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 8.36E-02 | 2.26E-01 | 6.97E-02 | -1.16E+01 |

## ADDITIONAL INDICATOR – GWP-GHG

| Impact category | Unit | A1 | A2 | A3 | A1-A3 | A4 | A5 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | C1 | C2 | C3 | C4 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP-GHG[9)] | kg $CO_2e$ | 5.10E+00 | 4.42E-01 | 1.05E-01 | 5.64E+00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | 0.00E+00 | 5.68E-03 | 2.19E-02 | 1.96E-02 | -1.08E+00 |

*9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero.*

## SCENARIO DOCUMENTATION

**Manufacturing energy scenario documentation**

| Scenario parameter | Value |
|---|---|
| Electricity data source and quality | Electricity, medium voltage, residual mix (Reference product: electricity, medium voltage) |
| Electricity CO2e / kWh | 0.44 kg CO2e / kWh |
| District heating data source and quality | Not applicable |
| District heating CO2e / kWh | Not applicable |

**End of life scenario documentation**

| Scenario information | Value |
|---|---|
| Collection process – kg collected separately | 1 |
| Collection process – kg collected with mixed waste | 0 |
| Recovery process – kg for re-use | 0 |
| Recovery process – kg for recycling | 0.9 |
| Recovery process – kg for energy recovery | 0 |
| Disposal (total) – kg for final deposition | 0.1 |
| Scenario assumptions e.g. transportation | Assumed transport distance to waste treatment / disposal is 50km via Transport, freight, lorry >32 metric ton, EURO6 - Europe (average laden vehicle) |

# THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance are filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub is not able to identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

D.V, as an authorized verifier for EPD Hub Limited 09.03.2026

# ANNEX – LIST OF INCLUDED PRODUCTS

| Access Pipe | Mass (kg) |
|---|---|
| 100mm | 4.8 |
| 150mm | 12.8 |
| 200mm | 20 |
| 250mm | 36.5 |
| 50mm | 2.3 |
| 70mm | 2.8 |
| 80mm | 3.5 |

| Adaptor Coupling | Mass (kg) |
|---|---|
| 100mm | 0.2402 |
| 50mm | 0.1672 |

| Bend | Mass (kg) |
|---|---|
| 100mm | 2.1 |
| 150mm | 4.3 |
| 200mm | 8.8 |
| 250mm | 10.3 |
| 300mm | 16.5 |
| 50mm | 0.7 |
| 70mm | 17.7 |
| 80mm | 1.3 |

| Boss Pipe | Mass (kg) |
|---|---|
| 100mm | 2 |
| 150mm | 2 |
| 50mm | 2 |

| Downpipe | Mass (kg) |
|---|---|
| 100mm | 2.7 |
| 150mm | 4 |

| Ductile Bracket | Mass (kg) |
|---|---|
| 100mm | 0.775 |
| 150mm | 0.96 |
| 200mm | 1.72 |
| 50mm | 0.4 |
| 70mm | 0.6 |

| Ductile Iron Coupler | Mass (kg) |
|---|---|
| 100mm | 1.12 |
| 150mm | 1.8 |
| 200mm | 4.16 |
| 50mm | 0.58 |
| 70mm | 0.74 |

| End Cap | Mass (kg) |
|---|---|
| 100mm | 0.8 |
| 150mm | 1.6 |
| 200mm | 3.1 |
| 250mm | 6 |
| 50mm | 0.3 |
| 70mm | 0.4 |
| 80mm | 0.5 |

| Offset | Mass (kg) |
|---|---|
| 100mm | 3.4 |

| Overclamp | Mass (kg) |
|---|---|
| 100mm | 1.14 |
| 150mm | 1.65 |
| 50mm | 0.59 |
| 80mm | 0.75 |

| Pipe | Mass (kg) |
|---|---|
| 100mm | 25.4 |
| 125mm | 35.7 |
| 150mm | 42.5 |
| 200mm | 69.8 |
| 250mm | 100.5 |
| 300mm | 130.7 |
| 50mm | 13 |
| 70mm | 25.4 |
| 80mm | 18.9 |

| Reducer | Mass (kg) |
|---|---|
| 100mm | 0.9 |
| 150mm | 2.4 |
| 200mm | 4.1 |
| 250mm | 5.8 |
| 300mm | 12.4 |
| 70mm | 0.7 |
| 80mm | 0.7 |

| Rubber Adaptor | Mass (kg) |
|---|---|
| 100mm | 0.3 |
| 50mm | 0.12 |

| Stainless Coupler | Mass (kg) |
|---|---|
| 100mm | 0.21 |
| 150mm | 0.344 |
| 200mm | 0.62 |
| 250mm | 0.99 |
| 300mm | 1.13 |
| 50mm | 0.147 |
| 70mm | 0.169 |
| 80mm | 0.167 |

| Tee | Mass (kg) |
|---|---|
| 100mm | 4.4 |
| 150mm | 8.3 |
| 200mm | 17.2 |
| 250mm | 31.5 |
| 300mm | 48.2 |
| 50mm | 1.1 |
| 70mm | 1.7 |
| 80mm | 2.3 |

| Trap | Mass (kg) |
|---|---|
| 100mm | 9.5 |
| 150mm | 21.8 |
| 50mm | 2.9 |