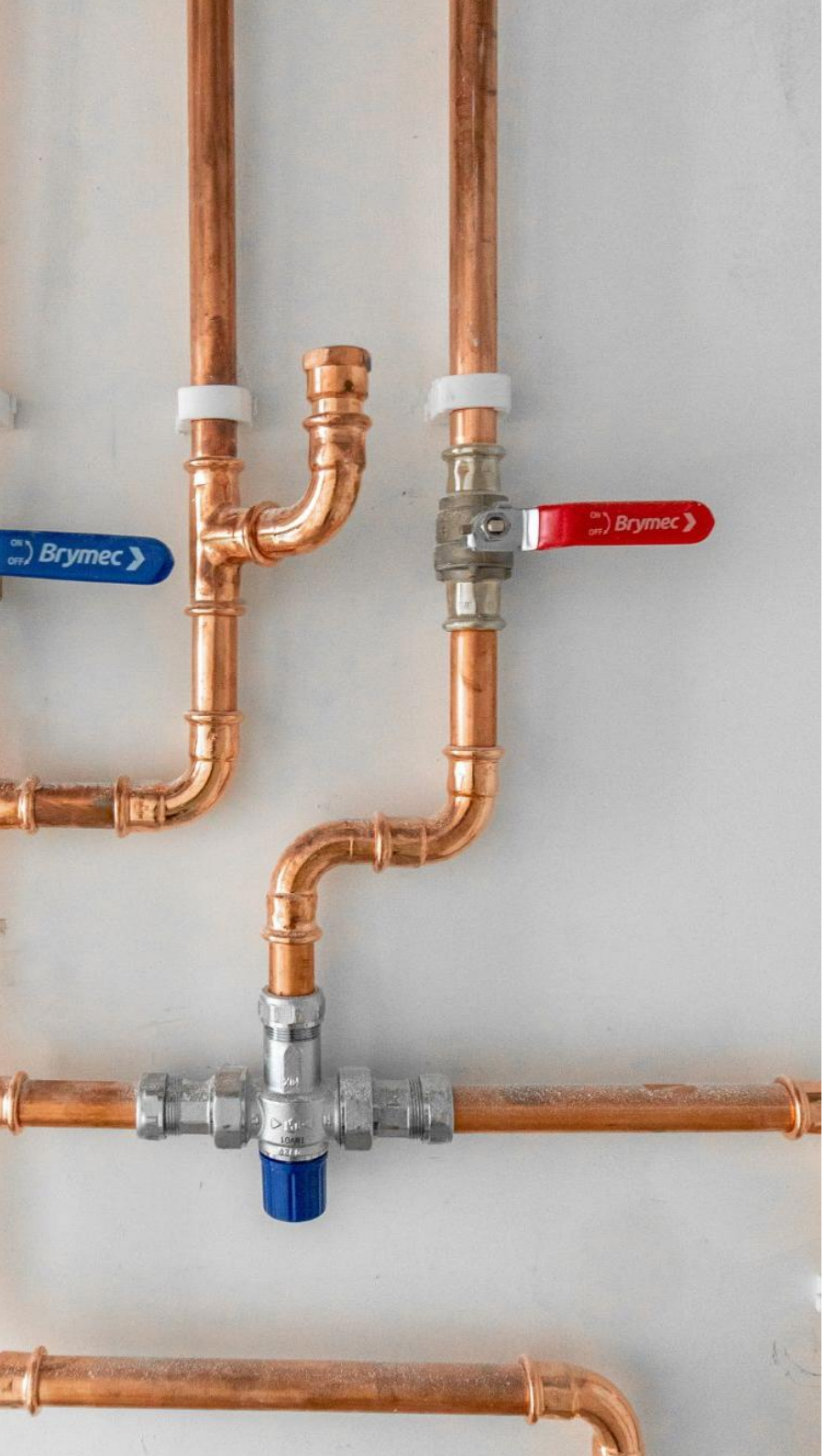


ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Brymec Copper Press Fittings

EPD HUB, EPD number HUB-5665

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.

Brymec

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
Parent EPD number	n/a
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: ☐ 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 Copper Press Fittings
Additional labels	-
Product reference	See Annex for List of Included Products
Place(s) of raw material origin	China
Place of production	China
Place(s) of installation and use	United Kingdom
Period for data	Calendar Year (2023)
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	n/a
A1-A3 Specific data (%)	11.4

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
Mass of packaging	0.002 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1.07E+01
GWP-total, A1-A3 ($kgCO_2e$)	1.08E+01
Secondary material, inputs (%)	25.8
Secondary material, outputs (%)	90.2
Total energy use, A1-A3 (kWh)	50.3
Net freshwater use, A1-A3 (m^3)	0.1

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

Our Copper press fittings are for use with conformant copper tube to EN 1057 type TX, providing a durable and secure leak-proof joint for the following applications; potable water, hot water heating/cooling circuit and drainage. Our copper press range has been carefully designed and selected to meet the highest quality standards. Products undergo stringent testing in compliance with our ISO 9001:2015 quality management system.

The results of this EPD are representative for 1kg of Brymec Copper Press Fittings. 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	99	China
Minerals	-	-
Fossil materials	1	China
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	0.02

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.

Raw materials for Brymec Copper Press fittings are transported to the production site by truck or lorry depending on the volume of materials needed.

The manufacturing process involves hydroforming copper tube and machining of threaded components depending on the type of fitting being produced. Water and lubricating oil are used in the manufacturing process for cooling and lubrication and the waste of these materials has been considered in the LCA.

The finished product is fitted with the EPDM O-ring and quality checked before being packaged in plastic bags and cardboard boxes and stacked on wooden pallets for transportation via lorry and container ship to our distribution centre. An Ecoinvent country-specific average electricity dataset (residual mix) has been used to model direct supply of electricity. From here these are shipped in similar packaging and distributed by van to our customers.

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 consider the use phase modules.

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 100km via >32 tonne lorry for recycling / waste treatment. (C2)

Based on typical scenarios we have assumed waste copper as 90% recycled and 10% incinerated[1].

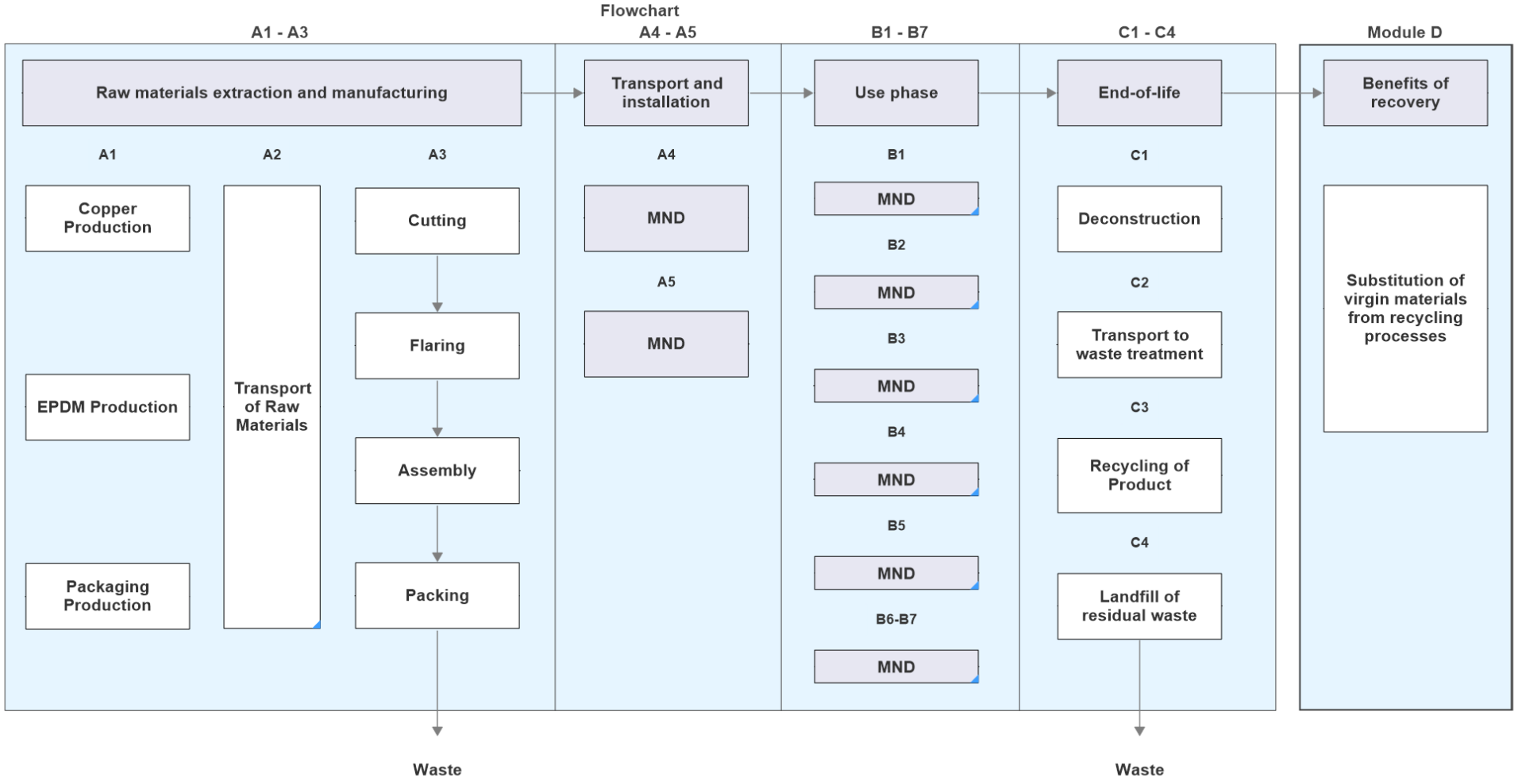
The EPDM O-ring is assumed to be 20% recycled and 80% incinerated[2].

Module D accounts for the benefits and loads beyond the system boundary. The benefits from the provision of recyclates (copper) 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.

[1] See: https://circulareconomy.europa.eu/platform/sites/default/files/euric_metal_recycling_factsheet.pdf

[2] See: https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/rubber-and-leather-material-specific-data

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.

All significant inputs and outputs of the unit processes, for which data is available for, are included in the calculation.

We have not included the printing of labels in the LCA as the impacts would be minimal. Similarly, packaging used for transportation of the raw materials has also been excluded as this would have minimal impact as the items are shipped in bulk. We have also excluded electricity and gas used in our building where it is not directly related to the storage/manufacturing of our products such as heating in reception area.

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	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

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	n/a
Variation in GWP-fossil for A1-A3, %	n/a

This EPD is product and factory specific.

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 v3.10.1/3.11 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

End of life scenarios for product have been taken from RICS v2, Section 5.6.1 on End-of-Life Scenarios.

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_2e	9.51E+00	2.57E-01	9.87E-01	1.08E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.30E-03	0.00E+00	7.89E-02	3.50E-03	-5.01E-01
GWP – fossil	kg CO_2e	9.49E+00	2.57E-01	9.90E-01	1.07E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.30E-03	0.00E+00	7.68E-02	2.25E-03	-5.00E-01
GWP – biogenic	kg CO_2e	0.00E+00	0.00E+00	-3.20E-03	-3.20E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	2.03E-03	1.24E-03	1.79E-05
GWP – LULUC	kg CO_2e	1.44E-02	1.36E-04	9.02E-05	1.46E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.62E-06	0.00E+00	2.54E-05	1.09E-06	-5.59E-04
Ozone depletion pot.	kg $CFC\text{-}_{11}e$	9.68E-08	3.70E-09	4.96E-08	1.50E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.59E-11	0.00E+00	2.85E-10	4.77E-11	-4.92E-09
Acidification potential	mol H^+e	2.97E-01	6.72E-03	2.12E-03	3.06E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.83E-06	0.00E+00	2.46E-04	1.30E-05	-9.40E-03
EP-freshwater[2)]	kg Pe	1.27E-01	9.56E-06	1.10E-04	1.27E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.34E-07	0.00E+00	1.31E-05	2.47E-07	-6.00E-03
EP-marine	kg Ne	5.51E-02	1.68E-03	1.29E-03	5.80E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.05E-06	0.00E+00	5.64E-05	5.03E-06	-2.60E-03
EP-terrestrial	mol Ne	7.90E-01	1.87E-02	5.80E-03	8.15E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.21E-05	0.00E+00	6.31E-04	5.50E-05	-3.73E-02
POCP ("smog")[3)]	kg NMVOCe	1.64E-01	5.11E-03	1.97E-03	1.71E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.38E-06	0.00E+00	1.86E-04	1.87E-05	-7.66E-03
ADP-minerals & metals[4)]	kg Sbe	3.79E-03	3.09E-07	1.49E-06	3.79E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.20E-08	0.00E+00	1.42E-06	6.55E-09	-1.11E-04
ADP-fossil resources	MJ	1.16E+02	3.22E+00	2.25E+01	1.41E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.53E-02	0.00E+00	2.77E-01	3.75E-02	-6.34E+00
Water use[5)]	m^3e depr.	4.72E+00	9.98E-03	1.50E-01	4.88E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.49E-04	0.00E+00	7.85E-03	2.91E-04	-1.85E-01

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	1.76E-06	9.87E-09	1.03E-08	1.78E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.99E-11	0.00E+00	3.28E-09	3.71E-10	-8.67E-08
Ionizing radiation[6]	kBq U235e	8.91E-01	1.64E-03	6.20E-01	1.51E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.24E-03	0.00E+00	2.30E-03	4.44E-05	-2.26E-02
Ecotoxicity (freshwater)	CTUe	1.55E+03	2.69E-01	2.60E+00	1.55E+03	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.56E-03	0.00E+00	2.51E-01	5.05E-03	-7.24E+01
Human toxicity, cancer	CTUh	1.98E-08	5.30E-11	1.20E-10	2.00E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.60E-13	0.00E+00	1.88E-11	1.05E-12	-2.09E-10
Human tox. non-cancer	CTUh	1.61E-06	9.72E-10	5.44E-09	1.62E-06	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.20E-11	0.00E+00	1.23E-09	1.72E-11	-1.42E-08
SQP[7]	-	1.75E+02	6.83E-01	1.52E+00	1.77E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.14E-02	0.00E+00	5.27E-01	4.36E-02	-7.02E+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	4.01E+01	2.74E-02	3.29E-01	4.05E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.18E-02	0.00E+00	5.05E-02	7.23E-04	-1.74E+00
Renew. PER as material	MJ	0.00E+00	0.00E+00	2.87E-02	2.87E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-1.78E-02	-1.09E-02	0.00E+00
Total use of renew. PER	MJ	4.01E+01	2.74E-02	3.57E-01	4.05E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.18E-02	0.00E+00	3.26E-02	-1.02E-02	-1.74E+00
Non-re. PER as energy	MJ	1.15E+02	3.22E+00	2.23E+01	1.41E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.53E-02	0.00E+00	-3.97E-01	3.75E-02	-6.60E+00
Non-re. PER as material	MJ	5.95E-01	0.00E+00	3.56E-03	5.99E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-5.96E-01	-2.61E-03	7.67E-03
Total use of non-re. PER	MJ	1.16E+02	3.22E+00	2.23E+01	1.41E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.53E-02	0.00E+00	-9.93E-01	3.48E-02	-6.59E+00
Secondary materials	kg	2.58E-01	1.51E-03	1.83E-03	2.61E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.29E-06	0.00E+00	3.49E-04	4.14E-05	6.98E-02
Renew. secondary fuels	MJ	5.30E-03	5.37E-06	7.64E-04	6.07E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.53E-08	0.00E+00	1.55E-05	8.68E-07	-4.59E-04
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	1.33E-01	2.56E-04	-3.75E-02	9.60E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.30E-06	0.00E+00	1.97E-04	2.46E-05	-4.59E-03

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	2.17E+00	4.43E-03	2.32E-02	2.20E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.41E-05	0.00E+00	3.00E-03	1.17E-04	-7.45E-02
Non-hazardous waste	kg	6.87E+01	6.38E-02	4.15E+01	1.10E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.21E-03	0.00E+00	8.43E-02	2.75E-01	-1.08E+00
Radioactive waste	kg	2.25E-04	4.01E-07	1.30E-04	3.55E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.70E-07	0.00E+00	5.89E-07	1.10E-08	-5.50E-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	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	8.84E-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	1.78E-02	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	6.15E-01	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	2.59E-01	0.00E+00	0.00E+00
Exported energy – Heat	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	3.56E-01	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	9.51E+00	2.56E-01	9.90E-01	1.08E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.30E-03	0.00E+00	7.68E-02	2.24E-03	-4.97E-01
Ozone depletion Pot.	kg $CFC_{-11}e$	8.12E-08	2.94E-09	3.93E-08	1.24E-07	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.40E-11	0.00E+00	2.36E-10	3.82E-11	-4.11E-09
Acidification	kg SO_2e	2.28E-01	5.36E-03	1.69E-03	2.35E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.83E-06	0.00E+00	1.97E-04	9.55E-06	-6.54E-03
Eutrophication	kg PO_4^3e	4.73E-02	6.00E-04	7.80E-04	4.87E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.46E-07	0.00E+00	2.94E-05	3.67E-06	-2.67E-03
POCP (“smog”)	kg C_2H_4e	1.05E-02	2.69E-04	1.28E-04	1.09E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.65E-07	0.00E+00	1.18E-05	1.05E-06	-3.33E-04
ADP-elements	kg Sbe	3.78E-03	3.04E-07	1.44E-06	3.79E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.19E-08	0.00E+00	1.41E-06	6.23E-09	-1.10E-04
ADP-fossil	MJ	1.01E+02	3.19E+00	1.48E+01	1.19E+02	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.88E-02	0.00E+00	2.37E-01	3.67E-02	-5.99E+00

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	9.51E+00	2.57E-01	9.90E-01	1.08E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.30E-03	0.00E+00	7.69E-02	2.26E-03	-5.01E-01

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	0.1
Disposal (total) – kg for final deposition	0
Scenario assumptions e.g. transportation	Assumed transport distance to waste treatment / disposal is 100km 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

Couplers		
Code	Size	Mass (kg)
27940	15mm	0.032
27941	22mm	0.050
27942	28mm	0.066
27943	35mm	0.097
27944	42mm	0.136
27945	54mm	0.204
27946	67mm	0.550
27947	76mm	0.750
27949	108mm	1.300
Reducing Couplings		
Code	Size	Mass (kg)
27900	22 x 15mm	0.048
27901	28 x 15mm	0.060
27902	28 x 22mm	0.068
27903	35 x 22mm	0.090
27904	35 x 28mm	0.098
27905	42 x 22mm	0.120
27906	42 x 28mm	0.135
27907	42 x 35mm	0.140
27908	54 x 28mm	0.180
27909	54 x 35mm	0.190
27910	54 x 42mm	0.200
Fitting Reducers		
Code	Size	Mass (kg)
27915	22 x 15mm	0.044
27916	28 x 15mm	0.057
27917	28 x 22mm	0.062
27918	35 x 22mm	0.082
27919	35 x 28mm	0.088
27920	42 x 22mm	0.109
27921	42 x 28mm	0.116
27922	42 x 35mm	0.126
27932	54 x 28mm	0.160
27923	54 x 32mm	0.169
27924	54 x 42mm	0.185
28231	67 x 28mm	0.350
28232	67 x 35mm	0.360
28233	67 x 42mm	0.370
27925	67 x 54mm	0.380
28234	76 x 35mm	0.500
27926	76 x 54mm	0.600
28236	76 x 67mm	0.650
28237	108 x 42mm	0.850
27929	108 x 54mm	0.860
28238	108 x 67mm	0.960
27930	108 x 76mm	1.050
Slip Couplers		
Code	Size	Mass (kg)
27950	15mm	0.056
27951	22mm	0.085
27952	28mm	0.115
27953	35mm	0.162
27954	42mm	0.230
27955	54mm	0.335

27956	67mm	0.800
27957	76mm	1.200
Multiport Couplers		
Code	Size	Mass (kg)
27911	67mm x 1/2"	0.650
27912	76mm x 1/2"	0.770
27913	108mm x 3/4"	1.760
90° FxF Elbows		
Code	Size	Mass (kg)
27810	15mm	0.050
27811	22mm	0.079
27812	28mm	0.122
27813	35mm	0.185
27814	42mm	0.260
27815	54mm	0.400
27816	67mm	0.950
27817	76mm	1.400
27819	108mm	2.600
45° FxF Elbows		
Code	Size	Mass (kg)
27830	15mm	0.045
27831	22mm	0.065
27832	28mm	0.100
27833	35mm	0.135
27834	42mm	0.195
27835	54mm	0.295
27836	67mm	0.730
27837	76mm	1.060
27839	108mm	1.920
90° MxF Elbows		

Code	Size	Mass (kg)
27800	15mm	0.050
27801	22mm	0.080
27802	28mm	0.122
27803	35mm	0.185
27804	42mm	0.260
27805	54mm	0.400
27806	67mm	0.950
27807	76mm	1.400
27809	108mm	2.600
45° MxF Elbows		
Code	Size	Mass (kg)
27820	15mm	0.045
27821	22mm	0.065
27822	28mm	0.100
27823	35mm	0.135
27824	42mm	0.195
27825	54mm	0.295
27826	67mm	0.730
27827	76mm	1.060
27829	108mm	1.920
Reducing Tees		
Code	Size	Mass (kg)
27860	15 x 22 x 15mm	0.105
27861	22 x 15 x 15mm	0.115
27862	22 x 15 x 22mm	0.120
27863	22 x 22 x 15mm	0.125
27865	28 x 15 x 22mm	0.170
27866	28 x 15 x 28mm	0.160
27867	28 x 22 x 22mm	0.170

27868	28 x 22 x 28mm	0.170
27869	28 x 28 x 15mm	0.170
27870	28 x 28 x 22mm	0.170
27872	35 x 15 x 35mm	0.190
27874	35 x 22 x 28mm	0.200
27875	35 x 22 x 35mm	0.200
27876	35 x 28 x 28mm	0.200
27877	35 x 28 x 35mm	0.209
27880	42 x 15 x 42mm	0.270
27881	42 x 22 x 42mm	0.270
27882	42 x 28 x 42mm	0.270
27884	42 x 35 x 42mm	0.290
27896	42 x 42 x 35mm	0.290
27885	54 x 22 x 54mm	0.400
27886	54 x 28 x 54mm	0.400
27887	54 x 35 x 54mm	0.406
27888	54 x 42 x 54mm	0.425
28255	67 x 28 x 67mm	0.700
27889	67 x 54 x 67mm	0.880
28260	76 x 35 x 76mm	1.000
27890	76 x 54 x 76mm	1.150
27893	108 x 54 x 108mm	1.850
Equal Tees		
Code	Size	Mass (kg)
27850	15mm	0.082
27851	22mm	0.122
27852	28mm	0.180
27853	35mm	0.230
27854	42mm	0.310
27855	54mm	0.470
27856	67mm	1.040
27857	76mm	1.500
27859	108mm	2.650
Manifold Tees		
Code	Size	Mass (kg)
27897	54 x 22 x 54mm	0.500
27898	54 x 28 x 54mm	0.490
Female Branch Tees		
Code	Size	Mass (kg)
28101	15 x 1/2" x 15mm	0.095
28102	22 x 1/2" x 22mm	0.120
28104	28 x 1/2" x 28mm	0.185
28106	35 x 1/2" x 35mm	0.210
28108	42 x 1/2" x 42mm	0.270
28110	54 x 1/2" x 54mm	0.400
Female Iron Adaptors		
Code	Size	Mass (kg)
28151	15mm x 1/2"	0.050
28153	22mm x 1/2"	0.055
28154	22mm x 3/4"	0.062
28157	28mm x 1"	0.155
28160	35mm x 1 1/4"	0.200
28163	42mm x 1 1/2"	0.320
28165	54mm x 2"	0.450
28166	67mm x 2 1/2"	0.750
28169	76mm x 3"	1.000
Male Iron Adaptors		
Code	Size	Mass (kg)
28115	15mm x 3/8"	0.042
28116	15mm x 1/2"	0.050

28117	15mm x 3/4"	0.055
28118	22mm x 1/2"	0.055
28119	22mm x 3/4"	0.062
28120	22mm x 1"	0.090
28121	28mm x 3/4"	0.090
28122	28mm x 1"	0.109
28125	35mm x 1 1/4"	0.187
28128	42mm x 1 1/2"	0.250
28130	54mm x 2"	0.400
28131	67mm x 2 1/2"	0.750
28133	76mm x 3"	1.000
28134	108mm x 4"	1.750
Male Iron Elbows		
Code	Size	Mass (kg)
28081	15mm x 1/2"	0.085
Female Iron Elbows		
Code	Size	Mass (kg)
28071	15mm x 1/2"	0.085
28074	22mm x 3/4"	0.135
Plug-In Male Adaptors		
Code	Size	Mass (kg)
28171	15mm x 1/2"	0.050
28173	22mm x 3/4"	0.062
Plug-In Female Adaptors		
Code	Size	Mass (kg)
28141	15mm x 1/2"	0.050
28142	22mm x 1/2"	0.055
28143	22mm x 3/4"	0.062
28145	28mm x 1"	0.110
28149	35mm x 1"	0.130

28148	54mm x 2"	0.300
End Caps		
Code	Size	Mass (kg)
27960	15mm	0.018
27961	22mm	0.028
27962	28mm	0.045
27963	35mm	0.067
27964	42mm	0.085
27965	54mm	0.131
27966	67mm	0.335
27967	76mm	0.470
Female Backplate Elbow		
Code	Size	Mass (kg)
28225	15mm x 1/2"	0.132
Crossovers		
Code	Size	Mass (kg)
27840	15mm	0.105
27841	22mm	0.180
27845	15mm Partial	0.072
27846	22mm Partial	0.130
Male Unions		
Code	Size	Mass (kg)
28200	15mm x 1/2"	0.140
28203	22mm x 3/4"	0.220
28206	28mm x 1"	0.400
28207	35mm x 1 1/4"	0.500
28208	42mm x 1 1/2"	0.750
28209	54mm x 2"	1.300
Female Unions		

Code	Size	Mass (kg)
28190	15mm x 1/2"	0.140
28192	22mm x 3/4"	0.220
28195	28mm x 1"	0.400
28196	35mm x 1 1/4"	0.500
28197	42mm x 1 1/2"	0.750
28198	54mm x 2"	1.300
Crimping Flanges		
Code	Size	Mass (kg)
28241	42mm	1.750
28242	54mm	2.490
28243	67mm	2.843
28244	76mm	3.460
28246	108mm	5.386