Environmental Product Declaration

In accordance with 14025 and EN15804 +A2

New Gen Spit VWL 75/8.2 AS 230V S2 + VWL 78/8.2 IS

Owner of the declaration:
VaillantGroup International GMBH

Product name:
New Gen Spit VWL 75/8.2 AS 230V S2 + VWL 78/8.2 IS

Declared unit:
To produce heating and domestic hot water thanks to a heat pump of 6,36 kW according to the reference usage scenario and during the 17-years reference lifetime of the product

Product category /PCR:
NPCR Part A:2021 Construction products and services Version 2.0

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-8994-8597

Registration number:
NEPD-8994-8597

Issue date: 07.02.2025

Valid to: 07.02.2030

General information

Product:
New Gen Spit VWL 75/8.2 AS 230V S2 + VWL 78/8.2 IS

Program Operator:
The Norwegian EPD Foundation
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Declaration Number:
NEPD-8994-8597

This declaration is based on Product Category Rules:
NPCR Part A:2021 Construction products and services Version 2.0

Statements of liability:
The owner of the declaration shall be liable for the underlying information and evidence.

Declared unit:
To produce heating and domestic hot water thanks to a heat pump of 6,36 kW according to the reference usage scenario and during the 17-years reference lifetime of the product

Functional unit:
To produce 1 kW of heating and produce domestic hot water, according to the reference usage scenario and during the 17-years reference lifetime of the product

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

internal ☐ external ■

Sign

Silje Wærp, Asplan Viak
Independent verifier approved by EPD Norway

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Management system:
[ISO 14001 fill in]

Organisation no:
905379772

Issue date:
07.02.2025

Valid to:
07.02.2030

Year of study:
2023

Comparability:
EPDs from other programs than EPD Norway may not be comparable. 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:
ASSOUAD Frédéric and OSMOND Tim from EVEA

Approved

Manager of EPD Norway

Product

Product description:

aroTHERM Split plus is a split heat pump range. With its output range from 3 to 7kW (8kW for A+7/W35) and its ability to provide high flow temperatures at the same time, it covers new build OFH & small MFH with underfloor heating (low flow temperatures) as well as small, modernized buildings with radiators requiring high flow temperatures.

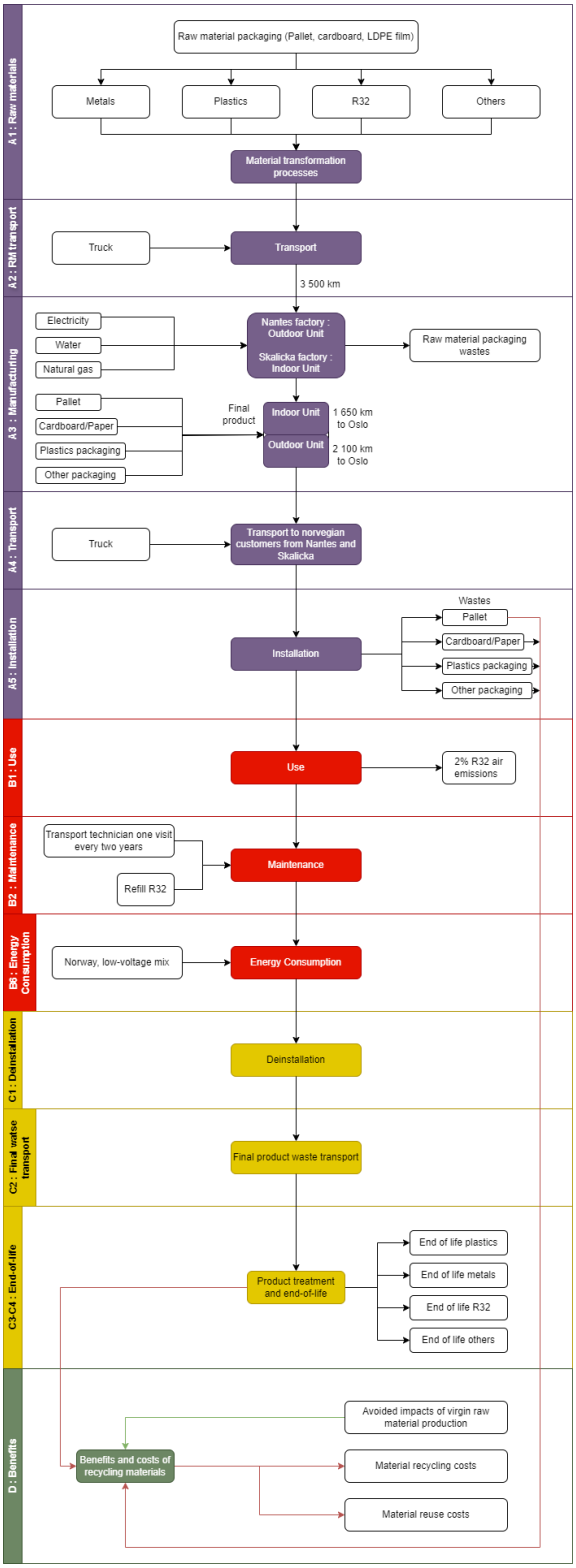
aroTHERM Split plus achieves A+++ ErP label for all models (A-7/W35) and best-in-class DHW COP of > 4,1. With R32 it uses an up-to-date refrigerant for reduction of the average Global Warming Potential (GWP) of the installed heat pump parc.

The pre-mounted uniTOWER indoor unit, with hot water tank, makes installation faster and require limited space and installation. This heat pump has been designed for individual residential use. The product reference configuration is the one defined by the EN 14825 standard.

Product specification:

Materials	KG	%
Steel	110,2	46,1%
Galvanised steel	48,8	20,4%
Copper	14,1	5,9%
Aluminium	12,0	5,0%
Stainless Steel	10,5	4,4%
ABS	5,3	2,2%
EPS	4,8	2,0%
Brass	4,7	2,0%
ASA	3,3	1,4%
Cable	2,8	1,2%
Autres	*22,6*	*9,5%*
Total	**216**	**100%**
Wood/pallet	21,6	62,9%
Cardboard	4,8	13,9%
EPS	4,3	12,4%
LDPE	1,0	2,9%
Steel	1,0	3%
Paper	0,60	1,7%
PET	0,50	1,5%
PP	0,43	1,2%
PE	0,10	0,3%

Diagram flow



Regarding B3, B4, B5 and B7, no relevant processes have been identified.

Scenarios in this EPD are based on PEP Ecopassport PSR0013-ed3.0-EN-2023 06 06

Characteristics	Quantity
Prated (Rated Power) with 35 flow temperature	6,61 kW
SCOP average (Seasonal Coefficient of Perfomance) with 35 flow temp.	5,06
AEC (Annual Energy Consumption for hot water production) for 35 degree	694 kWh
Electricity consumption for 17 years (RSL)	55 914 kWh

Market:
Norway

Reference service life, product:
The reference lifetime (RLT) is set at 17 years, in accordance with PSR 0013 for a heat pump for individual and residential use.

Reference service life, building:
50 years

LCA: Calculation rules

This EPD follows additional requirements from PSR 0013 for construction products considered as Electronic or Electric Equipment.

Declared unit:
To produce heating and domestic hot water thanks to a heat pump of 6,36 kW according to the reference usage scenario and during the 20-year reference lifetime of the product

Data quality:
The manufacturing data for Vaillant was collected in 2023. Other data are from Ecoinvent v3.10, released in 2024. The LCA software used is SimaPro version 9.5.

Allocation:
The allocation is carried out in accordance with the EN 15804 standard. Energy and water usage, along with waste generated internally, are distributed among the factory's products using a physical allocation method based on the total number of units produced annually. This means that all products, regardless of their materials, receive the same load per unit produced from these resources.
[Text]

System boundary:
This EPD represents a cradle-to-grave and module D analysis. The analysis comprises all modules A, B, C and D. Modul D is also declared with material and energy substitution from net recovery.

Cut-off criteria:
The following cut-off criteria shall be applied by default:

- The mass of intermediate flows not considered shall be less than or equal to 5% of the mass of the elements of the reference product corresponding to the functional unit,
- The energy flows not considered shall be less than or equal to 5% of the total use of primary energy during the life cycle of the reference product corresponding to the functional unit,
- The environmental impacts not considered shall be less than or equal to 5% of the total environmental impacts generated during the life cycle of the reference product corresponding to the functional unit.

The cut-of rules cannot be used to hide significant impact. To operationally understand this last cut-off criterion, the following materials and components shall systematically be included in the reference product modeling (the energy and mass cut-off criteria do not apply for the elements on this list). The list below is not complete.

Materials	Components
Gold	Microprocessors
Silver	Magnesium anode
Copper and alloys	Tantalum capacitor
Antimony trioxide[11]	Arsenic-Gallium capacitor
Insulating gas (e.g.: SF6)	Batteries and storage cells
Coolants	
Rare earths: Indium, Molybdenum, Neodymium	

LCA: Scenarios and additional technical information

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

The product is transported directly to the customer. As most of Vaillant customers are located in the Oslo area, the transport of the product is different wheither the unit comes from Nantes (outdoor unit) or from Skalika (indoor unit).

Transport from production place to assembly/user (A4)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance KM	Fuel/Energy consumption	value (l/t)
Truck	53	16-32 metric ton, EURO6	2 100 km for the outdoor unit and 1650 km for the indoor unit	0,0431	l/tkm

Assembly (A5)

	Unit	Value
Auxiliary	Kg	0
Water consumption	m3	0
Electricity consumption	kWh	0
Other energy carriers	MJ	0
Material loss	Kg	0
Output materials from waste treatment (packaging)	Kg	34,4

The heat pump is installed by hand by a technician.

Use (B1)

	Unit	Value
R32 refrigerant leaks into the air	kg	0,44

Refrigerant leakage throughout the product life cycle

Maintenance (B2)/Repair (B3)

	Unit	Value
Maintenance cycle*		9
Reloading R32	kg	0,45
Other resources	kg	0
Water consumption	m3	0
Electricity consumption	kWh	0
Other energy carriers	MJ	0
Material loss	Kg	0

Replacement (B4)/Refurbishment (B5)

It is assumed there is no need for replacement nor refurbishment under a normal scenario.

Operational energy (B6) and water consumption (B7)

The calculation of total energy consumption in combined mode (heating and domestic hot water production) considers the heating power, the Seasonal Coefficient of Performance, losses due to regulation, heating operating time, and the reference load temperature. It also includes auxiliary energy consumption for components like domestic hot water production. The formula calculates the total energy in kWh by integrating both heating and auxiliary energy requirements.

	Unit	Value
Water consumption	m3	0
Electricity consumption	kWh	55 914

National electricity grid for B6	Period of vailidity	Unit	Value
Electricity, low voltage {NO}| market for electricity, low voltage | Cut-off, U	2020-2023	kg CO2 - eq/kWh	0,0245

End of Life (C1, C3, C4)

The deinstallation process does not comprise energy nor additional inputs as it is a manual process. Therefore, C1 life cycle stage has no associated environmental burdens. Regarding the waste processing scenario is based on information provided by Statistics Norway (www.ssb.no).

	Unit	Value
Hazardous waste disposed	Kg	1,3
Collected as mixed construction waste	Kg	0
Reuse	Kg	0
Recycling outdoor unit	Kg	82,9
Recycling indoor unit	Kg	170,7
To landfill and incineration outdoor unit	Kg	17,8
To landfill and incineration indoor unit	Kg	9,4

Transport to waste processing (C2)

Type	Capacity utilisation (incl. return) %	Type of vehicle	Distance KM	Fuel/Energy consumption	value (l/t)
Truck	35	16-32 metric ton, EURO6	107	0,0431	l/tkm

Benefits and loads beyond the system boundaries (D)

	Unit	Value
Substitution of raw materials	kg	228.8 kg

LCA: Results

The LCA results are presented below for the functional unit defined on page 2 of the EPD document.

System boundaries (X=included, MND= module not declared, MNR=module not relevant)

Product stage			Assembly stage		Use stage							End of life stage				Benefits & loads beyond system boundary
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	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Core environmental impact indicators

Indicator	Unit/FU	A1-A3	A4	A5	B1	B2	B6	B3-B5+B7
GWP-total	kg CO2 eq.	2,92E+02	1,84E+01	7,58E+00	5,16E+01	4,46E+01	2,08E+02	0,00E+00
GWP-fossil	kg CO2 eq.	2,92E+02	1,84E+01	1,67E+00	5,16E+01	4,46E+01	2,03E+02	0,00E+00
GWP-biogenic	kg CO2 eq.	-5,28E-01	3,34E-03	5,90E+00	0,00E+00	1,46E-02	3,85E+00	0,00E+00
GWP-LULUC	kg CO2 eq.	7,19E-01	6,14E-03	4,43E-03	0,00E+00	1,85E-02	9,31E-01	0,00E+00
ODP	kg CFC11 eq.	3,42E-05	3,67E-07	1,85E-08	0,00E+00	6,48E-06	5,46E-06	0,00E+00
AP	mol H^+ eq.	3,22E+00	3,84E-02	2,83E-03	0,00E+00	1,93E-01	2,81E+00	0,00E+00
EP-freshwater	kg P eq.	2,06E-02	1,44E-04	4,51E-05	0,00E+00	7,10E-04	1,38E-02	0,00E+00
EP-marine	kg N eq.	3,16E-01	8,99E-03	1,34E-03	0,00E+00	5,49E-02	2,30E-01	0,00E+00
EP-terrestial	mol N eq.	3,80E+00	9,95E-02	1,07E-02	0,00E+00	6,11E-01	2,97E+00	0,00E+00
POCP	kg NMVOC eq.	1,34E+00	6,38E-02	2,91E-03	0,00E+00	2,21E-01	9,03E-01	0,00E+00
ADP-M&M	kg Sb eq.	3,58E-02	6,15E-05	2,76E-06	0,00E+00	4,79E-04	3,22E-02	0,00E+00
ADP-fossil	MJ	3,78E+03	2,59E+02	8,68E+00	0,00E+00	5,96E+02	2,45E+03	0,00E+00
WDP	m^3	1,68E+02	1,09E+00	3,08E-01	0,00E+00	2,20E+01	2,21E+02	0,00E+00

Indicator	Unit/FU	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	0,00E+00	9,23E-01	1,52E+01	5,17E+00	-1,12E+02
GWP-fossil	kg CO2 eq.	0,00E+00	9,22E-01	1,51E+01	5,17E+00	-1,12E+02
GWP-biogenic	kg CO2 eq.	0,00E+00	1,67E-04	1,04E-01	4,59E-04	8,16E-01
GWP-LULUC	kg CO2 eq.	0,00E+00	3,07E-04	2,22E-02	1,23E-04	-3,67E-01

ODP	kg CFC11 eq.	0,00E+00	1,83E-08	1,67E-06	7,67E-09	-2,25E-05
AP	mol H^+ eq.	0,00E+00	1,92E-03	8,84E-02	1,99E-03	-1,33E+00
EP-freshwater	kg P eq.	0,00E+00	7,20E-06	1,03E-03	1,33E-05	-1,86E-02
EP-marine	kg N eq.	0,00E+00	4,50E-04	1,76E-02	7,91E-04	-1,98E-01
EP-terrestial	mol N eq.	0,00E+00	4,98E-03	2,06E-01	8,12E-03	-3,55E+00
POCP	kg NMVOC eq.	0,00E+00	3,19E-03	5,95E-02	2,38E-03	-6,73E-01
ADP-M&M	kg Sb eq.	0,00E+00	3,08E-06	2,38E-04	1,93E-06	-1,09E-02
ADP-fossil	MJ	0,00E+00	1,30E+01	2,80E+02	4,07E+00	-1,35E+03
WDP	m^3	0,00E+00	5,46E-02	8,41E+00	1,04E-01	-9,12E+01

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*

Additional environmental impact indicators

Indicator	Unit/FU	A1-A3	A4	A5	B1	B2	B6	B3-B5+B7
PM	Disease incidence	2,26E-05	1,35E-06	3,26E-08	0,00E+00	2,15E-06	1,46E-05	0,00E+00
IRP	kBq U235 eq.	7,35E+00	1,20E-01	1,66E-02	0,00E+00	3,53E-01	3,65E+01	0,00E+00
ETP-fw	CTUe	1,07E+04	7,06E+01	9,47E+00	2,38E-03	3,04E+02	4,88E+03	0,00E+00
HTP-c	CTUh	2,48E-05	1,31E-07	3,69E-09	0,00E+00	3,63E-07	2,65E-06	0,00E+00
HTP-nc	CTUh	2,60E-05	1,63E-07	3,68E-08	5,24E-10	5,03E-07	2,61E-05	0,00E+00
SQP	Dimensionless	2,69E+03	1,57E+02	5,80E+00	0,00E+00	2,29E+02	1,31E+03	0,00E+00

Indicator	Unit/FU	C1	C2	C3	C4	D
PM	Disease incidence	0,00E+00	6,76E-08	2,42E-06	1,85E-08	-1,27E-05
IRP	kBq U235 eq.	0,00E+00	5,99E-03	1,69E+00	4,80E-03	-2,86E+00
ETP-fw	CTUe	0,00E+00	3,53E+00	9,84E+01	1,88E+01	-7,66E+03
HTP-c	CTUh	0,00E+00	6,55E-09	3,33E-07	2,86E-09	-1,43E-05
HTP-nc	CTUh	0,00E+00	8,15E-09	1,09E-05	2,29E-08	-5,21E-06
SQP	Dimensionless	0,00E+00	7,84E+00	1,06E+02	1,47E+00	-7,02E+02

PM: *Particulate matter emissions;* ***IRP:*** *Ionising radiation, human health;* ***ETP-fw:*** *Ecotoxicity (freshwater);* ***ETP-c:*** *Human toxicity, cancer effects;* ***HTP-nc:*** *Human toxicity, non-cancer effects;* ***SQP:*** *Land use related impacts / soil quality*

Classification of disclaimers to the declaration of core and additional environmental impact indicators

ILCD classification	Indicator	Disclaimer
ILCD type / level 1	Global warming potential (GWP)	None
	Depletion potential of the stratospheric ozone layer (ODP)	None
	Potential incidence of disease due to PM emissions (PM)	None
ILCD type / level 2	Acidification potential, Accumulated Exceedance (AP)	None
	Eutrophication potential, Fraction of nutrients reaching marine end compartment (EP-marine)	None
	Eutrophication potential, Accumulated Exceedance (EP-terrestrial)	None
	Formation potential of tropospheric ozone (POCP)	None
	Potential Human exposure efficiency relative to U235 (IRP)	1
ILCD type / level 3	Abiotic depletion potential for non-fossil resources (ADP-minerals&metals)	2
	Abiotic depletion potential for fossil resources (ADP-fossil)	2
	Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	2
	Potential Comparative Toxic Unit for ecosystems (ETP-fw)	2
	Potential Comparative Toxic Unit for humans (HTP-c)	2
	Potential Comparative Toxic Unit for humans (HTP-nc)	2
	Potential Soil quality index (SQP)	2

Disclaimer 1 – 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.

Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

Resource use

Parameter	Unit/FU	A1-A3	A4	A5	B1	B2	B6	B3-B5+B7
RPEE	MJ	5,04E+02	4,45E+00	6,03E+01	0,00E+00	1,55E+01	3,50E+04	0,00E+00
RPEM	MJ	5,32E+01	0,00E+00	-5,88E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TPE	MJ	5,57E+02	4,45E+00	1,46E+00	0,00E+00	1,55E+01	3,50E+04	0,00E+00
NRPE	MJ	3,62E+03	2,59E+02	8,70E+00	0,00E+00	5,96E+02	2,45E+03	0,00E+00
NRPM	MJ	1,62E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
TRPE	MJ	3,78E+03	2,59E+02	8,70E+00	0,00E+00	5,96E+02	2,45E+03	0,00E+00
SM	kg	1,10E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

RSF	MJ	ND	ND	ND	ND	ND	ND	ND
NRSF	MJ	ND	ND	ND	ND	ND	ND	ND
W	m^3	4,91E+00	3,59E-02	1,21E-02	0,00E+00	5,43E-01	2,48E+02	0,00E+00

Parameter	Unit/FU	C1	C2	C3	C4	D
RPEE	MJ	0,00E+00	2,23E-01	3,36E+01	1,92E-01	-2,50E+02
RPEM	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,71E+00
TPE	MJ	0,00E+00	2,23E-01	3,36E+01	1,92E-01	-2,59E+02
NRPE	MJ	0,00E+00	1,30E+01	2,80E+02	-5,49E+01	-1,30E+03
NRPM	MJ	0,00E+00	0,00E+00	0,00E+00	5,90E+01	-5,91E+01
TRPE	MJ	0,00E+00	1,30E+01	2,80E+02	4,07E+00	-1,35E+03
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	ND	ND	ND	ND	ND
NRSF	MJ	ND	ND	ND	ND	ND
W	m^3	0,00E+00	1,80E-03	2,99E-01	6,02E-03	-2,74E+00

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/FU	A1-A3	A4	A5	B1	B2	B6	B3-B5+B7
HW	KG	2,70E+00	7,93E-03	6,09E-02	0,00E+00	1,09E-01	1,25E+00	0,00E+00
NHW	KG	1,02E+03	1,53E+01	3,55E-01	0,00E+00	3,14E+01	1,07E+03	0,00E+00
RW	KG	5,37E-03	8,36E-05	1,33E-05	0,00E+00	2,26E-04	1,69E-02	0,00E+00

Parameter	Unit/FU	C1	C2	C3	C4	D
HW	KG	0,00E+00	3,97E-04	3,93E+00	7,51E-01	-1,18E-01
NHW	KG	0,00E+00	7,68E-01	6,90E+00	6,32E-01	-4,31E+02
RW	KG	0,00E+00	4,18E-06	1,52E-03	3,95E-06	-2,06E-03

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

End of life – output flow

Parameter	Unit/FU	A1-A3	A4	A5	B1	B2	B6	B3-B5+B7

CR	kg	ND	ND	ND	ND	ND	ND	ND
MR	kg	1,15E+00	0,00E+00	1,60E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	ND	ND	ND	ND	ND	ND	ND
EEE	MJ	ND	ND	ND	ND	ND	ND	ND
ETE	MJ	ND	ND	ND	ND	ND	ND	ND

Parameter	Unit/FU	C1	C2	C3	C4	D
CR	kg	ND	ND	ND	ND	ND
MR	kg	0,00E+00	0,00E+00	3,77E+01	0,00E+00	0,00E+00
MER	kg	ND	ND	ND	ND	ND
EEE	MJ	ND	ND	ND	ND	ND
ETE	MJ	ND	ND	ND	ND	ND

CR Components for reuse; MR Materials for recycling; MER Materials for energy recovery; EEE Exported electric energy; ETE Exported thermal energy

Reading example: 9,0 E-03 = 9,0*10-3 = 0,009

Information describing the biogenic carbon content at the factory gate

Biogenic carbon content	Unit/FU	Value IDU	Value ODU
Biogenic carbon content in product	kg C	0	0
Biogenic carbon content in the accompanying packaging	kg C	0,70	1,3

Note: 1 kg biogenic carbon is equivalent to 44/12 (approx. 3.67) kgCO_2, IDU: Indoor unit; ODU: Outdoor unit

Additional requirements

Location based electricity mix from the use of electricity in the manufacturing phase

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

National electricity grid	Data source	Foreground / core [kWh]	Value	Unit
Electricity, medium voltage {FR}| market for | Cut-off, U	Ecoinvent 3.10	6,6	0,0214	kg CO2 - eq/kWh
Electricity, medium voltage {SK}| market for | Cut-off, U	Ecoinvent 3.10	5,2	0,108	kg CO2 - 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/FU	A1-A3	A4	A5	B1	B2	B6	B3-B5+B7
GWP-IOBC	kg CO2 eq.	2,92E+02	1,84E+01	7,58E+00	5,16E+01	4,46E+01	2,08E+02	0,00E+00

Indicator	Unit/FU	C1	C2	C3	C4	D
GWP-IOBC	kg CO2 eq.	0,00E+00	9,23E-01	1,52E+01	5,17E+00	-1,12E+02

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

Hazardous substances

The declaration is based upon reference to threshold values and/or test results and/or material safety data sheets provided to EPD verifiers. Documentation available upon request to EPD owner. SCIP number: fd7ca46c-4024-477e-ab0a-98bd8ca515e9

☐ The product contains no substances given by the REACH Candidate list.
☐ The product contains substances given by the REACH Candidate list that are less than 0,1 % by weight.

☒ The product contains dangerous substances, more then 0,1% by weight, given by the REACH Candidate List, see SCIP number

☐ The product contains no substances given by the REACH Candidate list.
☐ The product is classified as hazardous waste, see table.

Indoor environment

The product has no emission to indoor environment.

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 declaration - Core rules for the product category of construction products
ISO 21930:2007	Sustainability in building construction - Environmental declaration of building products
NPCR PART A : 2021	Construction products and services. Part A version 2.0, March 2021. EPD-Norge.
Ecoinvent V3.9. 2022	Ecoinvent version 3.9. Swiss, Centre for Life Cycle Inventories, Dübendorf, Switzerland.
PEP Ecopassport PSR	Specific rules for thermodynamic generators with electric compression for space heating and/or cooling and/or the production of domestic hot water
Statistics Norway	Waste from households 2023: https://www.ssb.no/en/natur-og-miljo/avfall/statistikk/avfall-fra-hushalda
Assouad F.	LCA report for EPD Verification - Accompanying report related to the production of PEP about heat pump

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