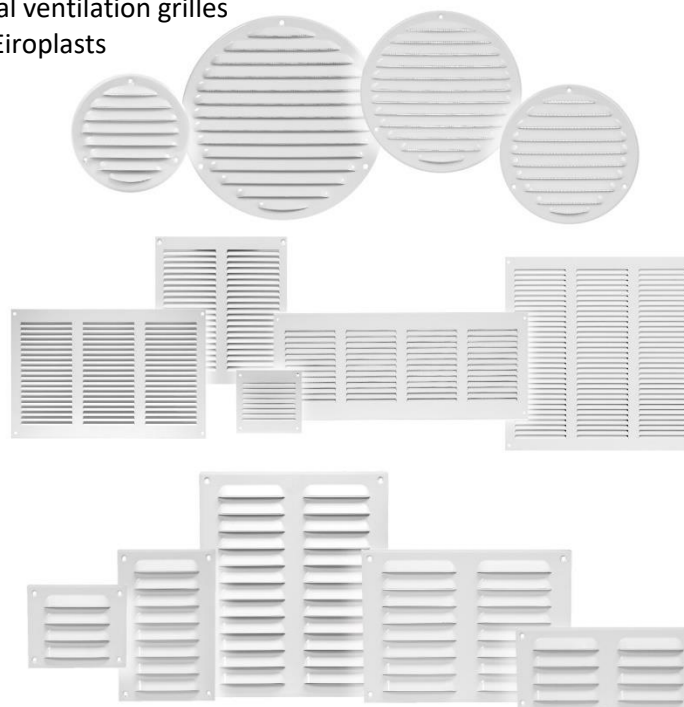




ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Metal ventilation grilles
SIA Eiroplasts



EPD HUB, HUB-7813

Published on 16.10.2026, last updated on 16.10.2026, valid until 15.10.2031

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.



Created with One Click LCA



GENERAL INFORMATION

MANUFACTURER

Manufacturer	SIA Eiroplasts
Address	32/6 Granīta Street, Acone, LV-2119, Latvia
Contact details	europlast@europlast.lv
Website	http://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: ☐ Internal verification ☒ External verification
EPD verifier	Haiha Nguyen as an authorized verifier for EPD Hub

This EPD is intended for business-to-business 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	Metal ventilation grilles
Additional labels	MR
Product reference	-
Place(s) of raw material origin	EU
Place of production	Latvia, Acone
Place(s) of installation and use	European countries (EU/EEA)
Period for data	01/01/2025 - 31/12/2025
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	+27,4% / -32,1%
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	36,4

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of metal ventilation grilles for supply and exhaust ventilation. Associated packaging is included in the life cycle assessment.
Declared unit mass	1 kg
Mass of packaging	0,1977 kg
GWP-fossil, A1-A3 (kgCO₂e)	4,99
GWP-total, A1-A3 (kgCO₂e)	4,89
Secondary material, inputs (%)	0
Total energy use, A1-A3 (kWh)	19,8
Net freshwater use, A1-A3 (m³)	0,19

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

EUROPLAST are a producer of ventilation systems and elements since 1998. Our clients can count on high quality, safe and functional products, unique design solutions and great conditions of cooperation.

PRODUCT DESCRIPTION

The EUROPLAST metal ventilation grille product group consists of grilles intended for air supply and extraction in residential and commercial ventilation systems. The products included in the EPD are MR100, MR125, MR160, MR200, MR14105, MR1419, MR26105, MR2619, MR2628, MR1010, MR2010, MR3010, MR4010 and MR5010. All products have the same principal function and are based on the same product concept. They are manufactured primarily from polymer-coated galvanized steel and are designed to provide reliable airflow through ventilation openings while maintaining a clean and discreet architectural appearance. Depending on the configuration, mounting springs or fastening clips are used to ensure secure installation and correct alignment. The products are available in different nominal dimensions and configurations. The main differences among the products included in the EPD are their dimensions, geometry and corresponding product mass and material consumption. These differences do not change the principal function or intended application of the products. The metal ventilation grilles are suitable for wall or ceiling installation and can be integrated into standard ventilation systems for both supply and exhaust air applications. Their durable metal construction and protective coating provide mechanical stability and corrosion resistance under normal indoor conditions.

For comparability within the product group, the environmental impacts of each product variant were calculated per 1 kg of product. For the A1-A3 product stage, the calculated GWP-total values range from 3.85 to 7.15 kg CO₂e per kg of product. The variation between individual products is mainly

associated with differences in product configuration and the resulting relative proportions of materials and manufacturing inputs per kilogram of finished product. Despite these differences, all products included in the group have the same intended use, principal function, main constituent materials and manufacturing technology. The product-specific calculations demonstrate the range of environmental performance within the declared product group.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	95,6	EU
Minerals	0	-
Fossil materials	4,4	EU
Bio-based materials	0	-

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	0,0604

1 kg of biogenic carbon is equivalent to 44/12 kg of CO₂.

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of metal ventilation grilles for supply and exhaust ventilation. Associated packaging is included in the life cycle assessment.
Mass per declared unit	1 kg
Functional unit	-
Reference service life	50 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	Recovery	Recycling
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/ demolition	Transport	Waste processing	Disposal	Reuse		

Not declared = ND.

A5 is not fully declared. Waste processing (from collection through to end-of-waste or final disposal) and full energy and biogenic carbon balancing are accounted for. Storage, product wastage, and installation into the building are excluded.

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 metal ventilation grilles are manufactured from a galvanized steel sheet. The production process includes cutting, punching, forming, and assembly of the grille components. Depending on the product specification, the grilles undergo surface finishing on the automated Ideal-Line, where the steel components are washed and pre-treated before polyester powder coating is applied using a robotic coating system. The coated products are subsequently cured in a diesel-heated oven to achieve the required coating performance and durability.

Where required, fiberglass mesh is manually attached to the rear side of the grille using a hot glue gun and hot-melt adhesive. Each product then undergoes a final quality inspection to ensure compliance with product specifications.

Small quantities of lubricating oil are used during manufacturing and equipment maintenance. Electricity from the grid and on-site photovoltaic generation is used to operate the production equipment - punching and cutting the steel, the automated powder coating line, and the packaging equipment. During production, steel off-cuts are collected separately and sent for recycling, while other production wastes are sorted and managed through appropriate waste treatment routes.

Each finished grille is individually packaged in a polyethylene bag and labelled with a EUROPLAST product sticker. The packaged products are then placed in corrugated cardboard boxes, stacked on wooden pallets, and secured for distribution using packaging tape and stretch film.

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.

A5 is not in scope. Only packaging waste is accounted for in this module.

The products are transported from the manufacturing facility to the construction site using representative transport scenarios based on the company's distribution profile. Installation of the metal ventilation grilles is carried out manually using standard installation practices for ventilation systems. No electricity or water is required during the installation process. Steel screws are used as ancillary installation materials where required to secure the grille to the wall, ceiling, or ventilation duct.

Packaging waste generated during installation, including polyethylene bags, corrugated cardboard boxes, wooden pallets, and stretch film, is collected separately and managed through appropriate recycling and waste treatment routes in accordance with local waste management practices. The installation process does not generate any product waste, as the grille is installed without cutting or modification.

PRODUCT USE AND MAINTENANCE (B1-B7)

This stage is not included in the scope.

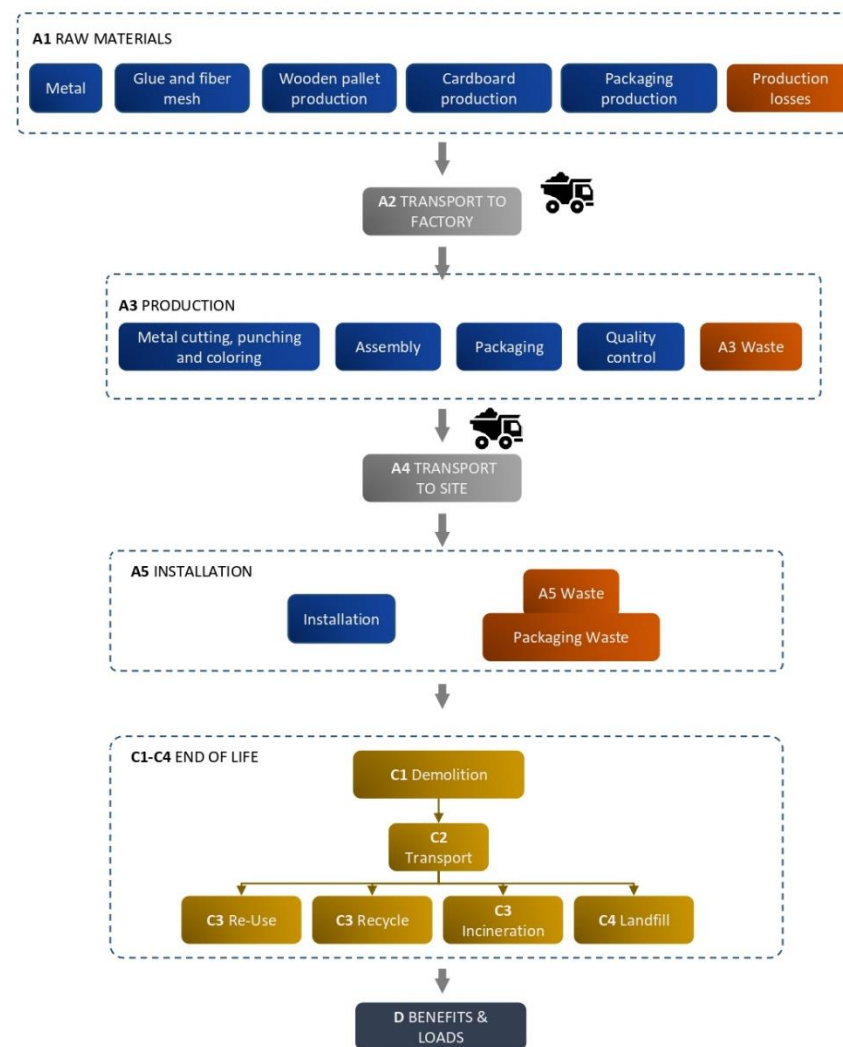
PRODUCT END OF LIFE (C1-C4, D)

At the end of its reference service life, the metal ventilation grille is assumed to be removed manually from the building without significant energy consumption (Module C1). The removed product is transported to an authorized waste treatment facility using representative transport scenarios (Module C2).

The steel components are separated and processed for recycling (Module C3), while any non-metallic components, where present, are directed to the most appropriate waste treatment route. Non-recyclable waste fractions are disposed of in accordance with European waste management practices (Module C4).

Module D includes the potential environmental benefits associated with the recovery and recycling of steel, which substitutes primary steel production, as well as benefits from energy recovery where applicable. These benefits are reported beyond the system boundary in accordance with EN 15804:2012+A2:2019/AC:2021.

MANUFACTURING PROCESS AND SYSTEM BOUNDARY



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

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

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

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

Data type	Allocation
Raw materials	No allocation
Packaging material	No allocation
Ancillary materials	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, %	+27,4% / -32,1%

For the A1-A3 product stage, the minimum GWP-fossil result is represented by MR2628, with 3.90 kg CO₂e per kg of product, while the maximum is represented by MR1010, with 7.32 kg CO₂e per kg of product. The average GWP-fossil result for the product group is 4.97 kg CO₂e per kg of product.

All products included in the group have the same principal function, intended use, main constituent materials and manufacturing technology. The configurations differ mainly in their dimensions and the resulting quantities and relative proportions of materials and manufacturing inputs. The variation in GWP-fossil between the minimum and maximum configurations is therefore primarily related to differences in material composition and manufacturing inputs per kilogram of finished product. As

the environmental results are expressed per 1 kg of product, differences in product size do not directly increase the declared impact; rather, the different material proportions and production inputs associated with each configuration result in the observed variation in GWP-fossil.

The grouping is considered representative, as the included products have similar material composition and are manufactured using the same production technology and processes. The GWP-fossil results range from 3.90 to 7.32 kg CO₂e/kg, corresponding to a variation of -21.5% to +47.3% relative to the average GWP-fossil result of 4.97 kg CO₂e/kg. The mass-

weighted average is therefore considered representative of the product group.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.5. 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	3,13E+00	2,31E-01	1,53E+00	4,89E+00	7,94E-02	2,78E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,68E-02	5,38E-02	2,28E-02	-4,15E+00
GWP – fossil	kg CO ₂ e	3,12E+00	2,31E-01	1,64E+00	4,99E+00	7,93E-02	1,55E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,68E-02	5,37E-02	9,10E-03	-4,06E+00
GWP – biogenic	kg CO ₂ e	7,33E-03	5,24E-05	-1,19E-01	-1,11E-01	3,24E-05	1,23E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,86E-06	1,02E-05	1,37E-02	-9,11E-02
GWP – LULUC	kg CO ₂ e	4,16E-03	1,03E-04	3,45E-03	7,71E-03	3,98E-05	1,12E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,49E-06	5,50E-06	5,45E-07	-4,16E-03
Ozone depletion pot.	kg CFC-11e	2,48E-07	3,35E-09	1,81E-04	1,81E-04	1,19E-09	6,30E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,44E-10	7,98E-10	2,85E-11	-3,10E-08
Acidification potential	mol H ⁺ e	8,00E-02	8,02E-04	5,56E-03	8,64E-02	3,25E-04	1,80E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,85E-05	4,80E-04	8,27E-06	-2,35E-02
EP-freshwater ²⁾	kg Pe	1,16E-04	2,50E-05	5,24E-04	6,66E-04	8,43E-06	2,26E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,82E-06	1,73E-06	9,10E-07	-4,19E-03
EP-marine	kg Ne	5,50E-03	2,65E-04	1,87E-03	7,64E-03	1,17E-04	1,98E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,93E-05	2,24E-04	3,36E-05	-4,30E-03
EP-terrestrial	mol Ne	3,17E-01	2,87E-03	1,25E-02	3,33E-01	1,27E-03	5,06E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,09E-04	2,45E-03	3,15E-05	-4,49E-02
POCP (“smog”) ³⁾	kg NMVOCe	1,50E-02	1,18E-03	7,53E-03	2,37E-02	4,70E-04	1,82E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,57E-05	7,32E-04	1,80E-05	-1,46E-02
ADP-minerals & metals ⁴⁾	kg Sbe	9,95E-03	6,60E-07	4,47E-06	9,96E-03	2,13E-07	4,84E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,81E-08	1,93E-08	1,52E-09	-1,18E-04
ADP-fossil resources	MJ	4,00E+01	3,29E+00	4,71E+01	9,04E+01	1,11E+00	7,15E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,40E-01	7,00E-01	2,41E-02	-4,73E+01
Water use ⁵⁾	m ³ e depr.	4,25E+00	1,92E-02	3,48E-01	4,62E+00	6,71E-03	1,97E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,40E-03	1,80E-03	6,92E-05	-1,71E+00

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.

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	3,05E+00	4,57E-02	2,77E+00	5,87E+00	1,71E-02	-1,77E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,33E-03	4,39E-03	-1,21E-01	-1,29E+01
Renew. PER as material	MJ	8,65E-02	0,00E+00	1,84E+00	1,93E+00	0,00E+00	-1,84E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-6,01E-02	-2,64E-02	9,16E-01
Total use of renew. PER	MJ	3,14E+00	4,57E-02	4,61E+00	7,79E+00	1,71E-02	-3,61E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,33E-03	-5,58E-02	-1,47E-01	-1,20E+01
Non-re. PER as energy	MJ	3,97E+01	3,29E+00	2,24E+01	6,53E+01	1,11E+00	-2,43E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,40E-01	7,00E-01	-9,59E-02	-4,73E+01
Non-re. PER as material	MJ	6,57E-01	0,00E+00	2,29E+00	2,94E+00	0,00E+00	-2,29E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-5,59E-01	-9,87E-02	1,34E+00
Total use of non-re. PER	MJ	4,03E+01	3,29E+00	2,46E+01	6,83E+01	1,11E+00	-4,72E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,40E-01	1,41E-01	-1,95E-01	-4,60E+01
Secondary materials	kg	0,00E+00	1,38E-03	7,09E-02	7,23E-02	5,01E-04	1,86E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,00E-04	2,90E-04	6,23E-06	5,48E-01
Renew. secondary fuels	MJ	0,00E+00	1,80E-05	3,96E-02	3,97E-02	5,80E-06	1,51E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,31E-06	7,59E-07	1,21E-07	-1,69E-03
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	5,47E-06	5,47E-06	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	1,63E-01	4,72E-04	2,62E-02	1,89E-01	1,63E-04	-5,32E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,44E-05	4,48E-05	2,40E-05	-3,87E-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	5,81E-01	2,10E-02	1,21E-01	7,24E-01	6,63E-03	3,34E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,53E-03	7,85E-04	2,88E-05	-4,04E+00
Non-hazardous waste	kg	9,99E+00	4,16E-01	3,59E+00	1,40E+01	1,31E-01	2,66E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,03E-02	1,14E-02	1,69E-02	-2,36E+01
Radioactive waste	kg	1,02E-04	6,60E-07	1,63E-04	2,66E-04	2,79E-07	6,01E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,81E-08	7,31E-08	3,64E-09	-5,00E-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	8,74E-06	0,00E+00	3,05E-05	3,92E-05	0,00E+00	9,40E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	8,53E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	4,27E-10	4,27E-10	0,00E+00	2,56E-20	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	4,24E-05	4,24E-05	0,00E+00	6,08E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,56E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,52E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+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	3,12E+00	2,31E-01	1,65E+00	5,00E+00	7,94E-02	1,55E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,68E-02	5,38E-02	9,10E-03	-4,06E+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 CO2e / kWh	0,69 kgCO2e/kWh
Alternative electricity sources considered	Photovoltaic electricity, 3 kWp slanted-roof multi-Si installation, mounted panel, Latvia, ecoinvent 3.
Electricity CO2e / kWh	0,0783 kgCO2e/kWh
Diesel data source and quality	Latvia, Ecoinvent 3.11
Diesel CO2e / kWh	0,87 kgCO2e/kg

Transport scenario documentation - A4

Scenario parameter	Value
Fuel type, consumption, and vehicle type	freight lorry, >32 metric ton, diesel, EURO 5
Average transport distance, km	516
Fuel type, consumption, and vehicle type	freight inland waterways, barge, diesel
Average transport distance, km	150
Capacity utilization (including empty return) %	75
Bulk density of transported products	386
Volume capacity utilization factor	<1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	The installation of the metal ventilation grilles is carried out manually and does not require electricity, fuel, or other external energy sources. Consequently, no energy consumption is associated with Module A5. • 0,00 kWh
Water use (m³)	The installation of the metal ventilation grilles is carried out manually and does not require water. Consequently, no water consumption is associated with Module A5. • 0 m³
Ancillary materials: type and mass (kg)	The installation of the metal ventilation grilles requires a small quantity of steel screws as ancillary installation materials. The consumption of screws is included in the life cycle assessment based on the declared installation scenario. No other ancillary materials are required for the installation of the product. • Steel screw: 0,02 kg
Waste materials: type and mass (kg)	Waste generated during installation consists primarily of packaging materials, including polyethylene film, corrugated cardboard, paper labels, wooden pallets, and minor off-cuts of installation materials. • Wood waste 0,077 kg • Plastic waste 0,078 kg • Paper waste 0,046 kg
Waste materials: output routes	Packaging waste generated during installation is collected separately and sent

	to the appropriate waste management routes. Polyethylene packaging is directed to plastic recycling where suitable facilities are available, while corrugated cardboard and wooden packaging are sent for material recycling. Any packaging materials that cannot be recycled are treated through energy recovery or disposed of in accordance with local waste management practices.	250 km to recycling facilities, materials directed to energy recovery are transported 100 km to incineration facilities, and residual waste destined for landfill is transported 50 km to a landfill site. These transport distances represent average European waste management practices and are applied consistently in the life cycle assessment.
Direct emissions (kg)	No direct emissions to air, water, or soil occur during the installation of the metal ventilation grilles. Consequently, no direct emissions are associated with Module A5. • 0,00 kg	

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	• Steel components recycling: 0,85kg • Steel components landfill: 0,15kg
Collection process: Mixed waste (kg)	• Solid waste: 0,016kg
Recovery: re-use (kg)	0 kg
Recovery: recycling (kg)	0,85kg
Recovery: energy recovery (kg)	0
Disposal (kg)	0,17kg
Scenario assumptions e.g. transportation (mode, km) & other	The end-of-life scenario assumes that the removed product is transported by road using a Euro 5 lorry (16-32 t). Materials sent for recycling are transported an average distance of

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 for EPD Hub Limited 16.10.2026



APPENDIX

Products included in the scope of the EPD

All products are manufactured from the same materials, using the same production technology and at the same manufacturing site, and are therefore 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).

		A1-A3 Product stage		
		Global Warming Potential total kg CO2e	Global Warming Potential fossil kg CO2e	Global Warming Potential biogenic kg CO2e
MR100	calculated to 1kg	5,36	5,46	-0,1
MR125		4,97	5,07	-0,11
MR160		4,69	4,82	-0,14
MR200		4,40	4,53	-0,14
MR14105		5,65	5,75	-0,11
MR1419		4,63	4,72	-0,1
MR26105		4,59	4,68	-0,1
MR2619		4,01	4,10	-0,09
MR2628		3,85	3,90	-0,06
MR1010		7,15	7,32	-0,18
MR2010		5,36	5,49	-0,13
MR3010		4,67	4,77	-0,11
MR4010		4,25	4,35	-0,1
MR5010		4,20	4,27	-0,08
Average		4,87	4,97	-0,11

MIN	3,90	27,4%
MAX	7,32	-32,1%

Data representativeness

Primary data was collected true direct measurements collected at the manufacturing site, and represents of the actual production processes, technology, and operating conditions. Secondary data where sourced from recognized LCA database, and selected to ensure geographical and technological consistency with the system under study.

Representativeness criteria

Representativeness of the product group is based on the following criteria:

- identical material composition,
- identical manufacturing process,
- production at the same manufacturing site.

Under these conditions, environmental impacts scale primarily with material consumption and processing requirements.

Representative, minimum and maximum cases

The following products were identified as representative of the product group:

- Representative – average design of all LCA.
- Minimum impact case.
- Maximum impact case.

These products represent the range of environmental performance within the product group, and were modelled using identical datasets, system boundaries, and assumptions.

Similarities and differences affecting GWP (A1-A3)

All product variants share the following similarities:

- same base material,
- same manufacturing process,
- same production site and energy supply,
- identical background datasets and modelling assumptions.

Differences between the products arise from:

- size of the product,
- packaging material mass distribution and material usage.