ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

MP3 srl – Lindab Group Fire Damper - WH25

MP3 srl a Lindab Group company

EPD HUB, HUB-6558

Published on 01.06.2026, last updated on 10.08.2026, valid until 31.05.2031

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	MP3 srl
Address	Via Alessandro Volta, 3, 35012 Camposampiero (PD), Italy
Contact details	certificate.it@lindab.com
Website	https://www.mp3-italia.it/

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-B7, and modules C1-C4, D
EPD author	Alvise Zanta, Lindab
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Vera Durao as an authorized verifier for EPD Hub

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	Manual or motorized fire damper WH25
Additional labels	All WH25 gamma
Product reference	WH25DSBM-125
Place(s) of raw material origin	Italy
Place of production	Camposampiero (PD), Italy
Place(s) of installation and use	All around European Union
Period for data	Calendar year 2025
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	-37,8 / 6,8
GTIN (Global Trade Item Number)	-
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	59,4

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of WH25DSBM-125 fire damper with electric actuator
Declared unit mass	1 kg
Mass of packaging	0,0308 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	3,7
GWP-total, A1-A3 ($kgCO_2e$)	3,52
Secondary material, inputs (%)	13,20
Secondary material, outputs (%)	64,60
Total energy use, A1-A3 (kWh)	13,20
Net freshwater use, A1-A3 (m^3)	0,05

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Lindab is a leading ventilation company in Europe, offering solutions for energy-efficient ventilation and a healthy indoor climate. The products are characterized by high quality, ease of installation and environmental thinking. In northern Europe, Lindab also offers an extensive range of roof, wall and rainwater systems.

FOR A BETTER CLIMATE

We want to create a better climate. Most of us spend most of our time indoors. The air we breathe, in our homes, at our workplaces and at school, affects our well-being. Since air is not visible, we do not always think about it. However, the indoor climate is crucial for how we feel, for our energy levels and whether we stay healthy. Lindab wants to contribute to the architecture and indoor climate of tomorrow. We also want a better climate for our planet. That is why we develop energy-efficient solutions for healthy indoor environments.

OUR VISION

We want to be the leading player in the area in which we are strongest – ventilation in Europe. We focus on air distribution and air diffusion. Since we offer high-quality products, we focus on Europe where demand for good ventilation is high, and we can offer superior availability. We specialize in those parts of the ventilation system where we are the strongest. We adapt our offering to the local market, with our core ventilation offering as the clear common denominator in all markets.

THE IMPORTANCE OF VENTILATION

About 90 percent of the global population breathes poor air every day. A common misconception is that outdoor air is more polluted due to emissions, smog, and harmful chemicals. In fact, indoor air in homes, schools, offices, and factories can be as much as five times more polluted. People nonetheless spend most of their life indoors. The most common causes of indoor air pollution are mould, chemicals in, for example, furniture and building materials, dust, radon, and cigarette smoke but, above all, airborne particles from combustion and industrial processes, which are so small they can enter the human bloodstream via the respiratory system. Today, air pollution is a risk factor in several of the world's most common causes of death, including heart disease, pneumonia, stroke, diabetes, and lung cancer. Ventilation is an efficient and convenient method to remove those indoor air pollutants.

SUSTAINABILITY PLAN

For us, sustainability is a way of thinking and working. This affects how we work with Lindab's strategy in all areas. Everything from the purchases we make, to the deliveries and the service we offer our customers. Lindab has three long-term, non-financial targets for the business, one that focuses on increasing our attractiveness as an employer, one for reducing our own carbon dioxide emissions, and one for a better working environment.

Read more about Lindab Groups sustainability work and non-financial targets on www.lindabgroup.com

PRODUCT DESCRIPTION

Fire dampers WH25 are devices for use in heating, ventilation and air-conditioning (HVAC) systems at fire boundaries to maintain fire compartmentation and protect escape routes in case of fire in the building. WH25 satisfies integrity, insulation and smoke leakage criteria for the declared time of fire resistance.
Tested and classified in accordance with EN 1366-2 and EN 13501-3 standards with 512000 Pa under-pression. Typical applications are in HVAC systems within walls, floors, and ceilings forming fire compartments in residential, commercial, or industrial buildings. It is suitable for use in mechanical ventilation systems where certified fire protection performance is required. Compact and easy to install, the damper provides reliable fire safety performance.
The WH25 fire damper has been tested according to EN 1366-2 and it is classified in accordance with EN 13501-3, achieving a fire resistance classification of EI 120 ve ho [VH] (i↔o) S. The product complies with the requirements of EN 15650 for fire dampers designing and EN 1366-2 for fire damper testing.
The reference service life (RSL) of the product is 25 years under normal operating conditions, assuming correct installation and regular maintenance in accordance with manufacturer instructions.
Further information and product specific GWP calculations see additional document which is presented for each product on https://www.mp3-italia.it/. The WH25 fire damper is available in diameters ranging from 100 mm to 315 mm (100, 125, 140, 150, 160, 180, 200, 224, 250, 280, 300, and 315 mm).

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	79	EU
Minerals	16	EU
Fossil materials	5	EU
Bio-based materials	0	EU

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	0,0189

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of LWH25DSBM-125 fire damper
Mass per declared unit	1 kg
Functional unit	Ensure compartmentation and fire and smoke resistance (EI 120 ve ho [VH] (i↔o) S) for one fire damper installed in a building, with classification according to EN 13501-2, compliant with EN 1366-2 testing and EN 1751 leakage performance requirements. The product is available in nominal diameters of 100, 125, 140, 150, 160, 180, 200, 224, 250, 280, 300 and 315 mm.
Reference service life	25 years

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		
×	×	×	×	×	ND	ND	ND	ND	ND	×	ND	×	×	×	×	×		
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 = 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 and electric power 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.

Raw materials are delivered by lorry from suppliers to the MP3 production facility. Transport distances from suppliers to the manufacturing site have been considered and calculated based on a weighted average approach, taking into account the distribution of raw material supply. Raw materials have been grouped by supplier's location in order to determine representative average transport distances. After raw materials quality control, all parts are assembled. Production is powered entirely by renewable electricity. Waste is negligible as there is no further processing of the product beyond assembly. Finished products are packaged according to size, using wooden pallets, cardboard.

A market-based approach is used in modelling the electricity mix used in the factory. The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

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 is assumed to be carried out by 16–32-ton Euro Class 5 lorries, with an average distance of 878 km based on delivery statistics. Installation losses are considered negligible, and packaging materials are included in the assessment. Energy (0.1 kWh) for installation is included in A5. Pallets, along with part of the cardboard packaging, may either be recycled or disposed of, depending on customer practices (in case of lack of information, the product is assumed to be incinerated).

PRODUCT USE AND MAINTENANCE (B1-B7)

During use, the actuator consumes 0.7 W in standby mode, with a 60-second test cycle every six months reaching 2.6 W only during the test cycle. The estimated service life of the fire damper installed in a building is 25 years. Environmental impacts are calculated with the European electricity mix, and no component replacement is considered.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

Energy consumption of 0.1 kWh for deconstruction is included in C1. The transport distance to the waste treatment facility is assumed to be 50 km, and transport is modelled by lorry in C2. Steel and brass components are assumed to be recycled in C3, while the remaining fractions are treated in C4. A recycling rate of 85% and a landfill rate of 15% are assumed, referring to the material composition of the product and representing the end-of-life treatment of materials in subsequent systems.

It is assumed that 70% of plastics and rubber are incinerated, with the remaining 30% being recycled. Benefits and loads from the energy recovery processes of packaging materials are reported in module D. For wooden and cardboard materials in module D it is assumed that the whole mass is to be incinerated.

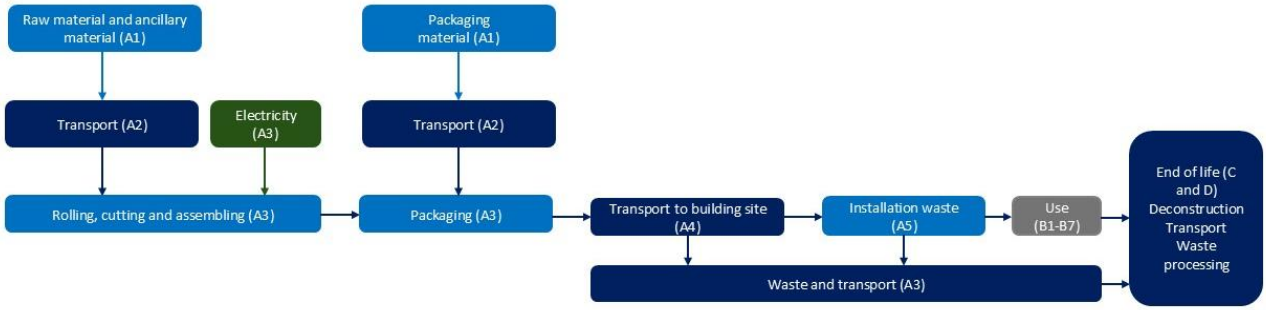
Regarding stainless steel the recycled percentage has been assumed to be 95%.

The end-of-life scenario is based on European average waste management data and reflects the most representative treatment routes for construction products of this type. The product is supposed to be transported to a waste treatment facility located 50 km away, using lorry transport as the default mode.

END OF LIFE SCENARIOS (A3, A5, C1-C4, D)

Name	Recycling	Incineration	Landfill	Source
Steel	80	0	20	EN 50693
Aluminum	70	0	30	EN 50693
Plastic	24	49	27	Plastic Europe, 2020
Cardboard	0	100	0	See Transport and installation (A4-A5)
Wood packaging	0	100	0	See Transport and installation (A4-A5)
Rubber	0	73	27	Plastic Europe, 2020
Stainless steel	95	0	5	World Stainless steel

SYSTEM DIAGAM



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 processed more than 1% of total mass or energy flow. 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.

The EPD covers a family of fire dampers grouped into categories. Categories were defined first by main dimensional ranges (diameters 100 to 315 mm) and then by selecting the product most sold within each range as the representative model, ensuring representativeness of current sales volumes. A cut-off criterion of 0.5% of product weight was applied, excluding negligible materials without affecting functionality.

For A4 transport, distances were estimated using the Top 10 customers, weighted by sales volumes. For A2 transport, the distances of raw materials were calculated as the distance from suppliers to the plant. Where direct process data was unavailable, energy consumption of the representative product was applied and scaled by mass or diameter.

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 made according to 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	Not applicable
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Based on a representative product
Variation in GWP-fossil for A1-A3, %	-37,8 / 6,8

This EPD is represented by the most sold article WH25DSBM-125. The products in the scope vary in sizes with duct dimensions from 100-315 mm. Production process, transportation, installation, demolition and waste treatment are similar for all products. GWP-fossil A1-A3 per kilo of product varies 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 v3.2.3. 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 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

World Steel, 2020

Plastics Europe, 2020

Eurostat:
https://ec.europa.eu/eurostat/databrowser/view/env_waspac__custom_8519259/default/table?lang=en

Bureau of International Recycling:

https://www.bir.org/members-area/world-mirrors/mirrors-ferrous/1000042195-world-steel-recycling-in-figures-january-december-2024-update#:~:text=On%20the%20positive%20side%2C%20the,its%20overseas%20recycled%20steel%20purchases

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_2e	3,54E+00	1,82E-02	-4,68E-02	3,52E+00	9,71E-02	1,07E-01	ND	ND	ND	ND	ND	2,36E-01	ND	3,90E-03	3,40E-02	9,34E-02	3,78E-03	-3,29E-01
GWP – fossil	kg CO_2e	3,66E+00	1,82E-02	2,21E-02	3,70E+00	9,70E-02	3,71E-02	ND	ND	ND	ND	ND	2,34E-01	ND	3,89E-03	3,40E-02	9,35E-02	3,78E-03	-3,20E-01
GWP – biogenic	kg CO_2e	-1,30E-01	4,13E-06	-6,92E-02	-1,99E-01	2,20E-05	6,94E-02	ND	ND	ND	ND	ND	7,03E-04	ND	1,59E-05	7,43E-06	-5,25E-05	-1,65E-06	-9,00E-03
GWP – LULUC	kg CO_2e	1,02E-02	8,13E-06	2,78E-04	1,05E-02	4,34E-05	7,38E-05	ND	ND	ND	ND	ND	4,39E-04	ND	8,42E-07	1,50E-05	2,15E-05	1,48E-06	-6,95E-05
Ozone depletion pot.	kg CFC-$_{11}$e	2,31E-08	2,67E-10	4,95E-10	2,38E-08	1,43E-09	5,77E-10	ND	ND	ND	ND	ND	1,48E-08	ND	8,97E-11	4,77E-10	2,01E-10	6,74E-11	-2,81E-09
Acidification potential	mol H^+e	3,38E-02	6,29E-05	1,31E-04	3,40E-02	3,31E-04	2,16E-04	ND	ND	ND	ND	ND	1,76E-03	ND	1,64E-05	1,13E-04	1,96E-04	1,61E-05	-1,25E-03
EP-freshwater[2)]	kg Pe	8,35E-04	1,74E-06	1,55E-05	8,52E-04	7,55E-06	3,98E-05	ND	ND	ND	ND	ND	1,39E-04	ND	8,66E-07	2,64E-06	9,58E-06	2,27E-07	-1,97E-04
EP-marine	kg Ne	3,50E-03	2,07E-05	4,66E-05	3,57E-03	1,09E-04	3,88E-05	ND	ND	ND	ND	ND	2,66E-04	ND	2,44E-06	3,68E-05	4,73E-05	1,75E-05	-2,69E-04
EP-terrestrial	mol Ne	8,09E-02	2,25E-04	4,32E-04	8,16E-02	1,18E-03	2,90E-04	ND	ND	ND	ND	ND	2,80E-03	ND	2,66E-05	4,00E-04	5,18E-04	6,54E-05	-2,93E-03
POCP ("smog")[3)]	kg NMVOCe	3,14E-02	9,24E-05	1,47E-04	3,16E-02	4,88E-04	9,82E-05	ND	ND	ND	ND	ND	1,01E-03	ND	1,14E-05	1,58E-04	1,50E-04	2,40E-05	-1,15E-03
ADP-minerals & metals[4)]	kg Sbe	2,46E-04	5,16E-08	1,22E-07	2,46E-04	2,71E-07	4,54E-07	ND	ND	ND	ND	ND	1,49E-05	ND	4,90E-08	1,11E-07	1,02E-06	4,96E-09	-3,25E-06
ADP-fossil resources	MJ	3,93E+01	2,62E-01	3,45E-01	3,99E+01	1,41E+00	8,17E-01	ND	ND	ND	ND	ND	2,91E+00	ND	6,24E-02	4,77E-01	2,16E-01	5,74E-02	-4,14E+00
Water use[5)]	m^3e depr.	2,90E+00	1,43E-03	4,44E-01	3,35E+00	6,95E-03	1,68E-02	ND	ND	ND	ND	ND	3,09E-01	ND	2,39E-03	2,22E-03	5,27E-03	2,42E-04	-7,52E-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.

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	1,03E+01	3,62E-03	2,00E+00	1,23E+01	1,93E-02	-2,85E-01	ND	ND	ND	ND	ND	9,29E+00	ND	2,71E-02	6,55E-03	3,24E-02	7,33E-04	-1,81E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	5,92E-01	5,92E-01	0,00E+00	-5,92E-01	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,20E-02
Total use of renew. PER	MJ	1,03E+01	3,62E-03	2,59E+00	1,29E+01	1,93E-02	-8,77E-01	ND	ND	ND	ND	ND	9,29E+00	ND	2,71E-02	6,55E-03	3,24E-02	7,33E-04	-9,95E-02
Non-re. PER as energy	MJ	3,48E+01	2,62E-01	3,26E-01	3,54E+01	1,41E+00	8,17E-01	ND	ND	ND	ND	ND	2,92E+00	ND	6,24E-02	4,77E-01	-1,18E+00	-4,52E-01	-4,14E+00
Non-re. PER as material	MJ	6,49E-01	0,00E+00	2,01E-02	6,69E-01	0,00E+00	-2,01E-02	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	-3,24E-01	-3,24E-01	9,82E-01
Total use of non-re. PER	MJ	3,54E+01	2,62E-01	3,46E-01	3,60E+01	1,41E+00	7,97E-01	ND	ND	ND	ND	ND	2,92E+00	ND	6,24E-02	4,77E-01	-1,50E+00	-7,76E-01	-3,16E+00
Secondary materials	kg	1,32E-01	1,10E-04	1,02E-02	1,42E-01	5,99E-04	1,40E-04	ND	ND	ND	ND	ND	4,14E-03	ND	1,60E-05	2,14E-04	2,82E-04	1,56E-05	1,68E-01
Renew. secondary fuels	MJ	9,26E-04	1,42E-06	1,05E-02	1,14E-02	7,61E-06	1,25E-06	ND	ND	ND	ND	ND	1,78E-04	ND	1,47E-07	2,72E-06	1,10E-05	1,49E-06	-2,51E-05
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	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	3,51E-02	3,81E-05	1,04E-02	4,55E-02	2,08E-04	5,75E-04	ND	ND	ND	ND	ND	7,40E-03	ND	7,54E-05	6,36E-05	1,06E-04	1,01E-05	-1,38E-03

6) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	4,20E-02	1,15E-03	1,81E-03	4,50E-02	2,39E-03	2,05E-03	ND	ND	ND	ND	ND	3,08E-02	ND	1,48E-04	8,31E-04	2,38E-03	7,41E-05	-8,85E-02
Non-hazardous waste	kg	2,74E+00	2,25E-02	4,26E-02	2,81E+00	4,41E-02	2,28E-01	ND	ND	ND	ND	ND	7,26E-01	ND	4,40E-03	1,56E-02	7,66E-02	2,64E-01	-1,27E+00
Radioactive waste	kg	1,45E-03	5,39E-08	8,67E-07	1,46E-03	3,00E-07	5,54E-06	ND	ND	ND	ND	ND	4,87E-06	ND	1,23E-07	9,51E-08	1,94E-07	1,11E-08	1,78E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	6,11E-11	0,00E+00	0,00E+00	6,11E-11	0,00E+00	1,50E-02	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	6,46E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	3,20E-19	0,00E+00	0,00E+00	3,20E-19	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	0,00E+00	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	3,60E-02	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	3,83E-01	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	1,50E-02	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	1,61E-01	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	2,10E-02	ND	ND	ND	ND	ND	0,00E+00	ND	0,00E+00	0,00E+00	2,22E-01	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_2e	3,67E+00	1,82E-02	2,24E-02	3,71E+00	9,70E-02	3,72E-02	ND	ND	ND	ND	ND	2,35E-01	ND	3,89E-03	3,40E-02	9,35E-02	3,78E-03	-3,20E-01

7) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterization 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 characterization factor for biogenic CO2 is set to zero.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Electricity production, hydro, reservoir, alpine region, Norway, Ecoinvent, 0.0065 kgCO2e/kWh
Electricity CO2e / kWh per source	0.0061
District heating data source and quality	-
District heating CO2e / kWh	0

Transport scenario documentation A4

Scenario parameter	Value
Fuel type, consumption, and vehicle type. Eg, electric truck, diesel powered truck	EURO5, truck 16-32 metric ton, diesel, 0,00441 l/tkm Transport, freight.
Average transport distance, km	Truck 878 km
Capacity utilization (including empty return) %	-
Bulk density of transported products (kg/m3)	-
Volume capacity utilization factor	1

Installation scenario documentation A5

Scenario information	Value
Ancillary materials for installation (specified by material) / kg or other units as appropriate	0
Water use / m³	0
Other resources use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	Market group for electricity, low voltage, Ecoinvent, 0.1 kWh
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	0
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	EoL Cardboard packaging, 0,0107 kg Re-use of Wooden pallets, 0,0200 kg
Direct emissions to ambient air, soil and water / kg	0

Use stages scenario documentation - B6-B7 Use of energy and use of water

Scenario information	Value
Ancillary materials specified by material / kg or units as appropriate	0
Net freshwater consumption / m^3	0
Type of energy carrier, e.g., electricity, natural gas, district heating / kWh	Electricity mix used is a weighted average of sales per country
Power output of equipment / kW	0,003
Characteristic performance, e.g., energy efficiency, emissions, variation of performance with capacity utilization, etc.	0
Further assumptions for scenario development, e.g., frequency and period of use, number of occupants	0

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	1,00
Collection process – kg collected with mixed waste	0,00
Recovery process – kg for re-use	0,00
Recovery process – kg for recycling	0,646
Recovery process – kg for energy recovery	0,026
Disposal (total) – kg for final deposition	0,328
Scenario assumptions e.g. transportation	Transported 50 km by lorry

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 is filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub cannot 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

Vera Durao as an authorized verifier for EPD Hub Limited 01.06.2026

APPENDIX 1

The table below presents climate impact for modules A1-A3 (Cradle to gate) for all dimensions of WH25, the analysis has been made just for the reported diameters. For the missing diameters (140, 180, 224 and 280) is possible to extrapolate the GWP-total impact value taking the value from the next diameter.

Impact category		Unit				
Product dimension		mm	100	**125**	150	160
Product weight		kg	2,96	**3,31**	3,64	3,65
EN 15804+A2, E.F. 3.1.	GWP-total	kg CO_2e	11,096	**11,641**	12,105	12,125
	GWP-fossil	kg CO_2e	11,718	**12,236**	12,832	12,892
	GWP-biogenic	kg CO2e	-0,624	**-0,658**	-0,767	-0,789
	GWP-luluc	kg CO_2e	0,031	**0,035**	0,038	0,038
	GWP-GHG	kg CO_2e	11,718	**12,269**	12,868	12,928
Scaling factor	GWP-fossil		0,95	**1,00**	1,04	1,04
Scaling factor	GWP-GHG		0,96	**1,00**	1,05	1,05

Product dimension		mm	200	250	300	315
Product weight		kg	4,52	5,55	6,17	7,40
EN 15804+A2, E.F. 3.1.	GWP-total	kg CO_2e	12,921	14,039	14,865	15,538
	GWP-fossil	kg CO_2e	13,870	15,093	16,345	17,018
	GWP-biogenic	kg CO2e	-0,976	-1,115	-1,517	-1,591
	GWP-luluc	kg CO_2e	0,044	0,051	0,059	0,062
	GWP-GHG	kg CO_2e	13,915	15,149	16,407	17,092
Scaling factor	GWP-fossil		1,11	1,21	1,28	1,33
Scaling factor	GWP-GHG		1,13	1,23	1,34	1,39