ENVIRONMENTAL PRODUCT DECLARATION

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

FRÄNKISCHE PE-RT/AL/PE-RT multilayer composite pipe

FRÄNKISCHE Rohrwerke Gebr. Kirchner GmbH & Co. KG

EPD HUB, HUB-3035

Published on 07.03.2025, last updated on 18.05.2025, valid until 07.03.2030

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GENERAL INFORMATION

MANUFACTURER

Manufacturer	FRÄNKISCHE Rohrwerke Gebr. Kirchner GmbH & Co. KG
Address	Hellinger Str. 1, 97486 Königsberg in Bayern, Germany
Contact details	info@fraenkische.de
Website	www.fraenkische.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 EN 16904 Product Category Rules (PCR) for plastics piping systems inside buildings
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Samuel Schäff
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Imane Uald Lamkaddam as an authorized verifier for EPD Hub

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	FRÄNKISCHE PE-RT/AL/PE-RT multilayer composite pipe
Additional labels	
Product reference	73016401
Place of production	Königsberg in Bayern, Germany
Period for data	01.01.2023 - 31.12.2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m
Declared unit mass	0.113 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	4.77E-01
GWP-total, A1-A3 ($kgCO_2e$)	4.80E-01
Secondary material, inputs (%)	1.61
Secondary material, outputs (%)	57.5
Total energy use, A1-A3 (kWh)	2.31
Net freshwater use, A1-A3 (m^3)	0.01

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

FRÄNKISCHE Rohrwerke Gebr. Kirchner GmbH & Co. KG, a wholly-owned subsidiary of FRÄNKISCHE Group SE, is among the world's leading suppliers of pipe systems. The family-owned enterprise, founded in 1906 and headquartered in Königsberg, Germany, specialises in developing and producing high-quality pipes, accessories, and system components for electrical installation and drainage, plumbing and heating installation, heat recovery ventilation, and stormwater management. Three key historical inventions form the basis for the company's success and its diverse product and solution portfolio: the world's first flexible corrugated metal conduit, which revolutionised electrical installation (1952), the world's first continuously extruded flexible plastic electrical conduit (1959), and the world's first corrugated and continuously produced plastic drainage pipe (1961). FRÄNKISCHE Rohrwerke currently employs around 1,400 people and operates production sites and sales facilities in Germany, as well as branches across Europe. For more information, please refer to www.fraenkische.com.

PRODUCT DESCRIPTION

White multilayer composite pipe in coils made of polyethylene of raised temperature resistance (PE-RT) as inner layer and outer surface and longitudinally butt-welded aluminium pipe as middle layer for drinking water and heating system installations. The maximum continuous operating pressure is 10 bar and the maximum continuous operating temperature is 70 °C.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	25.1	EU
Minerals	-	
Fossil materials	74.9	EU
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	0.00054

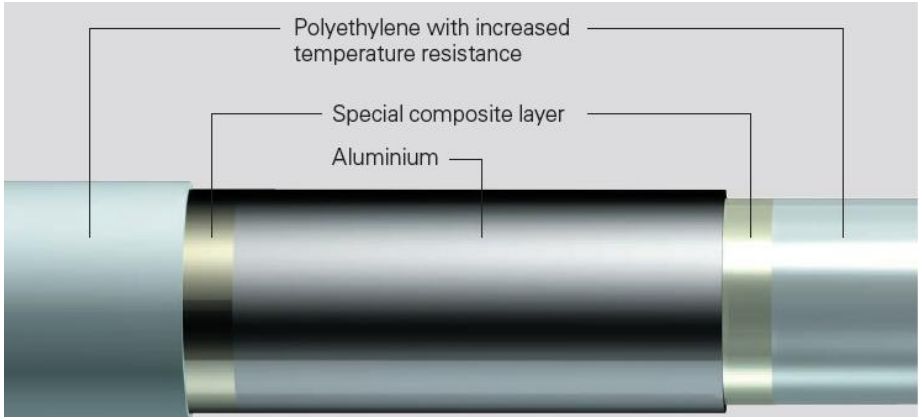
FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m
Mass per declared unit	0.113 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).

Type		PE-RT/AL/PE-RT multilayer composite pipe			
DN		12	15	20	25
Dimension [mm]		16x2.0	20x2.0	26x3.0	32x3.0
Inside diameter [mm]		12	16	20	26
Pipe weight [g/m]		112	154	294	404
Water content [litres/m]		0.113	0.201	0.314	0.531
Material		PE-RT (type 2) /AL/PE-RT			
Pipe roughness [mm]		0.007			
Permanent operating temperature [°C]		Max. 70			
Operating pressure [bar]		Max 10			
Material class DIN EN 13501-1		E			
Thermal conductivity [W / (m · K)]		0.45			
Expansion [mm / m · K]		0.026			
Min. bend radius [mm]	- Without bending tool	80	100		
	- With bending spring	32	60		
	- With bending tool	55	79	88	128
	- With bending tool 79100630	32	40		



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		
×	×	×	×	×	MND	MND	MND	MND	MND	MND	MND	×	×	×	×	×		
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 = 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 production of PE-RT/AL/PE-RT multilayer composite pipe consists of the following process steps:

The PE-RT/AL/PE-RT multilayer composite pipe is manufactured from high density polyethylene of raised temperature, heat-stabilized high density polyethylene, aluminium and adhesives. The product consists of multiple layers (PE-RT/Al/PE-RT). The inner layer (PE-RT type 2) of the pipe is co-extruded with an adhesive, calibrated and dried. The aluminium layer is welded on top and another adhesive is added. The outer layer is extruded on top of the adhesive. The finished product will be vaporized before going into sale. Pipes in dimensions up to 32 mm are supplied in coils packed in cardboard boxes on pallets.

The production process is certified according to the quality management system according to /DIN EN ISO 9001.

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.
The average distance of transportation from the production plant to the installation site is based on the actual sales weighted average figures of the company in the local markets. The transportation is performed by truck.

Environmental impacts from installation into the building (A5) include emissions of energy use in installation and the packaging waste. There is no product installation loss due to couplings.

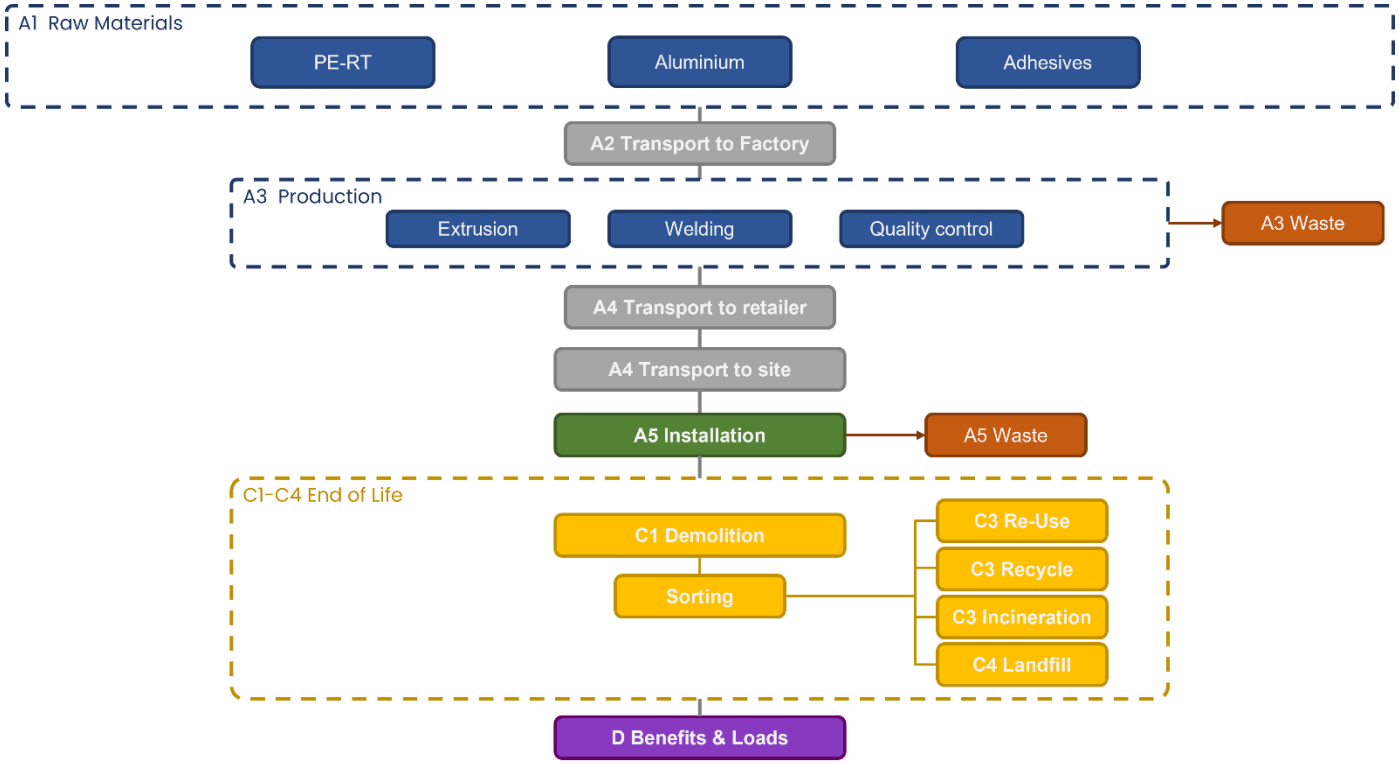
PRODUCT USE AND MAINTENANCE (B1-B7)

The reference service life is at least 50 years, analogous to the service life of the house. There is no indication that the PE-RT/AL/PE-RT multilayer composite pipe has a shorter service life than the building itself. This reflects the high ageing resistance of the product when used as intended. The reference service life is not relevant due to the exclusion of Module B.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Since the consumption of energy and natural resources is negligible for disassembling of the end-of-life product, the impacts of demolition are assumed zero (C1). The end-of-life product is assumed to be sent to the closest facility by lorry and is assumed to be 50 km away (C2). 100% of the end-of-life product is collected separately from the demolition site while 40% is sent to recycling and 37% to incineration facilities (C3). 23 % of the end-of-life product goes to landfills (C4). Due to the recycling and incineration potential of polyethylene, the end-of-life product is converted into recycled PE while energy and heat are produced from its incineration (D). The benefits and loads of waste packaging materials 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 material	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	No allocation

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	%

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

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.8, 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_2e	4,41E-01	7,95E-03	3,10E-02	4,80E-01	1,31E-02	2,67E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,65E-04	1,02E-01	3,00E-03	-1,15E-01
GWP – fossil	kg CO_2e	4,36E-01	7,95E-03	3,30E-02	4,77E-01	1,31E-02	6,73E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,65E-04	1,02E-01	3,00E-03	-1,15E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-2,00E-03	-2,00E-03	0,00E+00	2,00E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,70E-04
GWP – LULUC	kg CO_2e	5,08E-03	3,56E-06	4,38E-05	5,13E-03	6,27E-06	7,27E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,55E-07	3,37E-06	1,15E-06	-9,25E-05
Ozone depletion pot.	kg CFC-$_{11}$e	1,35E-08	1,17E-10	2,67E-10	1,39E-08	2,05E-10	4,11E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,84E-11	2,81E-11	1,87E-11	-4,06E-09
Acidification potential	mol H^+e	2,04E-03	2,71E-05	7,71E-05	2,14E-03	3,27E-05	9,59E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,06E-06	2,11E-05	5,68E-06	-4,70E-04
EP-freshwater[2)]	kg Pe	1,61E-04	6,19E-07	2,66E-05	1,88E-04	1,08E-06	4,43E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,58E-08	7,01E-07	1,35E-07	-3,55E-05
EP-marine	kg Ne	3,22E-04	8,90E-06	1,75E-05	3,48E-04	8,03E-06	5,27E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,03E-06	1,16E-05	6,81E-06	-7,87E-05
EP-terrestrial	mol Ne	3,10E-03	9,69E-05	1,42E-04	3,34E-03	8,69E-05	2,78E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,12E-05	9,07E-05	2,19E-05	-8,15E-04
POCP ("smog")[3)]	kg NMVOC	1,94E-03	3,99E-05	4,90E-05	2,03E-03	4,80E-05	8,90E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,75E-06	2,39E-05	7,62E-06	-5,45E-04
ADP-minerals & metals[4)]	kg Sbe	2,35E-06	2,22E-08	3,87E-07	2,76E-06	4,17E-08	8,03E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,08E-09	2,28E-08	2,41E-09	-6,83E-07
ADP-fossil resources	MJ	1,02E+01	1,15E-01	3,55E-01	1,06E+01	1,93E-01	5,70E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,36E-02	2,64E-02	1,69E-02	-3,09E+00
Water use[5)]	m^3e depr.	4,77E-01	5,70E-04	6,11E-03	4,84E-01	9,59E-04	9,04E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,70E-05	3,01E-03	3,19E-04	-3,11E-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	2,16E-08	7,96E-10	4,26E-10	2,28E-08	1,17E-09	8,23E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,92E-11	1,98E-10	1,11E-10	-3,69E-09
Ionizing radiation[6)]	kBq U235e	7,65E-02	1,00E-04	5,13E-03	8,18E-02	1,71E-04	7,88E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,65E-05	1,58E-04	3,11E-05	-1,59E-02
Ecotoxicity (freshwater)	CTUe	1,05E+00	1,63E-02	9,73E-02	1,16E+00	2,96E-02	1,28E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,81E-03	3,69E-02	5,01E+00	-2,42E-01
Human toxicity, cancer	CTUh	4,85E-10	1,31E-12	8,93E-12	4,95E-10	2,21E-12	8,79E-14	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,64E-13	5,43E-12	6,47E-13	-2,24E-11
Human tox. non-cancer	CTUh	4,62E-09	7,47E-11	4,19E-10	5,11E-09	1,23E-10	4,06E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,60E-12	1,82E-10	1,37E-10	-9,03E-10
SQP[7)]	-	8,53E-01	1,16E-01	2,28E-01	1,20E+00	1,73E-01	1,55E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,02E-03	3,49E-02	2,98E-02	-4,01E-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	1,52E+00	1,58E-03	8,87E-02	1,61E+00	2,78E-03	-1,73E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,28E-04	2,50E-03	4,55E-04	-1,71E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,75E-02	1,75E-02	0,00E+00	-1,75E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,00E-03
Total use of renew. PER	MJ	1,52E+00	1,58E-03	1,06E-01	1,63E+00	2,78E-03	-3,48E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,28E-04	2,50E-03	4,55E-04	-1,66E-01
Non-re. PER as energy	MJ	6,41E+00	1,15E-01	1,87E-01	6,71E+00	1,93E-01	-4,50E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,36E-02	-2,63E+00	-7,27E-01	-3,09E+00
Non-re. PER as material	MJ	3,75E+00	0,00E+00	-1,43E-01	3,61E+00	0,00E+00	-1,84E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-2,62E+00	-9,70E-01	1,44E+00
Total use of non-re. PER	MJ	1,02E+01	1,15E-01	4,42E-02	1,03E+01	1,93E-01	-2,29E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,36E-02	-5,25E+00	-1,70E+00	-1,65E+00
Secondary materials	kg	1,82E-03	4,91E-05	2,05E-04	2,08E-03	8,59E-05	1,54E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,17E-06	1,28E-04	6,57E-06	3,56E-02
Renew. secondary fuels	MJ	2,04E-05	6,23E-07	6,06E-04	6,26E-04	1,10E-06	1,22E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,80E-08	9,84E-07	9,94E-08	-3,10E-06
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,08E-02	1,70E-05	1,85E-04	1,10E-02	2,88E-05	4,67E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,86E-06	2,95E-05	-1,79E-04	-9,66E-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	6,37E-02	1,95E-04	1,35E-03	6,53E-02	3,38E-04	1,95E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,01E-05	1,14E-03	1,00E-04	-5,49E-03
Non-hazardous waste	kg	2,85E+00	3,62E-03	1,46E-01	3,00E+00	6,33E-03	5,33E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,15E-04	4,39E-02	2,50E-01	-8,21E-01
Radioactive waste	kg	2,01E-05	2,46E-08	1,48E-06	2,16E-05	4,18E-08	2,33E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,09E-09	4,03E-08	7,61E-09	-4,06E-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	0,00E+00	MND	MND	MND	MND	MND	MND	MND	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	1,28E-03	1,28E-03	0,00E+00	5,00E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	3,40E-02	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	3,81E-03	3,81E-03	0,00E+00	4,74E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	3,10E-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	3,56E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	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_2e	4,38E-01	7,90E-03	3,30E-02	4,79E-01	1,30E-02	7,02E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,59E-04	1,02E-01	2,89E-03	-1,13E-01
Ozone depletion Pot.	kg CFC-$_{11}$e	1,10E-08	9,36E-11	2,21E-10	1,13E-08	1,64E-10	3,36E-12	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,47E-11	2,37E-11	1,50E-11	-3,30E-09
Acidification	kg SO_2e	1,73E-03	2,07E-05	6,40E-05	1,82E-03	2,62E-05	7,54E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,33E-06	1,54E-05	4,21E-06	-3,95E-04
Eutrophication	kg PO_4^3e	4,81E-04	5,04E-06	4,28E-05	5,29E-04	6,25E-06	2,81E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,88E-07	4,55E-06	2,83E-06	-1,40E-04
POCP (“smog”)	kg C_2H_4e	2,17E-04	1,84E-06	4,84E-06	2,24E-04	2,47E-06	6,92E-08	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,19E-07	1,24E-06	6,55E-07	-4,16E-05
ADP-elements	kg Sbe	2,26E-06	2,16E-08	3,87E-07	2,67E-06	4,06E-08	7,93E-10	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,01E-09	2,20E-08	2,34E-09	-6,75E-07
ADP-fossil	MJ	8,84E+00	1,14E-01	2,57E-01	9,21E+00	1,90E-01	4,16E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,34E-02	2,37E-02	1,64E-02	-2,81E+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
GWP-GHG[9)]	kg CO_2e	4,41E-01	7,95E-03	3,30E-02	4,82E-01	1,31E-02	6,74E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,65E-04	1,02E-01	3,00E-03	-1,15E-01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.

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 compliancy 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.

Imane Uald Lamkaddam as an authorized verifier for EPD Hub Limited
18.05.2025

ANNEX

GWP TOTAL FOR A1-A3 STAGES PER AVAILABLE DIMENSION

Product number	Product description	Product length (m)	Product weight (kg)	Global Warming Potential total for A1-A3 stages (kg CO2e)	Scaling factor
73016401	**multilayer composite pipe, white in coils 16x2 100m**	**100**	**11**	47,70	1,00
73016701	**multilayer composite pipe, white in coils 16x2 200m**	**200**	**22**	95,40	2,00
73020401	**multilayer composite pipe, white in coils 20x2 100m**	**100**	**15,2**	79,70	1,67
73026201	**multilayer composite pipe, white in coils 26x2 50m**	**50**	**14,5**	61,00	1,28
73032201	**multilayer composite pipe, white in coils 32x2 50m**	**50**	**19,1**	103,50	2,17

Stages A1-A3 include Raw material extraction and processing, Transport to the manufacturer, Manufacturing