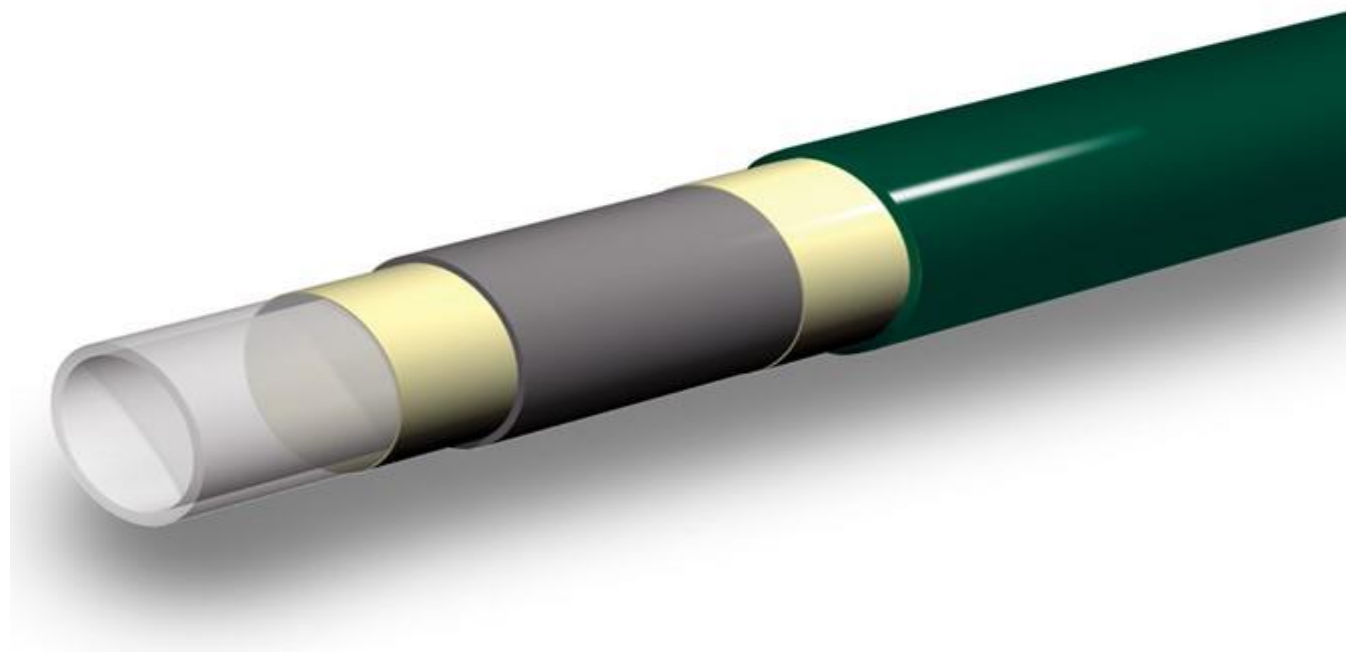


ENVIRONMENTAL PRODUCT DECLARATION

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

PE-Xc Pipes
Purmo Group Plc



EPD HUB, HUB-1384

Publishing date 13 May 2024, last updated on 13 May 2024, valid until 13 May 2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Purmo Group Plc
Address	46 Bulevardi, P.O. Box 115, FI-00121 Helsinki, Finland
Contact details	info@purmogroup.com
Website	www.purmogroup.com

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
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	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4, and modules C1-C4, D
EPD author	Andreas Thiemann
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> External verification
EPD verifier	Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited

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

PRODUCT

Product name	PE-Xc Pipes
Additional labels	.
Product reference	M21FBCXC5C172060000
Place of production	Waldstraße 3, 48607 Ochtrup, Germany
Period for data	Calendar year 2021
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	+1,3 / + 0,9 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	2,33E+00
GWP-total, A1-A3 (kgCO ₂ e)	2,10E+00
Secondary material, inputs (%)	0.31
Secondary material, outputs (%)	74.2
Total energy use, A1-A3 (kWh)	10.1
Net fresh water use, A1-A3 (m ³)	0.03

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Purmo Group has been one of the world's leading providers of hydronic and electric indoor climate comfort solutions since 1953. Ranging from emission, distribution, valves and controls to ventilation and generation, we provide everything needed to optimise the indoor climate of buildings of all sizes and fit for different purposes.

With more than 50 years of experience in pipe production and more than 3 billion meters of pipes produced, Purmo Group has also become one of the leading pipe manufacturers in the area of surface heating, water distribution systems, drinking water systems and gas pipes. Thanks to a heating pipe production area of more than 60,000 m² and our own physical networking system, we are able to meet individual customer requirements for a tailor-made pipe system.

We also put the topic of sustainability on every agenda. We anchor it in our goals, our decision-making and wear it as a badge in conversations with suppliers, customers, investors and other stakeholders. From production lines to product design, from emissions to material sourcing, from human resources to community engagement - we want sustainability to permeate every part of our company and be part of our corporate DNA. We call this Complete Care.

PRODUCT DESCRIPTION

Purmo Group's PE-Xc pipes get their outstanding properties through a special physical networking process. The result of this production method is a particularly long-lasting, temperature-resistant and pressure-resistant pipe.

There are also no compromises when it comes to sustainability: before delivery, every meter of pipe is carefully checked to ensure that it can withstand the highest loads for years to come. In addition to the conventional use in domestic installations, the PE-Xc pipes are also suitable, for example, for underground laying, component activation, etc.

We produce the networked PE-Xc pipes in a wide variety of designs and depending on customer requirements. On top of various dimensions and colours, we also offer different structures. From a single-layer wall structure (Mono) without an oxygen barrier layer or a five-layer structure with an external barrier layer acc. ISO 15875, to a five-layer structure with a barrier layer protected in the middle of the wall structure acc. ISO 21003, we offer tailor-made pipes for every application.

Our high-quality pipes are mainly used for heating applications. The pipes have very good long-term properties, a low corrosion and incrustation potential as well as a low roughness coefficient. These pipes and materials are also designed and approved for installations for hot and cold water distribution in households. The advantage of these pipes is that they are less affected by aggressive water and do not release any taste, odour, heavy metals or harmful substances into the drinking water.

Further information can be found at www.purmogroup.com

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	-	-
Minerals	-	-
Fossil materials	100	Europe
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	0.061102909

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

Substances of very high concern	EC	CAS
-	-	-
-	-	-
-	-	-
-	-	-

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

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

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	MN D	MN D	MN D	MN D	MN D	MN D	MN D	MN D	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

Modules not declared = MND. Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

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

The product is made of extruded high-density polyethylene (PE-HD). The product does not contain any volatile organic compounds (VOC).

The transports from suppliers are modelled based on material- class-specific transport distances. The individual transport distances of each supplier are calculated according to the corresponding sales volumes.

All A2 transport such as truck, rail, air and sea freight were taken into account.

The production and packaging of the PE-Xc pipes takes place at the production site. The plant is certified according to ISO 9001, ISO 14001, ISO 45001 and ISO 50001.

The production and provision of packaging material are modelled in A3. Typically, the pipes are delivered in coils, either in cardboard boxes or wrapped in foil on pallets. Alternatively, some dimensions are available as straight rods packed in plastic sleeves or cardboard sleeves.

Accompanying installation instructions are either included in the packaging or accessible online for reference.

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.

A4 - The average transport distance from the logistic plant to the building site is assumed to be 470 km, and the transport method is assumed to be a lorry. Transport does not cause losses, because products are packaged properly. During transportation there is not product or packaging loss. The installation accounts for the treatment of packaging waste.

Treatment of packaging is done in C1-C4.

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)

C1 - Dismantling When the building is demolished, the pipes are removed as they are not structural components. The energy consumption for dismantling is negligible, so the impact of demolition is assumed to be minimal.

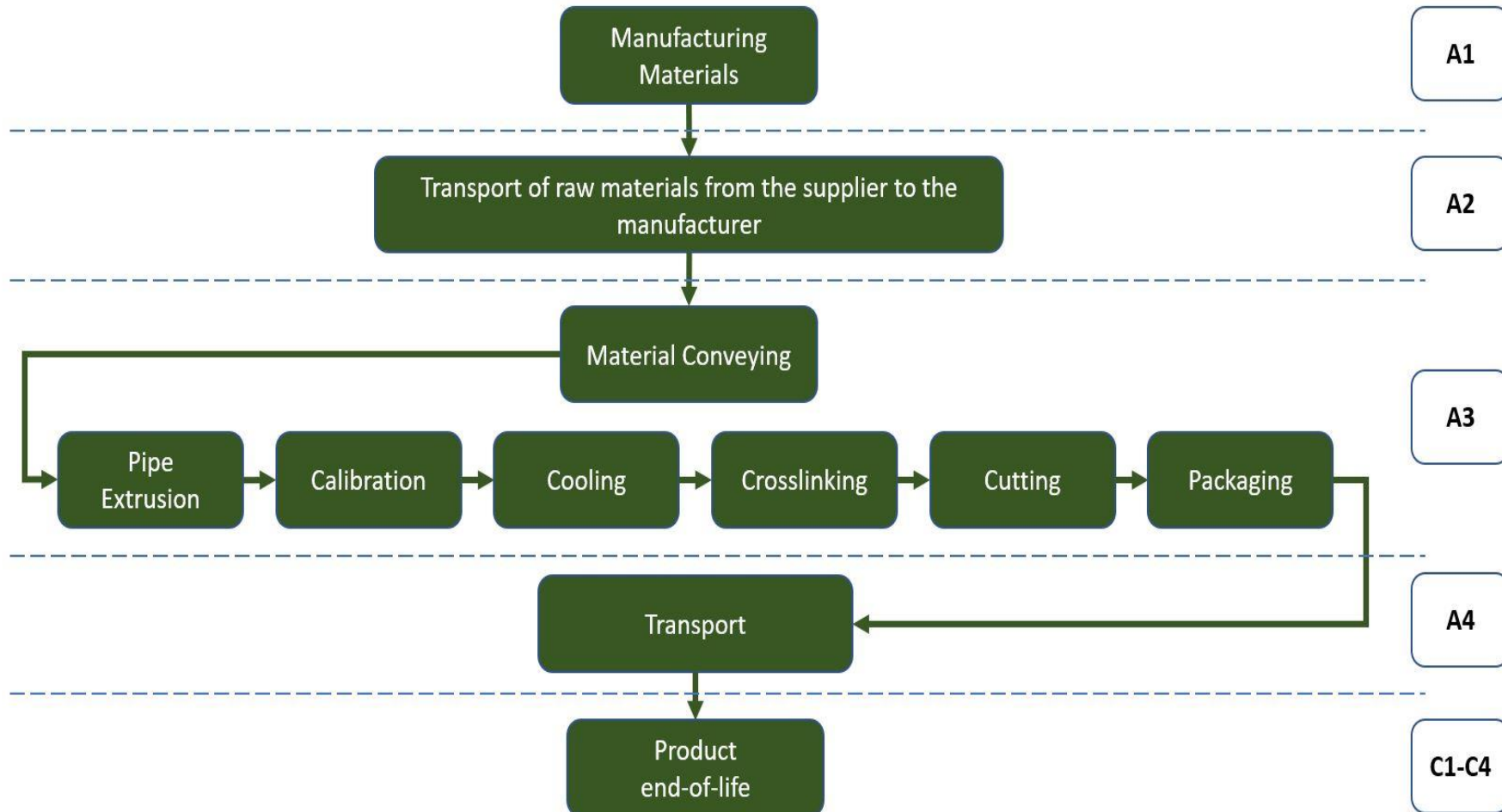
C2 - Transportation to waste recycling The transportation of the end-of-life product from the demolition site to the next plant is done usually by truck and is about 50 km.

C3 - Waste processing for reuse, recovery and/or recycling Research studies suggest that about 36% of plastic raw waste can be incinerated through energy recovery and 63% can be recycled.

C4 - Disposal The remaining 1% of plastic pipes are granulated and used for other construction projects such as road building or disposed of in a landfill.

D - The benefits and burdens of packaging waste in A5 are also considered in Module D.

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

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

ALLOCATION, ESTIMATES AND ASSUMPTIONS

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

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

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Representative product
Variation in GWP-fossil for A1-A3	+1,3 / + 0,9 %

Different dimensions were considered from shortest (DN6) to higher dimension (DN25). Deviations occur with +1,3 and +0,9% variation in GWP fossil for modules 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 v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total ¹⁾	kg CO ₂ e	2,09E+00	3,74E-02	-2,09E-02	2,10E+00	8,32E-02	MND	MND	MND	MND	MND	MND	MND	MND	MNR	4,95E-03	1,31E+00	6,23E-02	-8,62E-02
GWP – fossil	kg CO ₂ e	2,09E+00	3,73E-02	2,03E-01	2,33E+00	8,32E-02	MND	MND	MND	MND	MND	MND	MND	MND	MNR	4,95E-03	1,15E+00	2,92E-03	-1,03E-02
GWP – biogenic	kg CO ₂ e	0,00E+00	6,07E-07	-2,24E-01	-2,24E-01	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,65E-01	5,94E-02	-7,61E-02
GWP – LULUC	kg CO ₂ e	6,40E-04	1,53E-05	4,20E-04	1,08E-03	3,26E-05	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,79E-06	7,68E-05	5,80E-07	2,11E-04
Ozone depletion pot.	kg CFC ₁₁ e	4,60E-08	8,23E-09	2,31E-08	7,73E-08	1,92E-08	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,19E-09	2,91E-09	1,45E-10	-1,70E-09
Acidification potential	mol H ⁺ e	7,41E-03	1,56E-04	7,53E-04	8,32E-03	3,38E-04	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,03E-05	3,51E-04	5,00E-06	-1,67E-04
EP-freshwater ²⁾	kg Pe	3,22E-05	3,16E-07	1,59E-05	4,84E-05	5,84E-07	MND	MND	MND	MND	MND	MND	MND	MND	MNR	3,40E-08	1,50E-06	1,49E-08	-6,68E-06
EP-marine	kg Ne	1,29E-03	4,56E-05	1,97E-04	1,53E-03	1,01E-04	MND	MND	MND	MND	MND	MND	MND	MND	MNR	6,02E-06	1,34E-04	1,43E-05	-4,95E-05
EP-terrestrial	mol Ne	1,41E-02	5,03E-04	2,03E-03	1,66E-02	1,11E-03	MND	MND	MND	MND	MND	MND	MND	MND	MNR	6,64E-05	1,39E-03	1,76E-05	-4,75E-04
POCP (“smog”) ³⁾	kg NMVOCe	6,94E-03	1,53E-04	6,57E-04	7,75E-03	3,40E-04	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,16E-05	3,82E-04	8,42E-06	-1,15E-04
ADP-minerals & metals ⁴⁾	kg Sbe	1,42E-05	1,33E-07	6,83E-07	1,51E-05	2,95E-07	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,17E-08	6,60E-07	1,79E-09	2,23E-06
ADP-fossil resources	MJ	7,30E+01	5,40E-01	3,78E+00	7,74E+01	1,23E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	7,61E-02	4,21E-01	1,15E-02	-1,18E-01
Water use ⁵⁾	m ³ e depr.	1,01E+00	2,38E-03	6,89E-02	1,08E+00	5,71E-03	MND	MND	MND	MND	MND	MND	MND	MND	MNR	3,51E-04	4,50E-02	7,73E-05	-3,96E-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, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	7,39E-08	3,19E-09	7,40E-09	8,45E-08	7,18E-09	MND	MND	MND	MND	MND	MND	MND	MND	MNR	5,82E-10	2,67E-08	9,10E-11	-5,72E-09
Ionizing radiation ⁶⁾	kBq U235e	1,38E-01	2,51E-03	2,30E-02	1,64E-01	6,46E-03	MND	MND	MND	MND	MND	MND	MND	MND	MNR	3,92E-04	2,20E-03	5,98E-05	-1,73E-03
Ecotoxicity (freshwater)	CTUe	1,16E+01	4,99E-01	2,66E+00	1,48E+01	1,02E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	6,32E-02	2,55E+00	5,50E-02	-3,21E+00
Human toxicity, cancer	CTUh	6,23E-10	1,43E-11	2,35E-10	8,72E-10	3,17E-11	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,67E-12	3,04E-10	4,12E-13	-1,73E-11
Human tox. non-cancer	CTUh	1,35E-08	4,65E-10	2,19E-09	1,62E-08	1,04E-09	MND	MND	MND	MND	MND	MND	MND	MND	MNR	6,67E-11	3,11E-09	2,36E-11	-6,88E-10
SQP ⁷⁾	-	1,96E+00	3,74E-01	2,29E+01	2,53E+01	8,64E-01	MND	MND	MND	MND	MND	MND	MND	MND	MNR	8,87E-02	6,36E-01	2,73E-02	-2,51E-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	1,25E+00	6,38E-03	2,20E+00	3,45E+00	1,77E-02	MND	MND	MND	MND	MND	MND	MND	MND	MNR	9,85E-04	3,49E-02	2,83E-04	-1,02E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	2,02E+00	2,02E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	-1,49E+00	-5,25E-01	6,67E-01
Total use of renew. PER	MJ	1,25E+00	6,38E-03	4,22E+00	5,47E+00	1,77E-02	MND	MND	MND	MND	MND	MND	MND	MND	MNR	9,85E-04	-1,46E+00	-5,25E-01	-3,54E-01
Non-re. PER as energy	MJ	2,88E+01	5,40E-01	3,64E+00	3,30E+01	1,23E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	7,61E-02	4,21E-01	1,15E-02	-9,28E-02
Non-re. PER as material	MJ	4,42E+01	0,00E+00	-1,76E+00	4,25E+01	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	-6,44E+00	-3,60E+01	-1,38E-03
Total use of non-re. PER	MJ	7,30E+01	5,40E-01	1,88E+00	7,54E+01	1,23E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	7,61E-02	-6,02E+00	-3,60E+01	-9,42E-02
Secondary materials	kg	3,09E-03	1,79E-04	4,97E-03	8,24E-03	4,14E-04	MND	MND	MND	MND	MND	MND	MND	MND	MNR	2,14E-05	2,15E-03	4,05E-06	3,60E-02
Renew. secondary fuels	MJ	2,85E-05	2,30E-06	4,01E-02	4,02E-02	4,56E-06	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,89E-07	1,74E-05	1,32E-07	-3,41E-07
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	2,60E-02	6,41E-05	1,73E-03	2,78E-02	1,55E-04	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,01E-05	3,22E-04	1,14E-05	-7,85E-04

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	4,90E-02	7,82E-04	1,25E-02	6,23E-02	1,39E-03	MND	MND	MND	MND	MND	MND	MND	MND	MNR	8,16E-05	6,45E-03	8,27E-06	3,60E-03
Non-hazardous waste	kg	1,37E+00	1,25E-02	5,85E-01	1,97E+00	2,46E-02	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,42E-03	4,53E-01	4,65E-02	-8,17E-02
Radioactive waste	kg	4,38E-05	3,57E-06	8,89E-06	5,63E-05	8,50E-06	MND	MND	MND	MND	MND	MND	MND	MND	MNR	5,25E-07	1,03E-06	9,96E-09	-1,39E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	7,07E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	3,49E-02	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	3,69E-01	0,00E+00	0,00E+00

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

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO ₂ e	1,98E+00	3,70E-02	1,99E-01	2,22E+00	8,24E-02	MND	MND	MND	MND	MND	MND	MND	MND	MNR	4,91E-03	1,15E+00	1,02E-02	-1,06E-02
Ozone depletion Pot.	kg CFC ₁₁ e	3,98E-08	6,52E-09	1,93E-08	6,56E-08	1,53E-08	MND	MND	MND	MND	MND	MND	MND	MND	MNR	9,40E-10	2,51E-09	1,15E-10	-7,89E-10
Acidification	kg SO ₂ e	6,19E-03	1,22E-04	5,89E-04	6,90E-03	2,62E-04	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,57E-05	2,61E-04	3,83E-06	-1,28E-04
Eutrophication	kg PO ₄ ³ e	1,60E-03	2,78E-05	7,23E-04	2,36E-03	5,95E-05	MND	MND	MND	MND	MND	MND	MND	MND	MNR	3,51E-06	8,18E-04	3,53E-04	-8,57E-05
POCP ("smog")	kg C ₂ H ₄ e	6,33E-04	4,99E-06	4,49E-05	6,83E-04	1,07E-05	MND	MND	MND	MND	MND	MND	MND	MND	MNR	6,27E-07	2,25E-05	2,19E-06	-4,45E-06
ADP-elements	kg Sbe	1,42E-05	1,30E-07	6,61E-07	1,50E-05	2,88E-07	MND	MND	MND	MND	MND	MND	MND	MND	MNR	1,13E-08	6,51E-07	1,74E-09	2,23E-06
ADP-fossil	MJ	7,30E+01	5,40E-01	3,78E+00	7,73E+01	1,23E+00	MND	MND	MND	MND	MND	MND	MND	MND	MNR	7,61E-02	4,21E-01	1,15E-02	-1,18E-01

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

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

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

Why does verification transparency matter? [Read more online](#)

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

THIRD-PARTY VERIFICATION STATEMENT

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

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

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

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

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
13.05.2024

