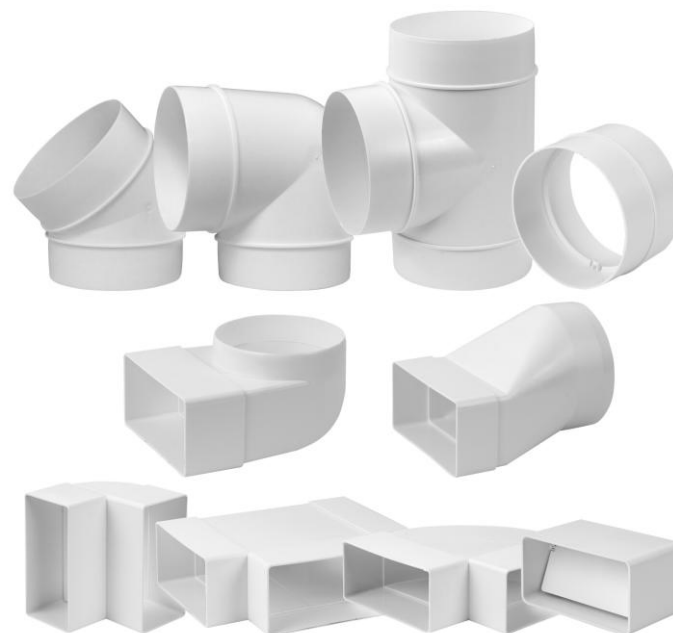




ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Plastic ventilation duct parts (fittings)
SIA EIROPLASTS



EPD HUB, HUB-5835

Published on 25.03.2025, last updated on 25.03.2025, valid until 24.03.2031

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	SIA EIROPLASTS
Address	32/6 Granīta Street, Acone, LV-2119, Latvia
Contact details	europlast@europlast.lv
Website	https://www.europlast.lv

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Laura Šalme, SIA EIROPLASTS
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	HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited

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	Plastic ventilation duct parts (fittings)
Additional labels	Plastic ventilation duct parts (fittings)
Product reference	-
Place(s) of raw material origin	EU
Place of production	Latvia
Place(s) of installation and use	Europe, Middle East & Central Asia (incl. Sweden, Norway, UK, EU, Caucasus, Israel, Qatar, Lebanon)
Period for data	01/01/2024 - 31/12/2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-46,21% / +44,19%
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	66,5

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg plastic ventilation duct system part made from 93% recycled polystyrene
Declared unit mass	1 kg
Mass of packaging	0,798 kg
GWP-fossil, A1-A3 (kgCO₂e)	2,71
GWP-total, A1-A3 (kgCO₂e)	1,14
Secondary material, inputs (%)	97
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	-0,41
Net freshwater use, A1-A3 (m³)	0,02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

EUROPLAST - a producer of ventilation systems and elements since 1998.

PRODUCT DESCRIPTION

This Environmental Product Declaration covers a range of plastic ventilation system components that are manufactured from re-granulated recycled polystyrene (rPS) containing $\geq 93\%$ post-consumer recycled content and 7% virgin material. The product family includes connectors, elbows, reducers, transitions, clamps, clips, mounting brackets, flanges, adapters and valves, forming a complete accessory system for assembling both round and rectangular plastic ductwork used in mechanical ventilation.

These components are designed for indoor installation in residential and commercial buildings, and are compatible with both supply and exhaust air systems. They enable the construction of customizable air distribution networks, supporting a wide variety of ventilation layouts, orientations, and dimensional requirements.

Made from durable rPS, the components exhibit good flame retardancy, moisture resistance, and chemical resistance, as well as high dimensional stability, ensuring reliable performance throughout their service life. The use of recycled plastic reduces the product's embodied environmental impact, and allows the components to remain fully recyclable at end-of-life.

The products are lightweight, facilitating easy handling and installation. Their engineered geometries ensure precise and secure connections without additional fasteners or sealants, minimizing installation time and labor requirements. Mounting clips and support elements are designed to maintain correct duct alignment, prevent sagging, and ensure long-term mechanical integrity of the ventilation system.

This EPD covers: AS100, AV100, AFS100, AFV100, KSF, KS, KLH15-60, KLH, AL100-45, AL100-90, KLV, KLD, KfV, KFS, KF, KFSD, KFF, KT, AT, KSD2, KSD1, KV, AP125-100, AS125, AV125, AFS125, AFV125, KS25, KS25-15, KLH25-90, AL125-45, AL125-90, KLV25-90, KLD25-100, KLD25-125, KfV25, KFS25, KF25, KFF25, KT25, AT125, KSD25-125, KV25, AP150-100, AP150-125, AS150, AV150, AFS150, AFV150, KSF29, KS29, KS29-25, KSD29-150, KLH29-25, KLH29-90, AL150-45, AL150-90, KLV29-90, KLD29-100, KLD29-125, KLD29-150, KfV29, KFS29, KFF29, KT29, AT150, KSD29-150, KV29.

Similarities for all components:

- are manufactured from recycled polystyrene (rPS),
- use identical material formulation, ensuring consistent recyclability,
- share the same manufacturing process (injection molding),
- provide air distribution and connection functionality within ventilation systems,
- are intended for indoor installation in residential and commercial buildings,
- have similar durability, mechanical stability, and end-of-life recyclability.

Differences variants differ by:

- geometry (straight or round connector, elbow, transition, adapter, etc.)
- diameter or cross-section (e.g., 100 mm, 150 mm, flat-duct sizes, 29-series dimensions)
- angle (45°, 90°), or orientation (horizontal / vertical)
 - presence of functional features, such as:
 - integrated valve (AV, KV, AFV, variants with "V")
 - transition between duct shapes (KSD, KFSD)
- longer or shorter transition lengths
- functional subcomponents (e.g., valve insert, rotating mechanism).

Overall, these plastic ventilation components provide a robust, efficient, and sustainable solution for constructing air-distribution systems with minimal installation effort and long-term operational stability.

Further information can be found at: <https://www.europlast.lv>

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	0	-
Fossil materials	55	Europe
Bio-based materials	45	Europe

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	0,355

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg plastic ventilation duct system part made from 93% recycled polystyrene
Mass per declared unit	1 kg
Functional unit	-
Reference service life	30 years

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	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

Not declared = ND.

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.

Plastic ventilation duct fittings are manufactured from recycled polystyrene (rPS), comprising approximately 93% post-consumer recycled material and 7% virgin polystyrene to maintain stable material properties and consistent quality. Raw polymer is supplied as granulate in big bags and delivered directly to the manufacturing site for bulk storage.

Production uses injection molding technology, where granulate is melted, molded, cooled, and demolded under controlled process conditions.

Finished moldings are temporarily held in the production area before being transferred approximately 30 meters to the packaging line.

Electricity consumption covers injection molding machines and all auxiliary equipment for handling, packaging, and labelling. Process losses and production scrap - including rejected parts - are collected and fed back into the production cycle. Other waste streams, such as residual polymers and packaging materials, are sorted on-site and transferred to certified recycling partners in Latvia for mechanical recycling. No recycling credits are claimed for these flows in the life cycle assessment.

Prior to dispatch, finished products undergo visual inspection and labelling. Unit packaging consists primarily of polyethylene film and labelling components, selected to provide adequate protection while minimizing material use. Products are then prepared for distribution to construction material warehouses.

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.

Transport to construction sites (A4) is modelled on actual logistics and sales distribution data. Products are dispatched by road in fully loaded trucks, with return journeys excluded on the basis that logistics providers utilize

return trips for other freight. Transport impacts are calculated per declared unit, inclusive of product and packaging mass, and cover emissions from fuel combustion. The weighted average delivery distance from Latvia to customers is approximately 730-750 km by road.

Installation (A5) is carried out manually using basic hand tools, requiring no electricity, fuel, or water input. Powered equipment is not used at any stage of installation, and no direct emissions to air, soil, or water occur.

Installation waste is limited to packaging materials - wood, cardboard, and plastic film, which are modelled in accordance with defined waste treatment routes.

PRODUCT USE AND MAINTENANCE (B1-B7)

The use stage is not assessed, as it is no impacts are expected to occur during the use of the product.

Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

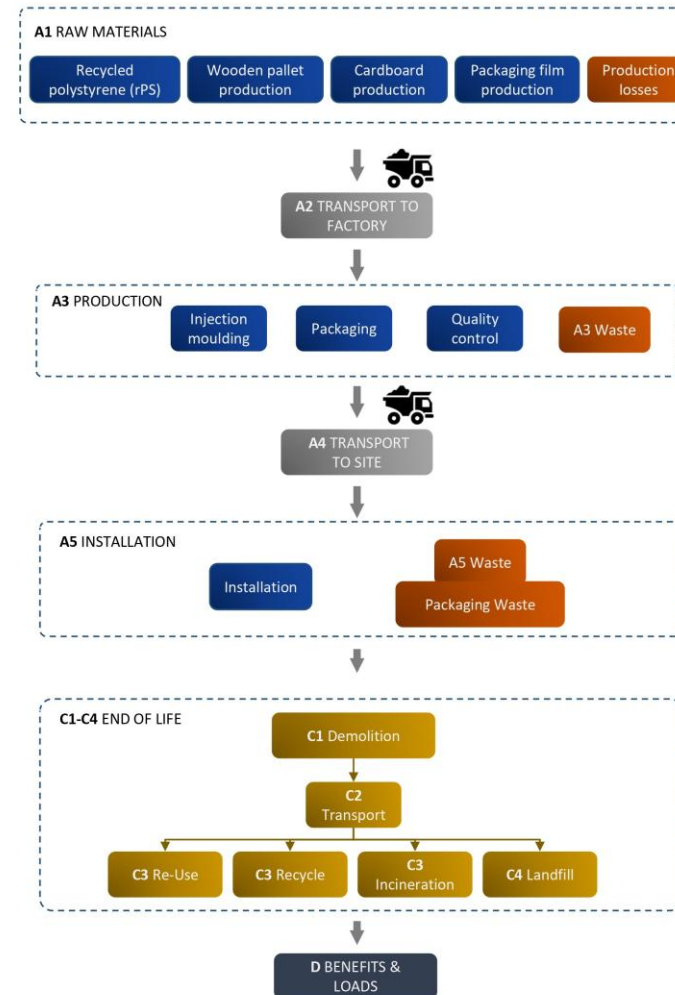
At end of life, ventilation duct fittings are assumed to be dismantled manually during building deconstruction. No electricity, fuel, or water consumption is considered relevant to module C1.

Dismantled products are collected and transported to appropriate waste treatment facilities, modelled in module C2 using representative European lorry transport distances. Given that approximately 90% of products are sold within the European Union, a European average end-of-life scenario is considered representative for the majority of the market.

Modules C3 and C4 cover the treatment of material-specific waste streams, principally plastics. Module C3 addresses the processing of recyclable material fractions and incineration with energy recovery for non-recyclable combustible materials. Module C4 includes the final disposal of materials sent to landfill. All waste treatment routes are modelled using European average datasets in accordance with EN 15804. Packaging materials - wood,

paper, and plastics, are treated under European average end-of-life scenarios, with recycling or energy recovery applied where applicable. Module D reports the potential net benefits from material and energy recovery at end of life. Recyclable material fractions are assumed to substitute equivalent virgin raw material production, based on European average substitution scenarios. Non-recyclable combustible plastic fractions are assumed to undergo incineration with energy recovery, with recovered energy credited as a substitute for European average electricity and heat production. Packaging materials are similarly assumed to be recycled or recovered for energy where applicable. All benefits and loads reported in module D are calculated beyond the end-of-waste state and presented separately from modules A-C, in accordance with the modularity and polluter-pays principles of EN 15804.

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.

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	Allocated by mass or volume
Ancillary materials	No allocation
Manufacturing energy and waste	No allocation

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on average results of product group - by total mass
Variation in GWP-fossil for A1-A3, %	-46,21% / +44,19%

The average of minimum and maximum calculations for the representative product is less than 50%.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.4. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

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 ₂ e	1,21E-01	1,72E-01	8,49E-01	1,14E+00	2,46E-01	1,73E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,44E-02	1,19E+00	6,18E-01	-2,25E+00
GWP – fossil	kg CO ₂ e	1,21E-01	1,72E-01	2,42E+00	2,71E+00	2,45E-01	1,39E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,44E-02	1,19E+00	6,18E-01	-1,74E+00
GWP – biogenic	kg CO ₂ e	1,47E-04	3,60E-05	-1,58E+00	-1,58E+00	4,87E-05	1,59E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,33E-06	-7,03E-05	-5,10E-05	-5,10E-01
GWP – LULUC	kg CO ₂ e	4,52E-05	7,71E-05	1,56E-02	1,58E-02	8,67E-05	3,10E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,08E-05	9,21E-06	6,53E-06	1,73E-03
Ozone depletion pot.	kg CFC-11e	1,85E-09	2,54E-09	4,93E-08	5,37E-08	4,88E-09	3,94E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,41E-10	4,39E-10	2,92E-10	-4,21E-09
Acidification potential	mol H ⁺ e	4,52E-04	5,88E-04	8,01E-03	9,05E-03	7,67E-04	1,48E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,14E-05	2,71E-04	1,57E-04	-9,53E-04
EP-freshwater ²⁾	kg Pe	5,45E-04	1,34E-05	9,76E-04	1,53E-03	1,63E-05	6,95E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,90E-06	3,71E-06	2,17E-06	-2,39E-04
EP-marine	kg Ne	1,75E-04	1,93E-04	2,39E-03	2,76E-03	2,59E-04	1,72E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,64E-05	1,54E-04	6,03E-04	-3,42E-04
EP-terrestrial	mol Ne	1,91E-03	2,10E-03	2,17E-02	2,57E-02	2,81E-03	5,71E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,87E-04	1,31E-03	7,42E-04	-3,82E-03
POCP (“smog”) ³⁾	kg NMVOCe	7,07E-04	8,66E-04	7,77E-03	9,34E-03	1,20E-03	1,90E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,13E-04	3,30E-04	1,99E-04	-1,25E-03
ADP-minerals & metals ⁴⁾	kg Sbe	2,93E-07	4,81E-07	6,29E-06	7,07E-06	8,03E-07	1,33E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,02E-08	8,54E-08	4,91E-08	-3,93E-07
ADP-fossil resources	MJ	1,92E+00	2,50E+00	3,85E+01	4,30E+01	3,45E+00	3,43E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,42E-01	2,32E-01	1,79E-01	-2,84E+00
Water use ⁵⁾	m ³ e depr.	1,00E-02	1,24E-02	6,57E-01	6,80E-01	1,69E-02	1,15E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,59E-03	7,83E-02	3,95E-02	1,02E-01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	9,12E-09	1,73E-08	6,02E-08	8,66E-08	1,93E-08	2,28E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,94E-09	1,40E-09	1,16E-09	-8,06E-09
Ionizing radiation ⁶⁾	kBq 11235e	3,70E-03	2,18E-03	2,82E-01	2,88E-01	4,40E-03	1,33E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,77E-04	4,18E-04	2,76E-04	1,21E-02
Ecotoxicity (freshwater)	CTUe	1,21E+00	3,54E-01	4,45E+01	4,61E+01	4,53E-01	4,56E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,42E-02	2,34E+00	2,04E+00	-1,70E+00
Human toxicity, cancer	CTUh	2,71E-11	2,84E-11	1,36E-09	1,42E-09	4,18E-11	2,07E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,15E-12	1,01E-10	5,35E-11	-1,47E-11
Human tox. non-cancer	CTUh	8,62E-10	1,62E-09	1,42E-08	1,67E-08	2,16E-09	1,02E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,14E-10	3,56E-09	2,34E-09	-3,43E-12
SQP ⁷⁾	-	9,33E-01	2,52E+00	1,04E+02	1,08E+02	2,05E+00	3,16E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,05E-01	6,53E-02	1,78E-01	-3,03E+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	5,14E-02	3,43E-02	6,58E+00	6,66E+00	5,96E-02	-1,04E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,70E-03	9,52E-03	5,81E-03	-4,17E+00
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,38E+01	1,38E+01	0,00E+00	-1,38E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,03E+00
Total use of renew. PER	MJ	5,14E-02	3,43E-02	2,04E+01	2,04E+01	5,96E-02	-2,41E+01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,70E-03	9,52E-03	5,81E-03	8,61E-01
Non-re. PER as energy	MJ	-4,27E+01	2,50E+00	3,17E+01	-8,51E+00	3,45E+00	-3,34E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,42E-01	-1,79E+01	-1,80E+01	-2,90E+00
Non-re. PER as material	MJ	4,53E+01	0,00E+00	1,78E+00	4,70E+01	0,00E+00	-4,35E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-2,13E+01	-2,13E+01	1,67E+00
Total use of non-re. PER	MJ	2,52E+00	2,50E+00	3,35E+01	3,85E+01	3,45E+00	-7,69E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,42E-01	-3,93E+01	-3,93E+01	-1,23E+00
Secondary materials	kg	1,05E+00	1,06E-03	3,69E-01	1,42E+00	1,58E-03	4,35E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,54E-04	2,11E-04	1,28E-04	2,16E-01
Renew. secondary fuels	MJ	6,90E-06	1,35E-05	3,55E-01	3,55E-01	1,99E-05	3,39E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,96E-06	6,92E-06	3,88E-06	-4,75E-06
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	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	6,89E-04	3,70E-04	1,56E-02	1,67E-02	4,64E-04	-6,32E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,54E-05	1,34E-03	-2,53E-04	7,15E-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	2,95E-03	4,24E-03	1,81E-01	1,88E-01	4,94E-03	4,18E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,97E-04	2,05E-02	1,04E-02	5,04E-04
Non-hazardous waste	kg	6,11E-02	7,84E-02	6,06E+00	6,20E+00	1,04E-01	1,27E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,12E-02	5,53E-01	1,52E+00	-1,08E+00
Radioactive waste	kg	9,40E-07	5,33E-07	7,01E-05	7,16E-05	1,09E-06	3,36E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,79E-08	1,06E-07	6,96E-08	-1,38E-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	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	6,00E-02	6,00E-02	0,00E+00	0,00E+00	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	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	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	1,33E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,85E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,62E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	2,46E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,72E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	3,39E+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 ₂ e	1,22E-01	1,71E-01	2,42E+00	2,72E+00	2,44E-01	1,77E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,43E-02	1,19E+00	6,17E-01	-1,73E+00
Ozone depletion Pot.	kg CFC ₁₁ e	1,48E-09	2,03E-09	4,02E-08	4,37E-08	3,89E-09	3,19E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,73E-10	3,91E-10	2,54E-10	-3,94E-09
Acidification	kg SO ₂ e	4,30E-04	4,49E-04	6,29E-03	7,17E-03	5,83E-04	1,11E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,23E-05	1,92E-04	1,12E-04	-6,52E-04
Eutrophication	kg PO ₄ ³ e	8,99E-05	1,09E-04	1,31E-02	1,33E-02	1,48E-04	7,58E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,52E-05	6,87E-05	6,09E-05	-1,78E-04
POCP (“smog”)	kg C ₂ H ₄ e	4,42E-05	4,00E-05	6,31E-04	7,15E-04	5,56E-05	1,82E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,58E-06	1,27E-05	1,08E-05	-8,44E-05
ADP-elements	kg Sbe	2,86E-07	4,69E-07	6,18E-06	6,93E-06	7,84E-07	1,29E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,83E-08	5,93E-08	3,58E-08	-4,11E-07
ADP-fossil	MJ	2,46E+00	2,47E+00	3,38E+01	3,87E+01	3,37E+00	3,20E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,38E-01	2,25E-01	1,74E-01	-3,08E+00

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ⁹⁾	kg CO ₂ e	1,21E-01	1,72E-01	2,43E+00	2,73E+00	2,46E-01	1,39E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,44E-02	1,19E+00	6,18E-01	-1,74E+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

DATA SOURCES

Manufacturing energy scenario documentation – A3

Scenario parameter	Value
Electricity data source and quality	Electricity, medium voltage, residual mix, Latvia, Ecoinvent 3.11
Electricity CO ₂ e / kWh	0.69 kg CO ₂ e/kWh

Transport scenario documentation - A4

Scenario parameter	Value
Fuel type, consumption, and vehicle type	EURO 5 lorry (16–32 t, diesel), 0.33 L/km
Average transport distance, km	Lorry 750km
Capacity utilization (including empty return) %	75
Bulk density of transported products	1,10E+00
Volume capacity utilization factor	1

Installation scenario documentation - A5

Scenario parameter	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	Steel screw: 0.003 kg
Water use / m ³	0 kg
Other resource use / kg	0 kg
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	No energy consumption (manual installation only)
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	<ul style="list-style-type: none"> · PE 0.091 kg · Wood waste 0.42 kg · Paper waste 0.289 kg
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	<ul style="list-style-type: none"> · Exported electricity 0.562 MJ · Exported thermal energy 0.772 MJ · Polyethylene recycling 0.036kg · Polyethylene incineration with energy recovery: 0.034kg · Polyethylene landfill 0.021kg · Wood recycling (sorting and shredding) 0.13kg · Wood incineration with energy recovery: 0.13kg · Wood landfill: 0.021kg · Paper recycling (sorting): 0.24kg · Paper incineration with energy recovery: 0.023kg · Paper landfill: 0.026kg
Direct emissions to ambient air, soil and water / kg	0

End-of-life scenario documentation - C1-C4 (Data source)

Scenario parameter	Value
Collection process – kg collected separately	1 kg
Collection process – kg collected with mixed waste	0 kg
Recovery process – kg for re-use	0 kg
Recovery process – kg for recycling	0 kg
Recovery process – kg for energy recovery	0.75 kg
Disposal (total) – kg for final deposition	0.25kg
Output materials (energy)	<ul style="list-style-type: none"> · Exported electricity: 2.46 MJ · Exported thermal energy: 3.39 MJ
Scenario assumptions e.g. transportation	Separately collected EoL waste is treated with EU-average processes. Waste is transported by EURO 6 truck to treatment/disposal. Typical transport distances applied: 50–250 km depending on route (recycling/incineration/landfill).

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

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited

25.03.2026



APENDIX

Products included in the scope of the EPD









The following plastic ventilation duct fittings manufactured by Eiroplasts SIA are included within the scope of this Environmental Product Declaration.





















All products are manufactured using the same materials, production technology, and manufacturing site, and therefore are declared as a single product group in accordance with EN 15804:2012+A2:2019.





















Environmental impacts are declared per 1 kg of product for the product stage A1–A3.

The product range includes ventilation fittings for Ø100, Ø125 and Ø150 duct systems, such as duct joints, flanges, connectors, elbows, transition joints, t-joints, valves.

The full list of product references included in the EPD is presented in the table below.

				A1-A3 Product stage		
				Global Warming Potential total kg CO2e	Global Warming Potential fossil kg CO2e	Global Warming Potential biogenic kg CO2e
Ø100						
AS100 in 1kg	AS100		circular duct joint plastic, Ø100mm	0,90	2,74	-1,86
AV100 in 1kg	AV100		circular duct joint with valve plastic, Ø100mm	1,49	2,98	-1,51
AFS100 in 1kg	AFS100		circular flange plastic, Ø100mm	0,04	2,25	-2,24
AFV100 in 1kg	AFV100		circular flange with joint and valve plastic, Ø100mm	1,22	3,15	-1,96
KSF in 1kg	KSF		coupling for joining fittings plastic, 110x55mm	1,12	3,46	-2,37
KS in 1kg	KS		duct connector plastic, 110x55mm	0,47	2,05	-1,59
KLH15-60 in 1kg	KLH15-60		elbow horizontal plastic, 110x55mm, 15-60°	1,52	3,33	-1,82
KLH in 1kg	KLH		elbow horizontal plastic, 110x55mm, 90°	0,16	1,79	-1,64

AL100-45 in 1kg	AL100-45		elbow plastic, Ø100mm, 45°	1,23	3,84	-2,64
AL100-90 in 1kg	AL100-90		elbow plastic, Ø100mm, 90°	2,47	3,62	-1,1
KLV in 1kg	KLV		elbow vertical plastic, 110x55mm, 90°	1,75	3,86	-2,13
KLD in 1kg	KLD		elbow with diameter plastic, 110x55mm, Ø100mm	2,04	3,59	-1,56
KFV in 1kg	KFV		flange flat duct joint with valve, plastic, 110x55mm	1,25	2,44	-1,2
KFS in 1kg	KFS		flange flat duct joint, plastic, 110x55mm	0,54	1,79	-1,26
KF in 1kg	KF		flange plastic, 110x55mm	1,52	1,97	-0,46
KFSD in 1kg	KFSD		flange transition joint to the circular duct (short) plastic, 110x55mm, Ø100mm	0,61	2,48	-1,88
KFF in 1kg	KFF		plastic flat connection flange, 110x55mm	1,02	2,25	-1,24
KT in 1kg	KT		t-joint plastic, 110x55mm	0,93	2,44	-1,52
AT100 in 1kg	AT100		t-joint plastic, Ø100-100mm	2,35	3,46	-1,12
KSD2 in 1kg	KSD2		transition joint to the circular duct (long) plastic, 110x55mm, Ø100mm	1,35	2,95	-1,62
KSD1 in 1kg	KSD1		transition joint to the circular duct (short) plastic, 110x55mm, Ø100mm	1,62	3,6	-1,99
KV in 1kg	KV		valve plastic, 110x55mm	1,02	2,47	-1,46
Ø125						
AP125-100 in 1kg	AP125-100		adapter plastic, Ø125-100mm	1,55	3,4	-1,88
AS125 in 1kg	AS125		circular duct joint plastic, Ø125mm	-0,45	2,72	-3,2
AV125 in 1kg	AV125		circular duct joint with valve plastic, Ø125mm	-0,76	2,41	-3,2
AFS125 in 1kg	AFS125		circular flange plastic, Ø125mm	-0,44	1,95	-2,41
AFV125 in 1kg	AFV125		circular flange with joint and valve plastic, Ø125mm	-0,02	1,98	-2,02
KS25 in 1kg	KS25		duct connector plastic, 220x55mm	0,61	2,04	-1,45

KS25-15 in 1kg	KS25-15		duct connector plastic, 220x55mm-110x55mm	0,86	2,18	-1,34
KLH25-90 in 1kg	KLH25-90		elbow horizontal plastic, 220x55mm, 90°	0,61	1,78	-1,18
AL125-45 in 1kg	AL125-45		elbow plastic, Ø125mm, 45°	-0,48	1,62	-2,12
AL125-90 in 1kg	AL125-90		elbow plastic, Ø125mm, 90°	2,07	3,52	-1,4
KLV25-90 in 1kg	KLV25-90		elbow vertical plastic, 220x55mm, 90°	1,55	2,74	-1,21
KLD25-100 in 1kg	KLD25-100		elbow with diameter plastic, 220x55mm, Ø100mm	0,59	2,46	-1,89
KLD25-125 in 1kg	KLD25-125		elbow with diameter plastic, 220x55mm, Ø100mm	0,59	2,5	-1,93
KFV25 in 1kg	KFV25		flange flat duct joint with valve, plastic, 110x55mm	2,01	3,56	-1,57
KFS25 in 1kg	KFS25		flange flat duct joint, plastic, 110x55mm	0,89	3,21	-1,33
KF25 in 1kg	KF25		flange plastic, 110x55mm	1,63	3,21	-1,6
KFF25 in 1kg	KFF25		plastic flat connection flange, 110x55mm	2,49	3,34	-0,87
KT25 in 1kg	KT25		t-joint plastic, 220x55-220x55mm	0,72	1,52	-0,8
AT125 in 1kg	AT125		t-joint plastic, Ø125-125mm	1,50	2,81	-1,33
KSD25-125 in 1kg	KSD25-125		transition joint to the circular duct plastic, 220x55mm, Ø125mm	0,42	2,28	-1,8
KV25 in 1kg	KV25		valve plastic, 220x55mm	1,77	2,96	1,2
Ø150						
AP150-100 in 1kg	AP150-100		adapter plastic, Ø150-100mm	1,83	3,29	-1,48
AP150-125 in 1kg	AP150-125		adapter plastic, Ø150-100mm	1,55	3,4	-1,88
AS150 in 1kg	AS150		circular duct joint plastic, Ø150mm	0,35	3,34	-2,01
AV150 in 1kg	AV150		circular duct joint with valve plastic, Ø150mm	2,19	3,65	-1,48
AFS150 in 1kg	AFS150		circular flange plastic, Ø150mm	1,52	3,12	-1,62

AFV150 in 1kg	AFV150		circular flange with joint and valve plastic, Ø150mm	1,36	2,76	-1,41
KSF29 in 1kg	KSF29		duct connector plastic, 220x90mm	2,48	3,76	-1,29
KS29 in 1kg	KS29		duct connector plastic, 220x90mm	2,25	3,34	-1,1
KS29-25 in 1kg	KS29-25		duct connector plastic, 220x90mm-220x55mm	1,36	2,61	-1,26
KLH29-90 in 1kg	KLH29-90		elbow horizontal plastic, 220x90mm, 90°	-0,55	2,98	-3,55
AL150-45 in 1kg	AL150-45		elbow plastic, Ø150mm, 45°	0,40	1,51	-1,12
AL150-90 in 1kg	AL150-90		elbow plastic, Ø150mm, 90°	0,40	1,51	-1,12
KLV29-90 in 1kg	KLV29-90		elbow vertical plastic, 220x90mm, 90°	0,55	2,53	-2
KLD29-100 in 1kg	KLD29-100		elbow with diameter plastic, 220x90mm, Ø100mm	0,38	2,14	-1,78
KLD29-125 in 1kg	KLD29-125		elbow with diameter plastic, 220x90mm, Ø125mm	0,87	2,47	-1,6
KLD29-150 in 1kg	KLD29-150		elbow with diameter plastic, 220x90mm, Ø150mm	0,73	2,17	-1,45
KFV29 in 1kg	KFV29		flange flat duct joint with valve, plastic, 220x90mm	1,04	2,5	-1,47
KFS29 in 1kg	KFS29		flange flat duct joint, plastic, 220x90mm	1,06	2,52	-1,48
KFF29 in 1kg	KFF29		plastic flat connection flange, 220x90mm	1,50	2,68	-1,19
KT29 in 1kg	KT29		t-joint plastic, 220x90-220x90mm	1,53	2,9	-1,39
AT150 in 1kg	AT150		t-joint plastic, Ø150-150mm	1,69	2	-0,32
KSD29-150 in 1kg	KSD29-150		transition joint to the circular duct plastic, 220x90mm, Ø150mm	0,47	1,44	-0,98
KV29 in 1kg	KV29		valve plastic, 220x90mm	0,81	2,14	-1,33

MIN	1,44	1,24	-46,21%
	2,68	0,00	0,00%
MAX	3,86	-1,18	44,19%

Environmental impact range within the product group

The environmental impacts vary between product variants due to differences in geometry and product mass. All products are manufactured from similar plastic materials and produced using the same injection moulding technology, therefore the environmental impacts scale mainly with material consumption per kg of product.

The maximum deviation within the product group is -46.21% to +44.19% relative to the group average.

Identification of representative variants

To represent the full product group in the LCA model, the variants with the lowest and highest environmental impacts were identified:

- Minimum impact variant - product with the lowest material consumption and simplest geometry.
- Maximum impact variant - product with the highest material consumption and most complex geometry.

Both variants were modelled using the same datasets, system boundaries, and assumptions, ensuring consistent comparability across the product range.