

Owner: VELTEK Ventilation
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3rd PARTY VERIFIED

EPD

VERIFIED ENVIRONMENTAL PRODUCT DECLARATION | ISO 14025 & EN 15804



Owner of declaration

Veltek Ventilation
 Smedeholm 13A
 DK-2730 Herlev
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Issued:

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Valid to:

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Programme

EPD Danmark
www.epddanmark.dk



- Industry EPD
- Product EPD

Declared product(s)

The declared products are listed below

- SmallAir Handling Units (AHU) also called Ventilation Units (VU) or Bidirectional Ventilation Units (BVU) declared as NRVU's for duct connections with an airflow of 3000 m³/hr
- LargeAir Handling Units (AHU) also called Ventilation Units (VU) or Bidirectional Ventilation Units (BVU) declared as NRVU's for duct connections with an airflow of 15,000 m³/hr

In this document referred to as AHU's
 Number of declared datasets: 2

Production site

Various production sites, both in Denmark, Sweden, Italy, and Lithuania.

Products use

The companies within the industry association VELTEK Ventilation produce ventilation units primarily for the indoor climate in residential and non-residential such as industrial, and commercial construction. The main purpose of the ventilation units is as air controller used actively to improve the indoor climate which can help promote and increase safety, efficiency, well-being, and health of people in workplaces, institutions, and at home etc.

Product description:

This EPD is applicable for Ventilation Units (VU) in form of Bidirectional Ventilation Unit (BVU) of the type "Non-Residential Ventilation Unit" (NRVU), for connection to duct systems. This means a unit which produces an airflow between indoors and outdoors, intended to replace utilised air by outdoor air in a building or part of a building, produced as either custom made or mass produced.

Declared/ functional unit

1 pc of ventilation unit

Year of data

2021, first version

Basis of calculation

This EPD is developed in accordance with the European standard EN 15804+A2.

Comparability

EPDs of construction products may not be comparable if they do not comply with the requirements in EN 15804. EPD data may not be comparable if the datasets used are not developed in accordance with EN 15804 and if the background systems are not based on the same database.

Validity

This EPD has been verified in accordance with ISO 14025 and is valid for 5 years from the date of issue.

Use

The intended use of an EPD is to communicate scientifically based environmental information for construction products, for the purpose of assessing the environmental performance of buildings.

EPD type

- Cradle-to-gate with modules C1-C4 and D
- Cradle-to-gate with options, modules C1-C4 and D
- Cradle-to-grave and module D
- Cradle-to-gate
- Cradle-to-gate with options

CEN standard EN 15804 serves as the core PCR

Independent verification of the declaration and data, according to EN ISO 14025

- internal
- external

Third party verifier:

Ninkie Bendtsen

Martha Katrine Sørensen
 EPD Danmark

Life cycle stages and modules (MND = module not declared)

Product		Construction process			Use								End of life				Beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport	Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Re-use, recovery and recycling potential	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X	

Product information

Product description

The BVUs are intended for use in HVAC (Heating, Ventilation and Air-Conditioning) systems for both residential and non-residential applications, as the key component in the HVAC-system responsible for the movement and conditioning of air to and from the conditioned space in the building.

The air flows (3.000 and 15.000 m³/h) have been selected in order to be representative for unit sizes often requested by the market. The units have been specified for Nordic climate regarding heating and cooling (which typically for heating mode are with an outdoor air temperature -12°C and a supply air temperature 22°C. In cooling mode typically with an outdoor air temperature 26°C and 60% RH and supply air temperature of 17°C, dimensioned incl. additional energy for condensation of water).

The main product components are shown in the table below.

Material	Small vent. Unit	Large vent. unit
ABS plastic	0.32%	0.25%
Aluminum	19.85%	20.28%
Battery	<0.01%	<0.01%
Brass	0.06%	0.07%
Cable	0.73%	0.42%
Copper	3.62%	1.96%
EG steel	0.04%	0.00%
EPDM gasket	0.15%	0.11%
Glass fiber	0.48%	1.41%
Glass wool	2.29%	2.59%
Glue	0.23%	0.05%
HDG steel	64.57%	61.71%
Mineral wool	2.46%	3.75%
Magnesium	0.02%	0.40%
Motor	1.37%	1.87%
MS polymer	0.30%	0.23%
Pamid	1.05%	1.86%
PC plastic	0.05%	0.01%
PCB plastic	0.13%	0.14%
PE plastic	0.01%	0.01%
PET plastic	0.02%	0.04%
Powder coating	0.01%	0.01%
PP plastic	0.11%	0.14%
PS plastic	0.44%	0.82%
PUR	0.14%	0.07%
PVC plastic	0.09%	0.11%
Rubber	0.09%	0.07%
Screw	0.28%	0.16%
Silicone	<0.01%	<0.01%
Stainless steel	0.98%	0.65%
TPE (rubber)	0.02%	0.02%
Wood	0.00%	0.06%
Zinc	0.01%	0.59%
Total	100.00%	100.00%

The packaging composition is listed in the table below.

Material	Small vent. unit	Large vent. unit
Cardboard	7.09%	6.41%
Plastic	11.00%	13.56%
Wooden pallets	81.90%	80.03%

In contrast to the product definitions given in Ecodesign 1253, all parts needed for a fully functional unit are included in this EPD (Ecodesign definitions of an NRVU only covers casing, fans, HRS and filters if present).

The full equipping of the BVU in this EPD includes parts such as casing and frame (incl. insulation), exhaust and supply fans incl. motor and impeller, supply and exhaust filter (ePM1-60% + ePM10-60%), heat recovery (HRS), heating coil (HC), cooling coil (CC), controls, bypass if present, droplet eliminator, drip tray and condensation drain, control, sensors and cables including frequency converters and/or PM control if present, dampers on in and outlet if present and assembly parts, screws, sealant and sealing strips, locks and door hinges etc.

Representativity

This declaration, including data collection and the modelled foreground system including results, represents the production of ventilation units in Denmark. Data for LCA is based on annual averages to produce selected types of AHU's from the manufacturers AIRHEAT, EXHAUSTO A/S, IV - Søgren Aps, NB Ventilation, Nilan A/S, NKI, Systemair A/S, Unic Air, Venti A/S, Øland A/S in the industry association VELTEK Ventilation. Product specific data are based on average values collected in the year 2021. Background data are based on the GaBi LCA software and are less than 10 years old. Generally, the used background datasets are of high quality, and the majority of the datasets are only a couple of years old.

Hazardous substances

The AHU's do not contain substances listed in the "Candidate List of Substances of Very High Concern for authorisation"

(<http://echa.europa.eu/candidate-list-table>)

Essential characteristics

The AHU's are covered by technical specifications in the production standard: EN13053:2019, EN1886: 2007, EN 308:2022 and EN 1216:1998. For the EPD it follows EN 15804. Declaration of performance according to EU regulation 2009/125/EC - ecodesign requirements for

ventilation units is available for all declared product variations.

Further technical information can be obtained by contacting the manufacturer or on the manufacturers website listed at VELTEK Ventilation website:

<https://www.veltek.dk/medlemsliste/>

Pictures of products



Schematic drawing of a typical AHU

LCA background

Declared unit

The LCI and LCIA results in this EPD relates to 1 piece of AHU

Name	Small ventilation unit with airflow 3000 m ³ /hr	Large ventilation unit with airflow 15,000 m ³ /hr
Declared unit, pc.	1	1
Average weight	656.79	1710.14
Conversion factor to 1 kg	0.0015	0.0006

Functional unit

The functional unit is not defined as the use stages B1-B7 are not declared

Reference Service Life (RSL)

The lifetime of the AHU is 25 years.

PCR

This EPD is developed according to the core rules for the product category of construction products in EN 15804 version A2:2019.

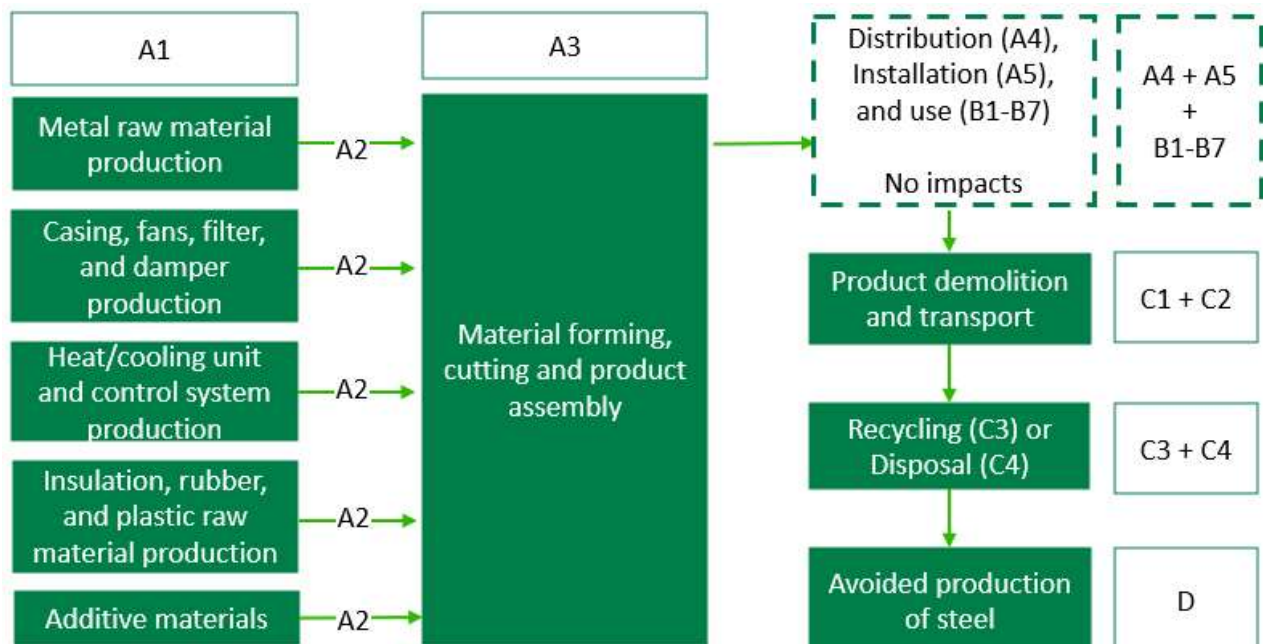
Guarantee of Origin – certificates

No guarantees of origin or certificated are used for green electricity or energy in the production phase in the foreground system.

Background system: For modelling energy production, the country specific residual mix is used, in accordance with the recommendations from EPD Denmark.

Flowdiagram

The process diagram below represents the life cycle of an AHU product from VELTEK Ventilations members.



System boundary

This EPD is based on a cradle-to-grave LCA with modules C1-C4 and D, in which 100 weight-% has been accounted for.

The general rules for the exclusion of inputs and outputs follows the requirements in EN 15804, 6.3.5, where the total of neglected input flows per module shall be a maximum of 5 % of energy usage and mass and 1 % of energy usage and mass for unit processes.

Product stage (A1-A3) includes:

- A1 – Extraction and processing of raw materials
- A2 – Transport to the production site
- A3 – Manufacturing processes

The steel, aluminium, and screw parts, as well as sealant/rubber, plastic, glue, and timber parts, are manufactured by suppliers. Fans, filters, dampers, motor/electronics, heating and cooling coil, as well as heat recovery system is provided as whole components, where smaller sub material parts have been accounted for individually in the model. All components are assembled on the manufacturing site.

Construction process stage (A4-A5) includes:

Installation on construction site is not included in this EPD.

Use stage (B1-B7) includes:

The use phase has not been included in this EPD.

End of Life (C1-C4) includes:

The ventilation units are assumed disposed of in Northern Europe. The ventilation units are assumed dismantled using hand tools (C1) and transported 50 km to a local recycling (C2).

The product is then dismantled in an industrial shredder assuming average recovery of materials (C3). The fluff sorted from the shredded metal is landfilled (C4).

Re-use, recovery and recycling potential (D) includes:

The recycled metals are credited an avoided production of primary steel, aluminium, copper, and other motor components.

LCA results

Small AHU's with airflow 3000 m³/hr

Small AHU's with airflow 3000 m³/hr

ENVIRONMENTAL EFFECTS PER PRODUKT PER PIECE							
Parameter	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	3,54E+03	0,00E+00	5,56E+00	3,25E+01	2,33E+00	-1,68E+03
GWP-fossil	[kg CO ₂ eq.]	3,52E+03	0,00E+00	5,50E+00	3,23E+01	2,37E+00	-1,68E+03
GWP-bio	[kg CO ₂ eq.]	1,07E+01	0,00E+00	2,31E-02	2,20E-01	-4,37E-02	5,47E-01
GWP-luluc	[kg CO ₂ eq.]	2,16E+00	0,00E+00	3,78E-02	6,42E-03	2,47E-03	-4,18E-01
ODP	[kg CFC 11 eq.]	3,86E-08	0,00E+00	5,51E-13	4,94E-10	4,16E-12	-1,47E-09
AP	[mol H ⁺ eq.]	1,40E+01	0,00E+00	6,63E-03	4,54E-02	1,10E-02	-6,47E+00
EP-fw	[kg P eq.]	3,15E-03	0,00E+00	2,00E-05	7,86E-05	2,63E-04	-7,23E-04
EP-mar	[kg N eq.]	2,25E+00	0,00E+00	2,20E-03	1,40E-02	2,68E-03	-9,40E-01
EP-ter	[mol N eq.]	2,47E+01	0,00E+00	2,63E-02	1,48E-01	2,94E-02	-9,71E+00
POCP	[kg NMVOC eq.]	7,20E+00	0,00E+00	5,76E-03	3,64E-02	8,30E-03	-3,09E+00
ADP-mm ¹	[kg Sb eq.]	1,11E-01	0,00E+00	5,66E-07	9,17E-06	1,97E-07	-6,81E-02
ADP-fos ¹	[MJ]	4,29E+04	0,00E+00	7,37E+01	4,99E+02	3,26E+01	-1,95E+04
WDP ¹	[m ³]	8,14E+02	0,00E+00	6,28E-02	1,62E+00	9,26E-02	-2,24E+02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-bio = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidification; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use						
Disclaimer	¹ The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.						

Small AHU's with airflow 3000 m³/hr

ADDITIONAL ENVIRONMENTAL EFFECTS PER PRODUKT PER PIECE							
Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PM	[Disease incidence]	1,75E-04	0,00E+00	4,41E-08	3,71E-07	1,25E-07	-6,60E-05
IRP ²	[kBq U235 eq.]	2,44E+02	0,00E+00	2,07E-02	8,83E+00	5,18E-02	-2,14E+02
ETP-fw ¹	[CTUe]	1,50E+04	0,00E+00	5,22E+01	1,71E+02	2,66E+01	-6,04E+03
HTP-c ¹	[CTUh]	1,48E-05	0,00E+00	1,08E-09	1,30E-08	1,96E-09	-7,02E-07
HTP-nc ¹	[CTUh]	5,89E-05	0,00E+00	5,83E-08	2,07E-07	1,94E-07	-1,96E-05
SQP ¹	-	1,72E+04	0,00E+00	3,12E+01	1,40E+02	4,08E+00	-1,81E+03
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)						
Disclaimers	¹ The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.						
	² 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.						

Small AHU's with airflow 3000 m³/hr

RESSOURCE CONSUMPTION PER PRODUKT PER PIECE							
Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	[MJ]	9,47E+03	0,00E+00	5,10E+00	2,08E+02	3,54E+00	-4,46E+03
PERM	[MJ]	3,32E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	9,81E+03	0,00E+00	5,10E+00	2,08E+02	3,54E+00	-4,46E+03
PENRE	[MJ]	4,22E+04	0,00E+00	7,39E+01	4,99E+02	3,26E+01	-1,95E+04
PENRM	[MJ]	7,81E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	4,30E+04	0,00E+00	7,39E+01	4,99E+02	3,26E+01	-1,95E+04
SM	[kg]	6,83E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	2,32E-22	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	2,73E-21	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m ³]	3,21E+01	0,00E+00	5,90E-03	1,35E-01	3,49E-03	-1,25E+01
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water						

Small AHU's with airflow 3000 m³/hr

WASTE CATEGORIES AND OUTPUT FLOWS PER PRODUKT PER PIECE							
Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	[kg]	8,06E-05	0,00E+00	3,91E-10	4,25E-08	3,72E-09	-7,97E-07
NHWD	[kg]	4,02E+02	0,00E+00	1,20E-02	4,61E-01	8,48E+01	-9,43E+01
RWD	[kg]	1,33E+00	0,00E+00	1,37E-04	6,63E-02	3,86E-04	-1,03E+00
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	1,64E+02	0,00E+00	0,00E+00	5,66E+02	0,00E+00	0,00E+00
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	1,75E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	[MJ]	8,81E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy						

Small AHU's with airflow 3000 m³/hr

BIOGENIC CARBON CONTENT PER PRODUKT PER PIECE		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	kg C	3,83E-02
Biogenic carbon content in accompanying packaging	kg C	9,06E+00

Large AHU's with airflow 15,000 m³/hr
Large AHU's with airflow 15,000 m³/hr

ENVIRONMENTAL EFFECTS PER PRODUKT PER PIECE							
Parameter	Unit	A1-A3	C1	C2	C3	C4	D
GWP-total	[kg CO ₂ eq.]	9,21E+03	0,00E+00	1,45E+01	8,13E+01	7,68E+00	-4,31E+03
GWP-fossil	[kg CO ₂ eq.]	9,18E+03	0,00E+00	1,43E+01	8,08E+01	7,81E+00	-4,31E+03
GWP-bio	[kg CO ₂ eq.]	3,05E+01	0,00E+00	6,02E-02	5,46E-01	-1,44E-01	1,06E+00
GWP-luluc	[kg CO ₂ eq.]	4,90E+00	0,00E+00	9,84E-02	1,60E-02	8,19E-03	-7,77E-01
ODP	[kg CFC 11 eq.]	5,19E-08	0,00E+00	1,43E-12	1,23E-09	1,37E-11	-3,60E-09
AP	[mol H ⁺ eq.]	3,57E+01	0,00E+00	1,73E-02	1,13E-01	3,65E-02	-1,54E+01
EP-fw	[kg P eq.]	7,59E-03	0,00E+00	5,22E-05	1,95E-04	8,62E-04	-1,72E-03
EP-mar	[kg N eq.]	5,86E+00	0,00E+00	5,73E-03	3,49E-02	8,86E-03	-2,38E+00
EP-ter	[mol N eq.]	6,54E+01	0,00E+00	6,83E-02	3,70E-01	9,72E-02	-2,47E+01
POCP	[kg NMVOC eq.]	1,88E+01	0,00E+00	1,50E-02	9,09E-02	2,74E-02	-7,79E+00
ADP-mm ¹	[kg Sb eq.]	2,04E-01	0,00E+00	1,47E-06	2,28E-05	6,49E-07	-1,05E-01
ADP-fos ¹	[MJ]	1,12E+05	0,00E+00	1,92E+02	1,24E+03	1,07E+02	-5,03E+04
WDP ¹	[m ³]	2,02E+03	0,00E+00	1,63E-01	4,11E+00	3,08E-01	-5,19E+02
Caption	GWP-total = Global Warming Potential - total; GWP-fossil = Global Warming Potential - fossil fuels; GWP-bio = Global Warming Potential - biogenic; GWP-luluc = Global Warming Potential - land use and land use change; ODP = Ozone Depletion; AP = Acidification; EP-freshwater = Eutrophication – aquatic freshwater; EP-marine = Eutrophication – aquatic marine; EP-terrestrial = Eutrophication – terrestrial; POCP = Photochemical zone formation; ADPm = Abiotic Depletion Potential – minerals and metals; ADPf = Abiotic Depletion Potential – fossil fuels; WDP = water use						
Disclaimer	¹ The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.						

Large AHU's with airflow 15,000 m³/hr

ADDITIONAL ENVIRONMENTAL EFFECTS PER PRODUKT PER PIECE							
Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PM	[Disease incidence]	4,68E-04	0,00E+00	1,15E-07	9,23E-07	4,12E-07	-1,60E-04
IRP ²	[kBq U235 eq.]	6,40E+02	0,00E+00	5,39E-02	2,19E+01	1,70E-01	-5,73E+02
ETP-fw ¹	[CTUe]	3,93E+04	0,00E+00	1,36E+02	4,23E+02	8,74E+01	-1,51E+04
HTP-c ¹	[CTUh]	2,68E-05	0,00E+00	2,80E-09	3,24E-08	6,47E-09	-1,78E-06
HTP-nc ¹	[CTUh]	1,43E-04	0,00E+00	1,52E-07	5,15E-07	6,40E-07	-4,92E-05
SQP ¹	-	4,39E+04	0,00E+00	8,11E+01	3,47E+02	1,35E+01	-3,66E+03
Caption	PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)						
Disclaimers	¹ The results of this environmental indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.						
	² 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.						

Large AHU's with airflow 15,000 m³/hr

RESSOURCE CONSUMPTION PER PRODUKT PER PIECE							
Parameter	Unit	A1-A3	C1	C2	C3	C4	D
PERE	[MJ]	2,45E+04	0,00E+00	1,33E+01	5,18E+02	1,17E+01	-1,16E+04
PERM	[MJ]	8,06E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	2,53E+04	0,00E+00	1,33E+01	5,18E+02	1,17E+01	-1,16E+04
PENRE	[MJ]	1,10E+05	0,00E+00	1,92E+02	1,24E+03	1,07E+02	-5,03E+04
PENRM	[MJ]	2,54E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	1,13E+05	0,00E+00	1,92E+02	1,24E+03	1,07E+02	-5,03E+04
SM	[kg]	1,65E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	1,91E-22	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	2,24E-21	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m ³]	8,18E+01	0,00E+00	1,53E-02	3,38E-01	1,16E-02	-3,19E+01
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water						

Large AHU's with airflow 15,000 m³/hr

WASTE CATEGORIES AND OUTPUT FLOWS PER PRODUKT PER PIECE							
Parameter	Unit	A1-A3	C1	C2	C3	C4	D
HWD	[kg]	1,85E-04	0,00E+00	1,02E-09	1,06E-07	1,22E-08	-1,93E-06
NHWD	[kg]	1,10E+03	0,00E+00	3,14E-02	1,21E+00	2,81E+02	-3,22E+02
RWD	[kg]	3,51E+00	0,00E+00	3,57E-04	1,64E-01	1,27E-03	-2,77E+00
CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	3,97E+02	0,00E+00	0,00E+00	1,41E+03	0,00E+00	0,00E+00
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	4,42E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EET	[MJ]	2,33E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy						

Large AHU's with airflow 15,000 m³/hr

BIOGENIC CARBON CONTENT PER PRODUKT PER PIECE		
Parameter	Unit	At the factory gate
Biogenic carbon content in product	kg C	7,92E-02
Biogenic carbon content in accompanying packaging	kg C	2,19E+01

Additional information

LCA interpretation

The results show that the production of steel and aluminum (A1) are the dominating process in most of the environmental impact categories and to some extent the corresponding avoided production of materials beyond the system boundary (D). This stems especially from the metal content that is costly to produce but which, even combined with the other sealant materials, can be recycled at the end-of-life. The packaging materials (pallets and cardboard) contribute to a biogenic CO₂ uptake.

Technical information on scenarios

Reference service life

RSL information	Unit
Reference service Life	25 years
Declared product properties	Technical specifications and guidance can be obtained from direct contact to VELTEK Ventilation at +45 2423 3261 or los@veltek.dk
Design application parameters	
Assumed quality of work	
Outdoor environment	
Indoor environment	
Usage conditions	
Maintenance	

End of life (C1-C4)

Scenario information	Small ventilation unit	Large ventilation unit	Unit
Collected separately	657	1710	kg
Collected with mixed waste	0	0	kg
For reuse	0	0	kg
For recycling	657	1710	kg
For energy recovery	0	0	kg
For final disposal	85	228	kg
Secondary materials	572	1482	kg
Assumptions for scenario development	Assumed dismantled manually and then shredded at a metal recycling facility.		

Re-use, recovery and recycling potential (D)

Avoided production	Small ventilation unit	Large ventilation unit	Unit
Steel	343	861	kg
Copper	22	31	kg
Aluminium	122	325	kg
Motor	15	42	kg
Total	502	1259	kg

The avoided production is only calculated on the virgin fraction of the input material in A1-A3.

Indoor air

The EPD does not give information on release of dangerous substances to indoor air because the horizontal standards on the relevant measurements are not available. Read more in EN15804+A2 chapter 7.4.1.

Soil and water

The EPD does not give information on release of dangerous substances to soil and water because the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonised test methods according to the provisions of the respective technical committees for European product standards are not available.

References

Publisher	 www.epddanmark.dk
Programme operator	Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA-practitioner	Maria Preilev Hansen Danish Technological Institute Buildings & Environment Gregersensvej DK-2630 Taastrup www.teknologisk.dk
LCA software /background data	Thinkstep GaBi 10.6 Database version 2021.2 www.qabi-software.com
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General programme instructions

Version 2.0

www.epddanmark.dk

EN 15804

DS/EN 15804 + A2:2019 - "Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products"

EN 15942

DS/EN 15942:2011 – " Sustainability of construction works – Environmental product declarations – Communication format business-to-business"

ISO 14025

DS/EN ISO 14025:2010 – " Environmental labels and declarations – Type III environmental declarations – Principles and procedures"

ISO 14040

DS/EN ISO 14040:2008 – " Environmental management – Life cycle assessment – Principles and framework"

ISO 14044

DS/EN ISO 14044:2008 – " Environmental management – Life cycle assessment – Requirements and guidelines"