



ENVIRONMENTAL PRODUCT DECLARATION

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

P- and C-series Exhaust Ventilation Pipes
VILPE Oy



EPD HUB, HUB-2393

Published on 28.11.2024, last updated on 28.11.2024, valid until 28.11.2029

GENERAL INFORMATION

MANUFACTURER

Manufacturer	VILPE Oy
Address	Kauppatie 9, FI-65610 Mustasaari
Contact details	sales@vilpe.com
Website	https://www.vilpe.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
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Milja Sarapaa
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	Imane Uald Iamkaddam, 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	P- and C-series Exhaust Ventilation Pipes
Additional labels	
Product reference	
Place of production	Mustasaari, Finland
Period for data	2023 (Calendar year)
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	-17% +8,2%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	3,17E+00
GWP-total, A1-A3 (kgCO ₂ e)	1,25E+00
Secondary material, inputs (%)	5.83
Secondary material, outputs (%)	36.1
Total energy use, A1-A3 (kWh)	19.4
Net freshwater use, A1-A3 (m ³)	0.49

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

VILPE Oy is a Finnish family-owned company that develops and manufactures ventilation and roofing solutions for the construction industry. The company's operations are based on customer-oriented and innovative product development. Our high quality VILPE® products bring better indoor air quality, energy efficiency and longevity of structures to all spaces and thus improve people's quality of life. VILPE represents safe construction and living, which reinforces the company's commitment to quality and reliability.

PRODUCT DESCRIPTION

VILPE's exhaust ventilation pipes effectively remove dirty and humid air from the building. This product category includes sewer ventilation pipes, cowls, and other ventilation pipes for optimal ventilation. VILPE FLOW exhaust ventilation pipes are suitable for buildings with passive ventilation systems or those with mechanical intake and exhaust ventilation systems. The exhaust air is directed straight towards the sky, so all dirt particles are pushed far away from air intakes. In addition, VILPE FLOW exhaust ventilation pipes effectively keep rain water out. Their low pressure loss also ensures that VILPE FLOW exhaust ventilation pipes are energy-efficient. This reduces the energy consumed by the ventilation system as a whole – which is important not only because it reduces electricity bills, but also because of the corresponding reduction in the system's environmental impact.

The P-series exhaust ventilation pipes can be led watertight with a pass-through set through a roof. VILPE pass-through sets can be installed on any roofs with the most common pitches. The pass-through set is always selected according to the roofing material of the roof. All the exhaust ventilation pipes in the P-series are compatible with all pass-through set types. Using P-series XL exhaust ventilation pipes requires an XL pass-through. 125C/IS/400: Insulated exhaust ventilation pipe with FLOW cowl. Includes a galvanized

steel inner pipe with a lip seal. Should be installed in a sheet metal cone with a Ø 170 mm opening, made by a tinsmith.

160C/IS/400: Insulated exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. Should be installed in a sheet metal cone with a Ø 230 mm opening, made by a tinsmith

200C/IS/450 XL: Insulated XL exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. Should be installed in a sheet metal cone with a Ø 315 mm opening, made by a tinsmith.

250C/IS/450 XL: Insulated XL exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. Should be installed in a sheet metal cone with a Ø 315 mm opening, made by a tinsmith.

125P/IS/500: Insulated exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. The package includes an insulation sleeve (thickness 15 mm, height 200 mm) to facilitate the insulation of the pipe inside the pass-through. VILPE pass-throughs suitable for a range of roofing types and material are available separately. Duct size Ø 125 mm, external Ø 160 mm, height above roof approx. 500 mm.

125P/IS/700: Insulated exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. The package includes an insulation sleeve (thickness 15 mm, height 200 mm) to facilitate the insulation of the pipe inside the pass-through. VILPE pass-throughs suitable for a range of roofing types and material are available separately. Duct size Ø 125 mm, external Ø 160 mm, height above roof approx. 700 mm.

160P/IS/500: Insulated exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. VILPE pass-throughs suitable for a range of roofing types and material are available separately. Duct size Ø 160 mm, external Ø 225 mm, height above roof approx. 500 mm.

160P/IS/700: An insulated exhaust pipe for ventilation, equipped with a FLOW series cowl. Inner pipe with a lip seal, made of galvanized sheet steel. In addition to the pipe, a VILPE pass-through, selected according to the roofing material, is needed. Duct size Ø 160 mm, external Ø 225 mm, height above roof approx. 700 mm.

160P/IS/500 XL: Insulated XL exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. VILPE pass-throughs suitable for a range of roofing types and material are available separately. Duct size Ø 160 mm, external Ø 300 mm, height above roof approx. 500 mm.

160P/IS/700 XL: Insulated XL exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. VILPE pass-throughs suitable for a range of roofing types and material are available separately. Duct size Ø 160 mm, external Ø 300 mm, height above roof approx. 700 mm.

200P/IS/500 XL: Insulated XL exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. VILPE pass-throughs suitable for a range of roofing types and material are available separately. Duct size Ø 200 mm, external Ø 300 mm, height above roof approx. 500 mm.

200P/IS/700 XL: Insulated XL exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. VILPE pass-throughs suitable for a range of roofing types and material are available separately. Duct size Ø 200 mm, external Ø 300 mm, height above roof approx. 700 mm.

250P/IS/500 XL: Insulated XL exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. VILPE pass-throughs suitable for a range of roofing types and material are available separately. Duct size Ø 250 mm, external Ø 300 mm, height above roof approx. 500 mm.

250P/IS/700 XL: Insulated XL exhaust ventilation pipe with FLOW cowl. Includes a galvanized steel inner pipe with a lip seal. VILPE pass-throughs suitable for a range of roofing types and material are available separately. Duct size Ø 250 mm, external Ø 300 mm, height above roof approx. 700 mm.

The average consists of different size C- and P-series exhaust ventilation pipes.

Further information can be found at <https://www.vilpe.com/>.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	36,12 %	EU, China
Minerals		
Fossil materials	63,88 %	EU, Turkey, China
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	0.52636

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	X	X	MND	MND	MND	MND	MND	MND	MND	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 = 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.

Exhaust ventilation pipes of VILPE Oy are manufactured at the Mustasaari site in Finland. The production process consists of raw material delivery, injection molding, quality inspection, and packaging. During injection molding, the raw material is plasticized, injected into the mold, cooled, and removed from the mold. Some of the metal inner pipes for specific exhaust systems are delivered pre-assembled, while others are rolled and sealed on-site. Some assembly is automated. Production requires electricity, heat, and water. Slightly less than 10% of the electricity comes from the production facility's own solar power plant, and until the end of 2023, the rest is from general electricity, after which it will be nuclear electricity. The waste heat from the machines is directed to a heat recovery center and used for building heating. The cooling water is in a closed loop. The material requirement and generated waste vary depending on the size of the product. Production waste is recycled in the process for other products.

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 distribution distance is calculated as a weighted average of the significant sales volumes. Products are transported in full pallets. During installation, the disposal of packaging material is included in the estimate. Exhaust ventilation pipes are packed in cardboard boxes. The amount of packaging material varies slightly depending on the type and size of the exhaust ventilation pipe. After installation, the packaging material is transported by truck to a recycling facility. The average distance to a recycling facility in Finland has been used. Scenario estimates have employed average recycling methods and practices. There is no material waste during installation. The energy consumption during installation, mainly consisting of

the use of a drill, has been excluded from the calculations as it is assumed to be insignificant per examined product unit.

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)

The end-of-life stage consists of the following modules:

C1: Deconstruction of the product

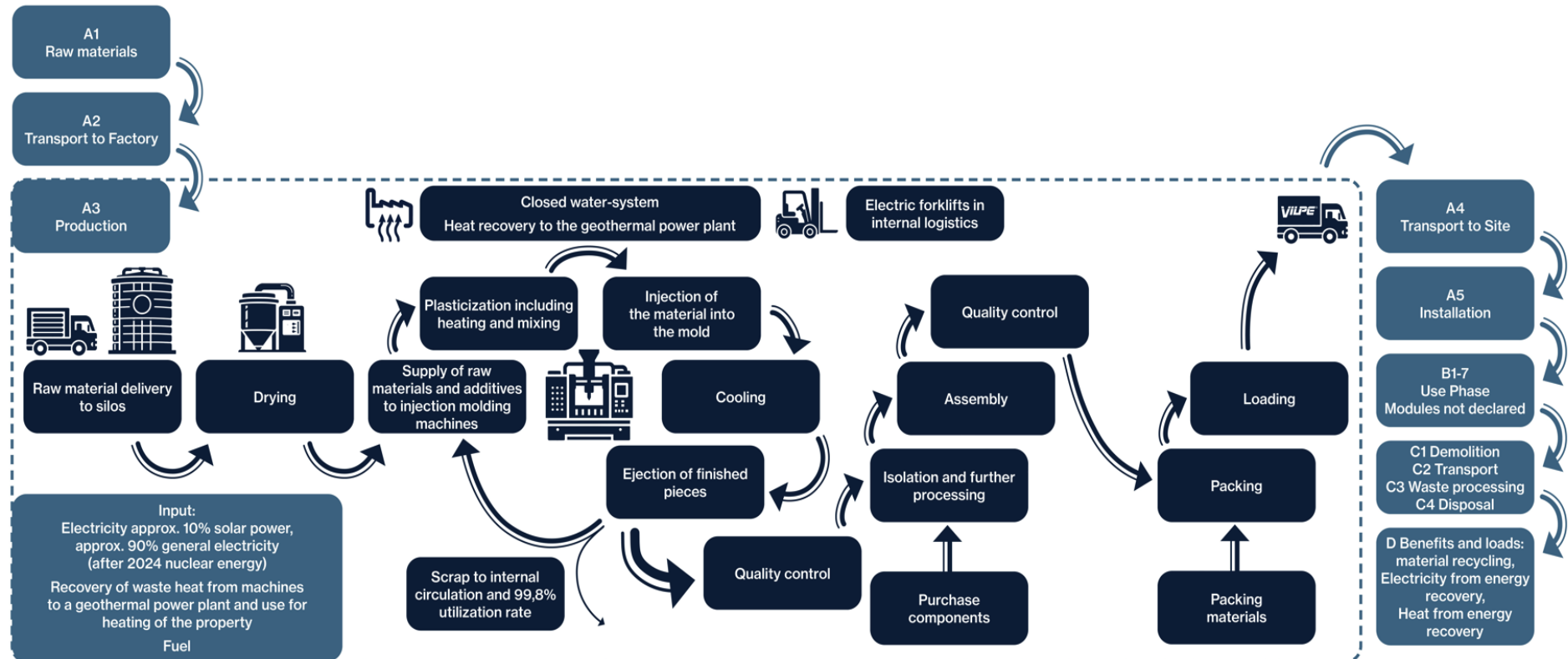
C2: Transportation of the discarded product

C3: Waste processing

C4: Disposal

The end-of-life scenario represents the most likely option in Finland. The average distance to waste treatment facilities in Finland has been used for waste transportation distance. The end-of-life scenario is based on the recycling practices available in Finland. After disposal, it is assumed that the polypropylene of the exhaust ventilation will be incinerated and metal parts are recycled. Due to the energy usage possibilities of the product and packaging, recycled raw material leads to the avoidance of virgin material while energy recovery at the incineration plant displaces electricity and heat production.

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	Allocated by mass or volume
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
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	-17% +8,2%

The average consists of 125C/IS/400, 160C/IS/400, 200C/IS/450 XL, 250C/IS/450 XL, 125P/IS/500, 125P/IS/700, 160P/IS/500, 160P/IS/700, 160P/IS/500 XL, 160P/IS/700 XL, 200P/IS/500, 200P/IS/700 XL, 250P/IS/500 and 250P/IS/700 XL FLOW exhaust ventilation pipes. For the calculation, the smallest product and the largest product were selected from both series. From the P-series products, two middle-size exhaust ventilation pipes of different sizes were also selected for the calculation to provide more data points for assessing the range. Another of these serves as a representative product. All products are comparable in terms of their primary material composition. The differences between them arise primarily from variations in weight and size, as well as the amount of packaging and transportation material required per kilogram of product. All products were manufactured at the same location in Mustasaari, and their intended uses are similar and comparable. In the averaging method, raw materials, packaging, and transportation materials, including transportation distances, were allocated on a per-kilogram basis. Additionally, the energy consumption during manufacturing was allocated per kilogram of product. The transportable mass of the product, end-of-life considerations, and any resulting benefits or drawbacks are specific to each product. The resulting calculations were compared across the products, ensuring that the range of variation remains sufficiently narrow.

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	2,34E+00	6,87E-02	-1,17E+00	1,25E+00	8,49E-02	1,96E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,69E-03	1,64E+00	0,00E+00	-3,70E-01
GWP – fossil	kg CO ₂ e	2,34E+00	6,87E-02	7,61E-01	3,17E+00	8,49E-02	2,71E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,69E-03	1,64E+00	0,00E+00	-5,18E-02
GWP – biogenic	kg CO ₂ e	0,00E+00	0,00E+00	-1,93E+00	-1,93E+00	0,00E+00	1,93E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-3,16E-01
GWP – LULUC	kg CO ₂ e	1,50E-03	3,33E-05	3,61E-03	5,14E-03	3,13E-05	1,98E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,73E-06	1,27E-05	0,00E+00	-2,72E-03
Ozone depletion pot.	kg CFC-11e	9,44E-08	1,52E-08	7,52E-08	1,85E-07	1,95E-08	3,50E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,08E-09	1,82E-09	0,00E+00	-8,66E-08
Acidification potential	mol H ⁺ e	3,30E-02	8,85E-04	5,68E-03	3,96E-02	3,62E-04	1,68E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,99E-05	2,59E-04	0,00E+00	-1,16E-02
EP-freshwater ²⁾	kg Pe	4,10E-05	4,46E-07	1,00E-04	1,41E-04	6,95E-07	7,06E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,84E-08	5,23E-07	0,00E+00	-5,97E-05
EP-marine	kg Ne	2,62E-03	2,28E-04	1,57E-03	4,42E-03	1,07E-04	1,25E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,90E-06	1,18E-04	0,00E+00	-1,20E-03
EP-terrestrial	mol Ne	1,23E-01	2,53E-03	1,63E-02	1,42E-01	1,18E-03	6,02E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,51E-05	1,22E-03	0,00E+00	-1,68E-02
POCP (“smog”) ³⁾	kg NMVOCe	9,16E-03	6,92E-04	3,47E-03	1,33E-02	3,79E-04	1,92E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	2,08E-05	2,98E-04	0,00E+00	-5,69E-03
ADP-minerals & metals ⁴⁾	kg Sbe	3,63E-03	1,60E-07	6,10E-06	3,64E-03	1,99E-07	1,64E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,10E-08	3,13E-07	0,00E+00	-9,81E-06
ADP-fossil resources	MJ	5,88E+01	9,77E-01	1,68E+01	7,65E+01	1,27E+00	3,47E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,05E-02	2,23E-01	0,00E+00	-1,98E+01
Water use ⁵⁾	m ³ e depr.	1,08E+00	4,01E-03	1,35E+00	2,42E+00	5,70E-03	2,64E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,15E-04	5,76E-02	0,00E+00	-3,69E-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	2,78E-07	5,68E-09	6,66E-08	3,50E-07	9,77E-09	2,51E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	5,41E-10	1,76E-09	0,00E+00	-1,16E-07
Ionizing radiation ⁶⁾	kBq 11235e	1,26E-01	4,72E-03	3,71E-01	5,02E-01	6,07E-03	3,20E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,36E-04	1,30E-03	0,00E+00	-3,34E-01
Ecotoxicity (freshwater)	CTUe	5,62E+01	7,92E-01	2,65E+01	8,35E+01	1,15E+00	7,86E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,34E-02	1,61E+00	0,00E+00	-3,93E+01
Human toxicity, cancer	CTUh	5,60E-09	2,92E-11	1,97E-09	7,60E-09	2,82E-11	3,95E-11	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,56E-12	8,02E-11	0,00E+00	2,37E-09
Human tox. non-cancer	CTUh	7,52E-08	7,30E-10	1,28E-08	8,87E-08	1,13E-09	1,26E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,27E-11	2,62E-09	0,00E+00	6,01E-09
SQP ⁷⁾	-	4,19E+00	7,50E-01	1,25E+02	1,30E+02	1,47E+00	4,06E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,12E-02	3,59E-01	0,00E+00	-6,90E+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	1,67E+00	1,06E-02	1,32E+01	1,48E+01	1,44E-02	2,02E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,94E-04	1,37E-02	0,00E+00	-9,89E+00
Renew. PER as material	MJ	1,34E-02	0,00E+00	1,69E+01	1,69E+01	0,00E+00	-1,69E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-1,34E-02	0,00E+00	-4,00E+00
Total use of renew. PER	MJ	1,68E+00	1,06E-02	3,01E+01	3,18E+01	1,44E-02	-1,69E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,94E-04	3,37E-04	0,00E+00	-1,39E+01
Non-re. PER as energy	MJ	3,78E+01	9,77E-01	1,59E+01	5,46E+01	1,27E+00	3,46E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,05E-02	2,22E-01	0,00E+00	-1,98E+01
Non-re. PER as material	MJ	2,12E+01	0,00E+00	8,35E-01	2,20E+01	0,00E+00	-8,35E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-2,12E+01	0,00E+00	-6,40E-04
Total use of non-re. PER	MJ	5,90E+01	9,77E-01	1,68E+01	7,67E+01	1,27E+00	-4,89E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,05E-02	-2,10E+01	0,00E+00	-1,98E+01
Secondary materials	kg	5,83E-02	3,32E-04	4,23E-01	4,82E-01	3,54E-04	3,48E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,96E-05	3,75E-04	0,00E+00	1,83E-01
Renew. secondary fuels	MJ	9,38E-05	2,53E-06	4,34E-01	4,34E-01	3,57E-06	2,77E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,97E-07	1,03E-05	0,00E+00	-5,00E-04
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	4,76E-01	1,08E-04	1,70E-02	4,93E-01	1,65E-04	1,87E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,13E-06	2,58E-04	0,00E+00	-2,14E-02

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	2,41E-01	1,26E-03	4,57E-02	2,88E-01	1,69E-03	1,12E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	9,34E-05	7,83E-04	0,00E+00	-2,78E-01
Non-hazardous waste	kg	4,24E+00	1,80E-02	1,07E+00	5,33E+00	2,78E-02	7,60E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,54E-03	6,64E-01	0,00E+00	-3,84E+00
Radioactive waste	kg	5,35E-05	6,69E-06	1,51E-04	2,11E-04	8,53E-06	1,25E-06	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,71E-07	3,50E-07	0,00E+00	-9,80E-05

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	3,01E-03	3,01E-03	0,00E+00	6,09E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	3,61E-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	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
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,47E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,55E+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	2,27E+00	6,81E-02	7,93E-01	3,13E+00	8,40E-02	1,05E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	4,64E-03	1,64E+00	0,00E+00	-6,06E-03
Ozone depletion Pot.	kg CFC ₁₁ e	8,92E-08	1,20E-08	6,25E-08	1,64E-07	1,55E-08	2,84E-09	MND	MND	MND	MND	MND	MND	MND	0,00E+00	8,55E-10	1,58E-09	0,00E+00	-7,54E-08
Acidification	kg SO ₂ e	2,05E-02	7,03E-04	4,18E-03	2,53E-02	2,81E-04	1,27E-04	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,54E-05	1,85E-04	0,00E+00	-9,88E-03
Eutrophication	kg PO ₄ ³ e	5,08E-03	9,63E-05	2,02E-03	7,19E-03	6,38E-05	1,24E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	3,52E-06	1,83E-04	0,00E+00	-2,24E-03
POCP ("smog")	kg C ₂ H ₄ e	9,16E-04	2,02E-05	2,97E-04	1,23E-03	1,09E-05	2,31E-05	MND	MND	MND	MND	MND	MND	MND	0,00E+00	6,03E-07	5,74E-06	0,00E+00	-6,41E-04
ADP-elements	kg Sbe	3,63E-03	1,56E-07	5,71E-06	3,64E-03	1,93E-07	1,60E-07	MND	MND	MND	MND	MND	MND	MND	0,00E+00	1,07E-08	3,02E-07	0,00E+00	-9,81E-06
ADP-fossil	MJ	5,89E+01	9,77E-01	1,67E+01	7,66E+01	1,27E+00	3,46E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	7,05E-02	2,22E-01	0,00E+00	-1,94E+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 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 acting for EPD Hub Limited
28.11.2024



APPENDIX

PRODUCT PORTFOLIO INCLUDED IN SCOPE

The following list of products are included in the scope of declaration.

Product number	Product name
350501, 350502, 350504, 350507, 350509	125C/IS/400 FLOW Exhaust Ventilation Pipe
350511, 350512, 350514, 350517	160C/IS/400 FLOW Exhaust Ventilation Pipe
350532, 350534, 350537	200C/IS/450 FLOW XL Exhaust Ventilation Pipe
350542, 350544, 350547	250C/IS/450 FLOW XL Exhaust Ventilation Pipe
350041, 350042, 350044, 350046, 350047, 350048, 350049, 35004B, 35004D	125P/IS/500 FLOW Exhaust Ventilation Pipe
350001, 350002, 350004, 350006, 350007, 350008, 350009, 35000D	125P/IS/700 FLOW Exhaust Ventilation Pipe
350041, 350042, 350044, 350046, 350047, 350048, 350049, 35004B, 35004D	160P/IS/500 FLOW Exhaust Ventilation Pipe
350021, 350022, 350024, 350026, 350027, 350028, 350029	160P/IS/700 FLOW Exhaust Ventilation Pipe
350102, 350104, 350107, 350108, 350109, 35010D	160P/IS/500 FLOW XL Exhaust Ventilation Pipe

Product number	Product name
350111, 350112, 350114, 350117, 350118, 350119, 35011D	160P/IS/700 FLOW XL Exhaust Ventilation Pipe
350132, 350134, 350137, 350138, 350139, 35013B, 35013D	200P/IS/500 FLOW Exhaust Ventilation Pipe
350121, 350122, 350124, 350127, 350128, 350129, 35012D	200P/IS/700 FLOW XL Exhaust Ventilation Pipe
350152, 350154, 350157, 350158, 350159, 35015B, 35015D	250P/IS/500 FLOW Exhaust Ventilation Pipe
350142, 350144, 350147, 350148, 350149	250P/IS/700 FLOW XL Exhaust Ventilation Pipe