ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Brymec VOX PP Pushfit Acoustic Drainage System

EPD HUB, HUB-5661

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: ☐ 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 VOX PP Pushfit Acoustic Drainage System
Additional labels	Vox Acoustic Drainage
Product reference	See Annex for List of Included Products
Place(s) of raw material origin	Italy
Place of production	Italy
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 (%)	<10%
A1-A3 Specific data (%)	10.7

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
Mass of packaging	0.417 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	2.31
GWP-total, A1-A3 ($kgCO_2e$)	2.33
Secondary material, inputs (%)	1.16
Secondary material, outputs (%)	100
Total energy use, A1-A3 (kWh)	11.2
Net freshwater use, A1-A3 (m^3)	0.03

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Brymec Ltd. is a family run business, manufacturing and delivering M&E products and system solutions of consistently excellent quality. Established in 1974, Brymec delivers an exceptional customer experience, providing confidence and peace of mind with its ground-breaking new supply chain model where Brymec products are delivered direct to site from a central distribution centre.

PRODUCT DESCRIPTION

This EPD is representative of Brymec Vox Acoustic Range. VOX is suited for use above ground in commercial, residential and industrial applications, installed within the building structure as a gravity drainage system for the disposal of foul water, wastewater and rainwater.

VOX is purpose designed for acoustic optimisation and is manufactured from high grade Polypropylene Copolymer with mineral fillers which ensure acoustic and strength benefits.

The high-performance VOX Pipes are manufactured using the latest multilayer pipe technology to construct 3 co-extruded layers. This provides optimum physical performance and includes a special white smooth-flow internal surface for excellent flow characteristics and easy inspection.

The system is connected with unique noise optimised Double Lip Seal ring seal joint fittings. Acoustic drainage systems offer huge benefits in acoustic performance due to the reduction of noise from flow of waste inside the system. This reduction in airborne and structure borne noise results in increased comfort and occupier enjoyment which greatly enhances the quality and useability of noise sensitive environments.

The inherent strength and durability of the material means that the system will not deform under load, and with a low coefficient of expansion and the flexible ring seal jointing method there is no need for special expansion jointing. Due to the superior acoustic performance and ease of installation and maintenance, VOX acoustic drainage is ideal for use in projects such as hotels, multi-occupancy residential, high-quality residences, educational and scientific buildings.

The results of this EPD are representative for 1kg of Brymec VOX Acoustic Range. 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	-	-
Minerals	46%	Italy
Fossil materials	54%	Italy
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	0.15

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 PP Pushfit Acoustic Drainage System manufactured from Polypropylene copolymer and mineral filler. The products are sourced from a single manufacturing facility in Italy where the raw material is received, extruded into the desired shapes, finished and packed for shipping to the UK. (A1/A2).

Transportation to the Brymec warehouse in the UK is via >32 tonne lorry (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 excluded from the scope of this study.

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)

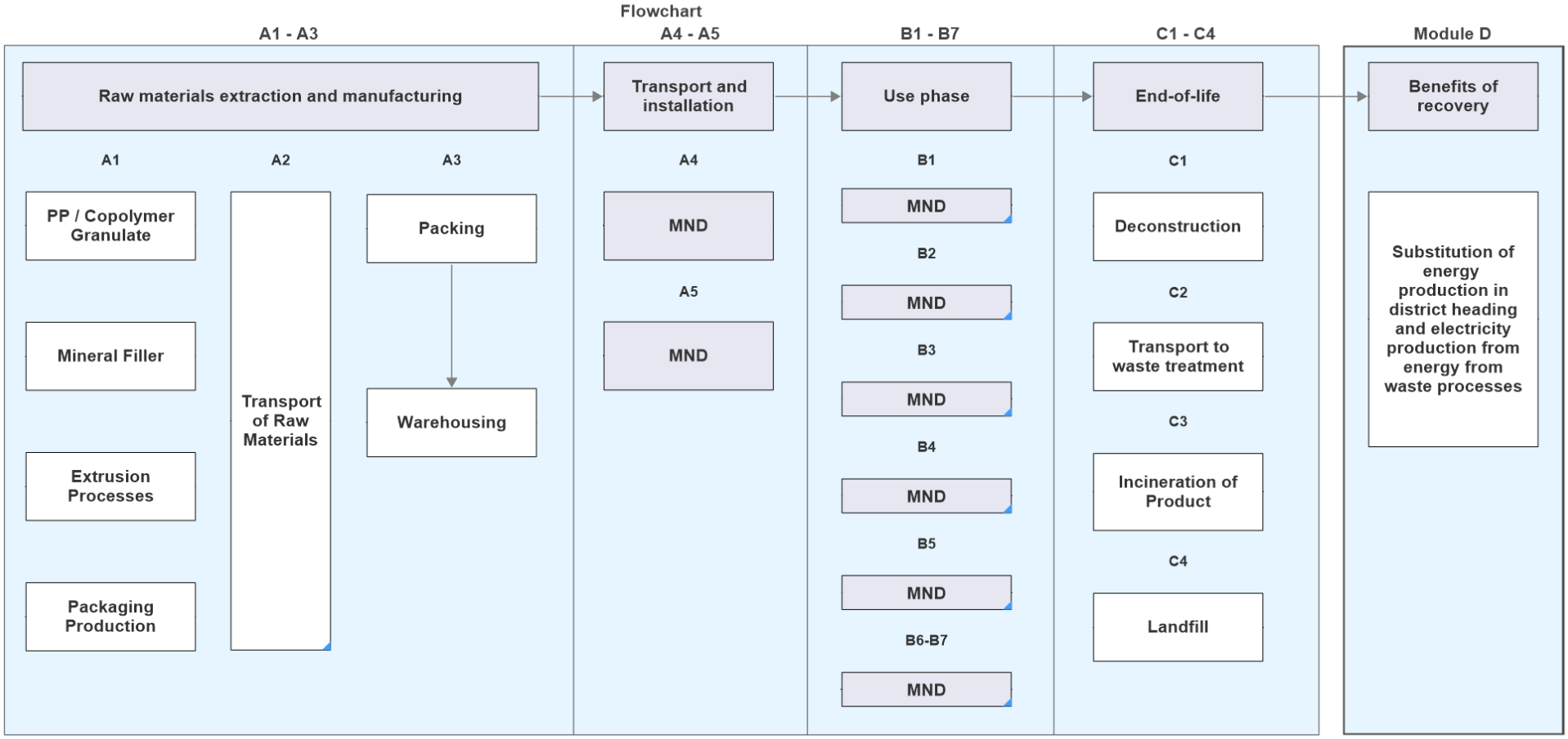
At the end of its life the product is assumed to be collected separately. Manual dismantling of pipework is anticipated therefore no energy is required. (C1).

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

An end-of-life scenario for plastic products has been assumed, based on RICS v2. 100% of the product is assumed to be incinerated (C3).

Module D accounts for the benefits and loads beyond the system boundary. The benefits from plastic incineration (heat and electricity generation) have been considered. The negative figure / benefit represents the avoided impact from the energy-from-waste process.

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	No allocation
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, %	<10%

The results in this EPD are for 1kg of VOX Acoustic Range. All products in this system are comprised of the same materials, PP copolymer and mineral filler in a highly similar ratio <10% variation. 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 +/- 10% difference for any one product within the group.

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	1.69E+00	2.23E-01	4.18E-01	2.33E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.03E-02	2.38E+00	0.00E+00	-1.07E+00
GWP – fossil	kg CO_2e	1.69E+00	2.23E-01	4.00E-01	2.31E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.03E-02	2.38E+00	0.00E+00	-1.07E+00
GWP – biogenic	kg CO_2e	1.30E-03	4.70E-05	1.79E-06	1.35E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.26E-06	-1.41E-04	0.00E+00	0.00E+00
GWP – LULUC	kg CO_2e	1.35E-03	8.75E-05	1.74E-02	1.89E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.03E-06	1.84E-05	0.00E+00	-6.78E-05
Ozone depletion pot.	kg CFC_{-11}e	6.75E-08	4.64E-09	1.21E-08	8.42E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.16E-10	8.78E-10	0.00E+00	-2.38E-08
Acidification potential	mol H^+e	6.16E-03	5.48E-04	1.83E-03	8.53E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.44E-05	5.42E-04	0.00E+00	-1.29E-03
EP-freshwater[2)]	kg Pe	4.43E-04	1.57E-05	2.23E-04	6.82E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	7.23E-07	7.42E-06	0.00E+00	-1.87E-05
EP-marine	kg Ne	1.17E-03	1.49E-04	9.68E-04	2.28E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	6.40E-06	3.09E-04	0.00E+00	-3.81E-04
EP-terrestrial	mol Ne	1.21E-02	1.61E-03	6.32E-03	2.00E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	6.93E-05	2.63E-03	0.00E+00	-4.10E-03
POCP ("smog")[3)]	kg NMVOCe	8.44E-03	9.44E-04	1.60E-03	1.10E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.24E-05	6.60E-04	0.00E+00	-2.81E-03
ADP-minerals & metals[4)]	kg Sbe	1.60E-05	6.37E-07	1.62E-06	1.83E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.96E-08	1.71E-07	0.00E+00	-1.11E-06
ADP-fossil resources	MJ	4.78E+01	3.34E+00	6.13E+00	5.73E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.55E-01	4.63E-01	0.00E+00	-1.70E+01
Water use[5)]	m^3e depr.	7.77E-01	1.72E-02	2.40E-01	1.03E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	7.95E-04	1.57E-01	0.00E+00	-7.57E-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	4.76E-08	2.18E-08	1.68E-08	8.62E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.01E-09	2.80E-09	0.00E+00	-6.78E-09
Ionizing radiation[6)]	kBq U235e	2.08E-01	4.05E-03	5.79E-02	2.70E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.87E-04	8.36E-04	0.00E+00	-2.22E-03
Ecotoxicity (freshwater)	CTUe	4.26E+00	3.97E-01	3.66E+00	8.32E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.83E-02	4.68E+00	0.00E+00	-7.93E-01
Human toxicity, cancer	CTUh	4.30E-10	3.73E-11	1.21E-10	5.89E-10	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.72E-12	2.03E-10	0.00E+00	-8.12E-11
Human tox. non-cancer	CTUh	1.56E-08	2.15E-09	2.94E-09	2.07E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.00E-10	7.12E-09	0.00E+00	-2.01E-09
SQP[7)]	-	8.78E+00	3.35E+00	1.61E+01	2.83E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.56E-01	1.31E-01	0.00E+00	-3.75E-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[8)]	MJ	2.75E+00	5.50E-02	-2.15E+00	6.53E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.53E-03	1.90E-02	0.00E+00	-3.51E-02
Renew. PER as material	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
Total use of renew. PER	MJ	2.75E+00	5.50E-02	-2.15E+00	6.53E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.53E-03	1.90E-02	0.00E+00	-3.51E-02
Non-re. PER as energy	MJ	3.01E+01	3.34E+00	6.23E+00	3.96E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.55E-01	-3.59E+01	0.00E+00	-1.70E+01
Non-re. PER as material	MJ	1.78E+01	0.00E+00	0.00E+00	1.78E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	0.00E+00	-1.78E+01	0.00E+00	0.00E+00
Total use of non-re. PER	MJ	4.78E+01	3.34E+00	6.23E+00	5.74E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.55E-01	-5.37E+01	0.00E+00	-1.70E+01
Secondary materials	kg	1.16E-02	1.48E-03	4.11E-01	4.24E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	6.72E-05	4.22E-04	0.00E+00	-2.02E-03
Renew. secondary fuels	MJ	1.33E-02	1.82E-05	3.87E-02	5.20E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	8.47E-07	1.38E-05	0.00E+00	-4.19E-06
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	2.03E-02	4.95E-04	5.75E-03	2.65E-02	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.29E-05	2.69E-03	0.00E+00	-1.84E-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	7.68E-02	4.92E-03	2.31E-02	1.05E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.25E-04	4.10E-02	0.00E+00	-9.41E-03
Non-hazardous waste	kg	1.16E+01	9.79E-02	5.98E-01	1.23E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.50E-03	1.11E+00	0.00E+00	-1.42E-01
Radioactive waste	kg	5.32E-05	1.00E-06	1.41E-05	6.83E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.63E-08	2.13E-07	0.00E+00	-5.07E-07

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	0.00E+00	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	1.00E+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 – 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	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	1.67E+00	2.22E-01	4.25E-01	2.32E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.03E-02	2.38E+00	0.00E+00	-1.06E+00
Ozone depletion Pot.	kg $CFC_{-11}e$	5.40E-08	3.69E-09	9.89E-09	6.76E-08	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.72E-10	7.81E-10	0.00E+00	-1.90E-08
Acidification	kg SO_2e	5.10E-03	4.33E-04	1.30E-03	6.84E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.94E-05	3.85E-04	0.00E+00	-1.01E-03
Eutrophication	kg PO_4^3e	1.72E-03	1.08E-04	7.74E-04	2.60E-03	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	4.83E-06	1.37E-04	0.00E+00	-1.93E-04
POCP (“smog”)	kg C_2H_4e	5.52E-04	4.36E-05	1.20E-04	7.15E-04	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.97E-06	2.54E-05	0.00E+00	-1.26E-04
ADP-elements	kg Sbe	1.59E-05	6.21E-07	1.64E-06	1.81E-05	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	2.89E-08	1.19E-07	0.00E+00	-1.06E-06
ADP-fossil	MJ	4.42E+01	3.28E+00	5.16E+00	5.26E+01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.52E-01	4.50E-01	0.00E+00	-1.69E+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	1.69E+00	2.23E-01	4.18E-01	2.33E+00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00E+00	1.03E-02	2.38E+00	0.00E+00	-1.07E+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
Recovery process – kg for energy recovery	1
Disposal (total) – kg for final deposition	0
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

Product Description	Mass (kg)
32mm x 3m VOX Acoustic dB12 Single Socket Waste Pipe	0.583
50mm x 3m VOX Acoustic dB12 Single Socket Waste Pipe	0.977
75mm x 3m VOX Acoustic dB12 Single Socket Waste Pipe	1.944
40mm x 3m VOX Acoustic dB12 Single Socket Waste Pipe	4.273
160mm x 3m VOX Acoustic dB12 Single Socket Waste Pipe	8.024
200mm x 3m VOX Acoustic dB12 Single Socket Waste Pipe	12.723
32 x 46mm 90 Bend Adaptor c/w cap VOX Acoustic dB12 Waste Fitting	0.028
40 x 46mm 90 Bend Adaptor c/w cap VOX Acoustic dB12 Waste Fitting	0.033
40 x 50mm 90 Bend Adaptor c/w cap VOX Acoustic dB12 Waste Fitting	0.034
50 x 50mm 90 Bend Adaptor c/w cap VOX Acoustic dB12 Waste Fitting	0.04
40 x 46mm 90 Extended Bend Adaptor c/w cap VOX Acoustic dB12 Waste Fitting	0.051
40 x 50mm 90 Extended Bend Adaptor c/w cap VOX Acoustic dB12 Waste Fitting	0.047
40mm End Cap VOX Acoustic dB12 Waste Fitting	0.015
50mm End Cap VOX Acoustic dB12 Waste Fitting	0.053
75mm End Cap VOX Acoustic dB12 Waste Fitting	0.085
110mm End Cap VOX Acoustic dB12 Waste Fitting	0.163
160mm End Cap VOX Acoustic dB12 Waste Fitting	0.179
32mm 15 MxF Bend VOX Acoustic dB12 Waste Fitting	0.045
40mm 15 MxF Bend VOX Acoustic dB12 Waste Fitting	0.058
50mm 15 MxF Bend VOX Acoustic dB12 Waste Fitting	0.078
75mm 15 MxF Bend VOX Acoustic dB12 Waste Fitting	0.151
110mm 15 MxF Bend VOX Acoustic dB12 Waste Fitting	0.352
32mm 30 MxF Bend VOX Acoustic dB12 Waste Fitting	0.04
40mm 30 MxF Bend VOX Acoustic dB12 Waste Fitting	0.067
50mm 30 MxF Bend VOX Acoustic dB12 Waste Fitting	0.108
75mm 30° MxF Bend VOX Acoustic dB12 Waste Fitting	0.161
110mm 30 MxF Bend VOX Acoustic dB12 Waste Fitting	0.373
32mm 45 MxF Bend VOX Acoustic dB12 Waste Fitting	0.042
40mm 45 MxF Bend VOX Acoustic dB12 Waste Fitting	0.063
50mm 45 MxF Bend VOX Acoustic dB12 Waste Fitting	0.079
75mm 45 MxF Bend VOX Acoustic dB12 Waste Fitting	0.179
110mm 45 MxF Bend VOX Acoustic dB12 Waste Fitting	0.416
160mm 45 MxF Bend VOX Acoustic dB12 Waste Fitting	0.95
200mm 45 MxF Bend VOX Acoustic dB12 Waste Fitting	1.656
32mm 87 MxF Bend VOX Acoustic dB12 Waste Fitting	0.049
40mm 87 MxF Bend VOX Acoustic dB12 Waste Fitting	0.07
50mm 87 MxF Bend VOX Acoustic dB12 Waste Fitting	0.097
75mm 87 MxF Bend VOX Acoustic dB12 Waste Fitting	0.2
110mm 87 MxF Bend VOX Acoustic dB12 Waste Fitting	0.482
160mm 87 MxF Bend VOX Acoustic dB12 Waste Fitting	1.199
200mm 87 MxF Bend VOX Acoustic dB12 Waste Fitting	2.46
32mm 45 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.054
40mm 45 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.117
50mm 45 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.14
75mm 45 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.34
110mm 45 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.797
160mm 45 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	1.994
200mm 45 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	3.437
110mm 67 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.823
40mm 87 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.102
50mm 87 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.137
75mm 87 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.306
110mm 87 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.703

160mm 87 Single Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	3.024
50 x 40mm 45 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.135
75 x 50mm 45 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.248
110 x 50mm 45 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.513
110 x 75mm 45 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.512
160 x 110mm 45 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	1.469
200 x 160mm 45 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	3.338
50 x 40mm 87 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.141
75 x 50mm 87 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.225
110 x 50mm 87 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.529
110 x 75mm 87 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.540
160 x 110mm 87 Reducing Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	1.476
110mm 87 Double Branch - 3 Socket VOX Acoustic dB12 Waste Fitting	1.023
110mm 87 Swept Branch - 2 Socket VOX Acoustic dB12 Waste Fitting	0.706
40 x 32mm Eccentric Reducer VOX Acoustic dB12 Waste Fitting	0.033
50 x 32mm Eccentric Reducer VOX Acoustic dB12 Waste Fitting	0.033
50 x 40mm Eccentric Reducer VOX Acoustic dB12 Waste Fitting	0.065
75 x 50mm Eccentric Reducer VOX Acoustic dB12 Waste Fitting	0.118
110 x 50mm Eccentric Reducer VOX Acoustic dB12 Waste Fitting	0.224
110 x 75mm Eccentric Reducer VOX Acoustic dB12 Waste Fitting	0.241
160 x 110mm Eccentric Reducer VOX Acoustic dB12 Waste Fitting	0.819
32mm Double Socket Coupler VOX Acoustic dB12 Waste Fitting	0.055

40mm Double Socket Coupler VOX Acoustic dB12 Waste Fitting	0.072
50mm Double Socket Coupler VOX Acoustic dB12 Waste Fitting	0.075
75mm Double Socket Coupler VOX Acoustic dB12 Waste Fitting	0.172
110mm Double Socket Coupler VOX Acoustic dB12 Waste Fitting	0.361
160mm Double Socket Coupler VOX Acoustic dB12 Waste Fitting	0.625
40mm Slip Coupler VOX Acoustic dB12 Waste Fitting	0.071
50mm Slip Coupler VOX Acoustic dB12 Waste Fitting	0.079
75mm Slip Coupler VOX Acoustic dB12 Waste Fitting	0.101
110mm Slip Coupler VOX Acoustic dB12 Waste Fitting	0.397
160mm Slip Coupler VOX Acoustic dB12 Waste Fitting	0.691
200mm Slip Coupler VOX Acoustic dB12 Waste Fitting	0.553
110mm Triple Depth Single Socket Expansion Coupler VOX Acoustic dB12 Waste Fitting	0.38
50mm Access Pipe with Screw Cap VOX Acoustic dB12 Waste Fitting	0.22
75mm Access Pipe with Screw Cap VOX Acoustic dB12 Waste Fitting	0.36
110mm Access Pipe with Screw Cap VOX Acoustic dB12 Waste Fitting	0.752
160mm Access Pipe with Screw Cap VOX Acoustic dB12 Waste Fitting	1.757