

Environmental Product Declaration

In accordance with ISO14025:2006 and EN15804:2012+A2:2019

Owner of the declaration

Airvent Légtechnikai Zrt.

Product name

Comissioning boxes

Declared unit

1 pc

Product category /PCR

CEN Standard EN 15804:2012+A2:2019 serves as core PCR NPCR 030:2021 Part B for ventilation components Program holder and publisher

The Norwegian EPD foundation

Declaration number

NEPD-9469-9143

Registration Number

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Issue date 28.03.2025

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28.03.2030



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General information

Product

Commissioning Boxes (represented by TK-250-200)

Program holder

The Norwegian EPD Foundation

Post Box 5250 Majorstuen, 0303 Oslo, Norway Phone: +47 23 08 80 00 *E-mail*: post@epd-norge.no

Declaration Number

NEPD-9469-9143

This declaration is based on Product Category Rules

CEN Standard EN 15804:2012+A2:2019 serves as core PCR NPCR 030:2021 Part B for ventilation components

Statements

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidences.

Declared unit

1 pc TK-250-200

Declared unit with option

A1-A3, A4, A5, C1, C2, C3, C4, D

Functional unit

Not relevant. Use phase not included.

Verification

Independent verification of the declaration and data, according to ISO14025:2010





Owner of the declaration

Airvent Légtechnikai Zrt

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Manufacturer

Airvent Légtechnikai Zrt

6000 Kecskemét, Belsőnyír 150, Hungary *E-mail*: avkecskemet@airvent.hu *Phone*: +36 30 395 3011

Place of production

Airvent Légtechnikai Zrt.

6000 Kecskemét, Belsőnyír 150, Hungary

Management system

ISO 9001, ISO 14001 and ISO 50001

Organisation No.

556478-8428

Issue date

28.03.2025

Valid to

28.03.2030

Year of study

2023-2024

Comparability

EPD of construction products may not be able to compare if they do not comply with EN 15804 and are seen in a building context.

The EPD has been worked out by

Kaspars Zudrags, BM Certification SIA

Ving

Silvia Vilčeková, SILCERT Ltd Independent verifier approved by EPD Norway

Approved

Manager of EPD Norway

Manufacturer – Airvent

We develop and manufacture technically advanced products for ventilation and air handling systems, prioritizing air quality, performance, and sustainable engineering



40 years of experience in the field of ventilation.



Expertise in well-designed, streamlined ventilation products and solutions, offering high performance, functionality and build quality.



In our 12,000 sqm production facility, we manufacture over 500,000 products on an annual basis.



We are committed to develop innovative solutions that are energy-efficient, healthy, and environmentally friendly.



Towards a greener future

Since 2004, Airvent Zrt. has operated a certified ISO 14001 *Environmental Management System*, with sustainability and environmental protection being key considerations in our developments. As a responsible company, energy-efficient system solutions have always been a top priority in our expansions. In line with this approach, we equipped our new *Competence Center* building in 2022 with a 50 kWp solar power system, and by the end of 2024, we will install an additional 100 kWp solar system on the roofs of our production halls. With this development, we will generate 22% of our electricity needs in-house. We also monitor our electricity consumption online with 25 sub-meters, allowing us to immediately address any wastage and ensure that our energy usage is always as optimal as possible.

Our efforts

We extend our environmentally friendly efforts to product delivery as well. We send over a hundred trucks annually to our affiliate in Sweden. Previously, these trucks drove across Europe, but we now use intermodal transport, with 75 percent of the journey being made by rail.

One of the focuses of our product development is to increase the use of sustainable materials in our products and processes while minimizing environmental impact, all the while ensuring we deliver flawless products to our customers with consistent quality. By transitioning to a new insulating material made from recycled materials in production, we are able to meet all three of these criteria



Product – Airvent commissioning boxes



TK-250-200

Commissioning boxes



Product description

Our commissioning boxes are primarily manufactured from galvanized steel and are available in various sizes and forms, tailored to different applications. The production methods and materials across these diffusers are largely consistent. This EPD provides an average environmental performance for our product range, as outlined below in the table *Included products and multiplication factors*.

The Life Cycle Assessment (LCA) is based on data specific to the representative product, TK-250-200. While TK is our most common commissioning box, the 250-200 size represents the average sales volume within the product group for 2023. Its typical material composition and production impact make it a reliable basis for assessing the environmental performance of the entire commissioning box product family.

Product specification

Materials	kg	%
Steel	5.06	94.4
Polypropylene terephthalate	0.30	5.6
TOTAL	5.36	
Packaging – corrugated board	0.62	

Description and function

TK is a compact commissioning box for airflow regulation with supply air diffusers. The product is designed for ceiling installation and ideal for flush mounting in suspended (false) ceilings due to its low construction height. The low build height is possible by the internal socket design of the diffuser connection.

The TK features a supply air distribution plate and a removable damper module for commissioning and measuring of the airflow. The damper module is equipped with a measuring flange with hoses for precise measurement of the airflow and the damper blade is fitted with adjustment cords for easier commissioning and for securing the damper to the commissioned airflow.

The damper module is removable which enables easy access when cleaning the air ducts. When the product is installed according to requirements, the cords also allow for simplified cleaning during service intervals and provides an efficient safety measure when resetting the damper to its commissioned setting after maintenance.

Sta	nd:	ard	sizes
Sta	HU	สเน	SIZES

1-step	2-step
TK-125-100	TK-160-100
TK-160-125	TK-200-125
TK-200-160	TK-250-160
TK-250-200	TK-315-200
TK-315-250	TK-400-250
TK-400-315	

Airflow range

50 - 2520 m³/h (14 - 700 l/s)

Materials

Casing, distribution plate and flanged spigot from galvanized sheet steel with EPDM rubber gasket. Washable surface coated insulation from 100% recycled, non-allergenic, hydrophobic PET material. Damper module of galvanized steel with cords of polyester. Measurement device of galvanized steel and aluminum pipe with silicone hose.

Market

Europe

Reference service life

>25 years

LCA: Calculation rules

Declared units

One commissioning box – TK-250-200 (mass 5.36 kg)

Cut-off criteria

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation

Allocation is done following EN 15804+A2:2019 guidelines, with incoming energy, water, and waste generated on-site being evenly distributed among all products through mass allocation. The environmental impacts of producing recycled materials are attributed to the primary product in which they are utilized. Additionally, the recycling process and transportation of materials are taken into account in this analysis.

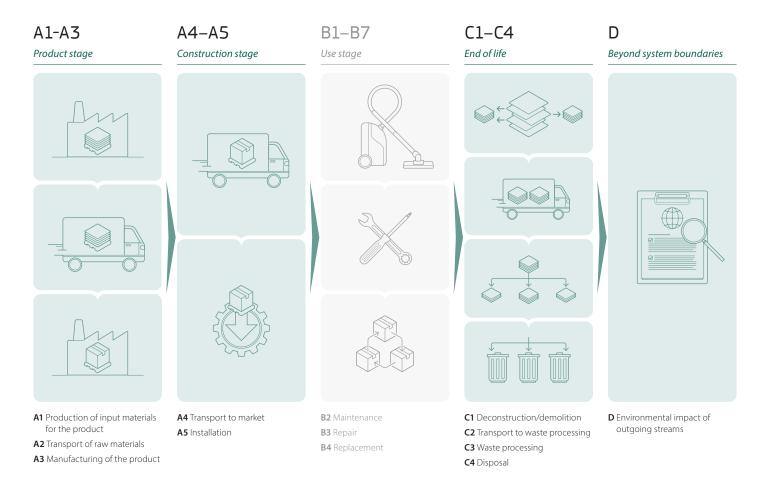
Data quality

The specific data on the product composition represent the production of the declared product and were collected for EPD development from June 1, 2023, to June 1, 2024.

Materials	Source	Data quality	Year
Metals	ecoinvent 3.10.1	Database	2024
Polypropylene terephthalate	ecoinvent 3.10.1	Database	2024
Corrugated board	ecoinvent 3.10.1	Database	2024

System boundary

Cradle to gate with options, modules C1–C4, module D (A1–A3 + A4 + A5 + C + D).



LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Energy sources of the electricity used in manufacturing processes of module A3 are modeled using the mix of electricity, the average 0,456kg CO2 eq./kWh. A4: Transport scenarios include EURO 6 truck transport for 307 km, sea ferry 158 km, train 747 km. A5. The energy consumption of A5 and C1 model is considered negligible and module A5 includes only packaging utilization. C1: No loads in C1 have been generated as manual dismantling. C2: Transport to waste treatment site after dismantling using EURO 6 truck average (100 km assumed). C3: Assumed as 90% of commissioning box is recycling. C4: Assumed as 10% of commissioning box materials are goes to the landfill. D: Modeled as 90% of commissioning box is recycling.

Transport from production place to assembly/user (A4)

Туре	Capacity utilisation (incl. return) [%]	Type of vehicle	Distance KM	Fuel/Energy consumption	Value [l/t]
Truck	36.7	lorry 16-32 metric ton, EURO6	307	0.043	13.20
Railway	50	rail	747	0.002	1.49
Boat	50	ship	158	0.030	4.74

Assembly (A5)

	Unit	Value
Packaging cardboard, recycled – 89%	kg	0.55
Packaging cardboard, landfild – 5.5%	m³	0.03
Packaging cardboard, incertation – 5.5%	kWh	0.03

End of Life (C1, C3, C4)

	Unit	Value
Treatment of waste reinforcement steel, recycling	kg	4.55
Treatment of waste plastic, municipal incineration	kg	0.30
Treatment of scrap steel, landfill	kg	0.51

Transport to waste processing (C2)

Туре	Capacity utilisation (incl. return) [%]	Type of vehicle	Distance KM	Fuel/Energy con- sumption	Value [l/t]
Truck	36.7	lorry 16-32 metric ton, EURO5	100	0.043	13.20

Benefits and loads beyond the system boundaries (D)

	Unit	Value
Substitution of steel production	kg	4.55
Substitution of paper production	kg	0.55
Substitution of heat production	MJ	8.29
Substitution of thermal energy production	MJ	1.45

LCA: Results

System boundaries

X=included, MID=module not declared, MIR=module not relevant

Pro	Product stage			mbly		Use stage End of life stage					Use stage				Beyond system boundaries	
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recycling-potential
A1	A2	А3	A4	A5	B1	B2	B3	B4	B5	В6	В7	C1	C2	C3	C4	D
X	Χ	Χ	Χ	Χ	MID	MID	MID	MID	MID	MID	MID	Χ	Χ	Χ	Χ	X

Core environmental impact indicators

Parameter	Unit	A1-A3	A4	A 5	C 1	C2	C 3	C4	D
GWP-total	kg CO ₂ -eq.	2.24E+01	7.12E-01	9.51E-01	0.00E+00	5.77E-02	9.96E-01	3.16E-03	-7.61E+00
GWP-fossil	kg CO ₂ -eq.	2.33E+01	7.11E-01	2.08E-02	0.00E+00	5.76E-02	9.96E-01	3.16E-03	-7.72E+00
GWP-biogenic	kg CO ₂ -eq.	-8.56E-01	1.54E-04	8.56E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.03E-01
GWP-IuIAC	kg CO ₂ -eq.	4.36E-02	3.64E-04	1.49E-05	0.00E+00	2.58E-05	3.29E-05	1.80E-06	-1.42E-03
ODP	kg CFC11-eq.	4.80E-06	1.15E-08	1.83E-10	0.00E+00	8.51E-10	4.54E-09	9.14E-11	-3.17E-08
AP	mol H+ eq.	5.08E-01	6.26E-03	1.02E-04	0.00E+00	1.97E-04	2.72E-03	2.24E-05	-3.56E-02
EP-freshwater	kg P eq.	2.32E-03	8.14E-06	4.36E-06	0.00E+00	4.49E-06	1.02E-05	2.59E-07	-3.75E-03
EP-marine	kg N eq.	3.50E-02	1.86E-03	8.77E-05	0.00E+00	6.46E-05	1.28E-03	8.53E-06	-7.46E-03
EP-terrestrial	mol N eq.	2.01E+00	2.05E-02	3.05E-04	0.00E+00	7.03E-04	1.38E-02	9.32E-05	-8.15E-02
POCP	kg NMVOC eq.	8.74E-02	6.43E-03	1.18E-04	0.00E+00	2.90E-04	4.07E-03	3.34E-05	-2.75E-02
ADP-minerals&metals*	kg Sb eq.	1.36E-03	1.90E-06	1.49E-07	0.00E+00	1.61E-07	1.49E-07	5.01E-09	-7.48E-05
ADP-fossil*	MJ	3.10E+02	9.44E+00	2.15E-01	0.00E+00	8.37E-01	3.79E+00	7.75E-02	-7.88E+01
WDP*	m³	1.04E+01	5.92E-02	5.39E-03	0.00E+00	4.13E-03	5.61E-02	2.23E-04	-1.35E+00

GWP-total: Global Warming Potential; GWP-fossil: Global Warming Potential fossil fuels; GWP-biogenic: Global Warming Potential biogenic; GWP-LULUC: Global Warming Potential land use and land use change; ODP: Depletion potential of the stratospheric ozone layer; AP: Acidification potential, Accumulated Exceedance; EP-freshwater: Eutrophication potential, fraction of nutrients reaching freshwater end compartment; See "additional requirements" for indicator given as PO4 eq. EP-marine: Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-terrestial: Eutrophication potential, Accumulated Exceedance; POCP: Formation potential of tropospheric ozone; ADP-M&M: Abiotic depletion potential for non-fossil resources (minerals and metals); ADP-fossil: Abiotic depletion potential for fossil resources; WDP: Water deprivation potential, deprivation weighted water counsumption

Reading example: $9.0 \text{ E}-03 = 9.0*10^{-3} = 0.009$

Resource use

Parameter	Unit	A1-A3	A4	A5	C 1	C2	C3	C4	D
RPEE	MJ	2.52E+01	2.37E-01	-9.98E+00	0.00E+00	1.15E-02	2.86E-02	7.48E-04	-9.29E+00
RPEM	MJ	8.46E+00	0.00E+00	-8.46E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.00E-02
TPE	MJ	3.36E+01	2.37E-01	-1.84E+01	0.00E+00	1.15E-02	2.86E-02	7.48E-04	-9.25E+00
NRPE	MJ	3.04E+02	9.44E+00	2.15E-01	0.00E+00	8.37E-01	-7.12E+00	7.75E-02	-8.97E+01
NRPM	MJ	6.92E+00	0.00E+00	-2.60E-02	0.00E+00	0.00E+00	-6.89E+00	0.00E+00	1.09E+01
TRPE	MJ	3.11E+02	9.44E+00	1.89E-01	0.00E+00	8.37E-01	-1.40E+01	7.75E-02	-7.88E+01
SM	kg	1.90E+00	7.15E-03	3.49E-04	0.00E+00	3.56E-04	1.66E-03	1.95E-05	4.26E+00
RSF	MJ	6.41E-02	4.59E-05	1.97E-06	0.00E+00	4.52E-06	7.81E-06	4.03E-07	-6.37E-04
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
W	m³	2.46E-01	1.53E-03	-1.97E-05	0.00E+00	1.24E-04	9.70E-04	8.05E-05	-2.25E-02

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSF Use of non renewable secondary fuels; W Use of net fresh water

End of life – Waste

Parameter	Unit	A1-A3	A4	A5	C 1	C2	C3	C4	D
HW	kg	6.59E+00	2.37E-02	2.27E-03	0.00E+00	1.42E-03	1.63E-02	8.56E-05	-2.59E+00
NHW	kg	5.31E+01	4.31E-01	2.46E-01	0.00E+00	2.62E-02	3.87E-01	1.96E-03	-2.13E+01
RW	kg	6.40E-04	4.08E-06	1.59E-07	0.00E+00	1.81E-07	4.62E-07	1.21E-08	4.94E-05

HW Hazardous waste disposed; NHW Non hazardous waste disposed; RW Radioactive waste disposed

End of life – output flow

Parameter	Unit	A1-A3	A 4	A5	C 1	C2	C3	C4	D
CR	kg	0.00E+00	0.00E+00	5.52E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR	kg	7.09E-01	0.00E+00	3.41E-02	0.00E+00	0.00E+00	4.55E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	3.51E-01	0.00E+00	0.00E+00	3.00E-01	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	5.30E-02	0.00E+00	0.00E+00	1.40E+00	0.00E+00	0.00E+00
ETE	MJ	0.00E+00	0.00E+00	2.98E-01	0.00E+00	0.00E+00	7.90E+00	0.00E+00	0.00E+00

 ${\sf CR\,Components\,for\,reuse;\,MR\,Materials\,for\,recycling;\,MER\,Materials\,for\,energy\,recovery;\,EEE\,Exported\,electric\,energy;\,ETE\,Exported\,thermal\,energy}}$

Information describing the biogenic carbon content at the factory gate

Biogenic carbon content	Unit	Value
Biogenic carbon content in product	kg C	0
Biogenic carbon content in the accompanying packaging	kg C	0,25

Additional requirements

Greenhous gas emission from the use of electricity in the manufacturing phase

National production mix from import, low woltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing prosess (A3).

Electricity mix	Data source	Amount	Unit
Electricity production, hard coal	ecoinvent 3.10.1	1.1	g CO ₂ eq./kWh
Electricity production, nuclear, pressure water reactor	ecoinvent 3.10.1	0.0071	g CO ₂ eq./kWh
Electricity production, photovoltaic	ecoinvent 3.10.1	0.0833	g CO ₂ eq./kWh
Electricity production, hydro, run-of-river	ecoinvent 3.10.1	0.0044	g CO ₂ eq./kWh

Additional environmental impact indicators required in NPCR Part A for construction products

In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantanious oxidation. GWP-IOBC is also reffered to as GWP-GHG in context to Swedish public procurement legislation.

Indicator	Unit	A1-A3	A4	A5	C 1	C2	C3	C4	D
GWP-IOBC	kg CO ₂ eq.	2.33E+01	7.11E-01	2.08E-02	0.00E+00	5.77E-02	9.96E-01	3.16E-03	-7.72E+00

GWP-IOBC Global warming potential calculated according to the principle of instantanious oxidation.

Dangerous substances

The product contains no substances given by the REACH Candidate list or the Norwegian priority list

Indoor environment

The product meets the requirements for low emissions.

Included products and multiplication factors

The multiplication factors in the table below can be used to scale LCA data for another product or size.

Name	Factor
AL AL-100	
BRL BRL-100 BRL-125 BRL-160 BRL-200 BRL-250	0,65
DLKR DLKR-200x100 DLKR-300x100 DLKR-400x100 DLKR-500x100 DLKR-600x100 DLKR-300x150 DLKR-400x150 DLKR-500x150 DLKR-600x150 DLKR-600x150 DLKR-600x150 DLKR-600x200 DLKR-500x200 DLKR-600x200	0,78 0,91 1,23 1,42 0,93 1,36 1,55 1,77 1,38 2,00
FK FK-200-160. FK-250-200. FK-315-250. FK-400-315	1,02 1,44
FLM FLM-100-100. FLM-125-125. FLM-160-125. FLM-200-160. FLM-200-200 FLM-250-200. FLM-250-250. FLM-315-250. FLM-315-315. FLM-400-400.	0,33 0,44 0,51 0,57 0,66 0,87 1,04 1,19

Name	Factor
FLKR	
FLKR-200x100	0,50
FLKR-300x100	,
FLKR-400x100	
FLKR-500x100	1,23
FLKR-600x100	1,42
FLKR-300x150	0,93
FLKR-400x150	1,36
FLKR-500x150	1,55
FLKR-600x150	1,77
FLKR-400×200	,
FLKR-500x200	,
FLKR-600x200	2,20
RDS	
RDS-1-500	0,38
RDS-2-500	0,47
RDS-3-500	0,60
RDS-4-500	0,79
RDS-1-1000	0,71
RDS-2-1000	0,87
RDS-3-1000	1,08
RDS-4-1000	,
RDS-1-1250	
RDS-2-1250	,
RDS-3-1250	
RDS-4-1250	
RDS-1-1500	
RDS-2-1500	
RDS-3-1500	,
RDS-4-1500	
RDS-1-2000	
RDS-2-2000	,
RDS-3-2000	
RDS-4-2000	2,58

Name	Factor
TK TK-125-100. TK-160-125. TK-200-160.	0,52
TK-250-200	1,00
TK-315-250. TK-400-315 TK-160-100. TK-200-125. TK-250-160. TK-315-200. TK-400-250	0,47 0,63 0,88 1,27
TKN TKN-200-125 TKN-250-160 TKN-250-200	0,88
TLM TLM-100-100. TLM-125-125. TLM-160-125. TLM-200-160. TLM-200-200 TLM-250-200 TLM-250-250. TLM-315-250. TLM-315-315. TLM-400-400	0,33 0,44 0,51 0,57 0,66 0,87 1,04 1,19
TLS TLS-125-400 TLS-160-400 TLS-200-500 TLS-200-595 TLS-250-595 TLS-315-595	0,68 1,01 1,29 1,46

Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations

- Principles and procedures

ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines

EN 15804:2012+A2:2019 Sustainability of construction works - Environmental product declarations

- Core rules for the product category of construction products.

NPCR Part A Construction products and services. Ver. 2.0. March 2021, EPD-Norge. *NPCR 026 Part B* for Furniture. Ver. 2.0 March 2022, EPD-Norge.

LCA background report 10.10.2024.

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VERIFIED	ECO Portal	web	ECO Portal					

EPD for the best environmental decision



