

PRODUCT ENVIRONMENTAL PROFILE

EWFH-TZD

Registration Number: DAE0-00023-V01.01-EN

Drafting Rules « PCR-ed4-EN-2021 09 06 »
Supplemented By PSR-0013-ed3.0-EN-2023-06-06

Verifier accreditation number: VH42

Information and reference documents:
www.pep-ecopassport.org

Date of issue: 01-2025

Validity period: 5 years

Independent verification of the declaration and data in compliance with ISO 14025: 2010

Internal ☐ External ☒

The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)

PEPs are compliant with XP C08-100-1:2016 or EN 50693:2019

The components of the present PEP may not be compared with components from any other program.

Document complies with ISO 14025: 2006 «Environmental labels and declarations.
Type III Environmental declarations»



GENERAL INFORMATION

MANUFACTURER INFORMATION

Manufacturer	Daikin Applied Europe SpA
Address	Via Piani di Santa Maria, 72 00072 Ariccia (Rome) Italy
Contact details	epddae@daikinapplied.eu
Website	Daikin TZ IV Generation

PRODUCT IDENTIFICATION

Product family	EWFH-TZD
Reference Product	EWFHH11TZXS2
Place(s) of production	Italy
Place(s) of installation	France

PRODUCT INFORMATION

Technology	Air-to-Water Inverter Screw Chiller equipped with freecooling		
Function	Package unit for industrial applications.		
Unit	EWAHH12TZSSD2		
P_{cooling} (Pc)	1116.74 kW		
t_{cooling_process}	7409.3 h		
SEPR	7.18		
Refrigerant	R1234ze	Reference service life (DVR)	22 y
Homogenous Family	Screw Chiller EWFH-TZD (see extrapolation table page 15)		
Additional info	The use stage is modelled according to the performance data declared for the Ecodesign Directive 2009/125/EU. The performances are based on the following conditions: cooling water temperature 12/7°C; outdoor air temperature 35°C.		

DECLARED UNIT

Declared unit	“To produce cooling thanks to an air to water chiller of 1116.74 kW (cooling capacity) according to the appropriate use scenario and during the 22-year reference lifetime of the product”.
Total weight	11442 kg
Unit weight	11416 kg
Packaging weight	26.22 kg

FUNCTIONAL UNIT

Functional unit	“To produce 1 kW of cooling according to the appropriate usage scenario defined in the EN 14825 standard and during the 22-year reference lifetime of the product.”
FU weighting value	1 kW / 1116.74 kW
Total weight	10.25 kg
Unit weight	10.22 kg
Packaging weight	0.02 kg

The reference flow consider:

- a thermodynamic generator with electric compression with a specific reference lifetime;
- its packaging.

CONSTITUENT MATERIALS

Table 1 Raw Material Composition

PEP Material categories	Materials	Weight %	%
Metals	Steel	45.5%	79.8%
	Cast Iron	17.0%	
	Copper	6.1%	
	Aluminium	11.2%	
	Brass	< 1%	
	Brazing solder	< 1%	
Plastics	Insulation foam	0.1%	1.5%
	Packaging film	0.2%	
	Polyethylene	1.2%	
Others	Elec.motors	10%	18.7%
	Glass fiber	1.7%	
	Refrigerant	1.7%	
	Cables	1.8%	
	Refrigerant oil	0.4%	
	Electric components	3%	

LIFE-CYCLE ASSESSMENT

LIFE-CYCLE ASSESSMENT INFORMATION

Reference year FY 23 (April 23 – March 24)

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

SYSTEM BOUNDARY

This PEP covers the cradle to grave scope with following modules: A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Transport), A5 (Assembly), B1 (Use), B2 (Maintenance), B6 (Operational energy use), B7 (Operational water use) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary is included.

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	D	D	
x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Geography, by two-letter ISO country code or regions.																			
EU	EU	EU	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU			
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruct./demol	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling	

Modules not declared = MND. Modules not relevant = MNR.

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 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. The energy consumptions during the installation stage are included but the concrete slab mass is excluded due to the typical installation of the product (industrial applications).

There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

PRODUCT LIFE-CYCLE

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission, most of the data are modelled using the European energy mix.

The reference product consists of one unit of the series EWFH-TZD. The unit is manufactured in Italy in the manufacturing site located in Ariccia (RM). Transportation of components to the manufacturing site is accounted based on actual distance and mode of transport. The manufacturing energy considered is based on the electricity mix certified (by GSE) for the manufacturing site by the energy supplier company: green hydroelectric power from Norway country.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation of the product in its packaging from the manufacturer's last logistics platform (A4) to the distributor and from the distributor to the installation place (A5), as defined by PCR-ed4-EN-2021 09 06, covers fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The distribution stage has been analysed in accordance with the section 2.5.3. on transport scenarios of the PCR (PEP-PCR-ed4-EN-2021 09 06) in force.

The reference product is manufactured and distributed as a make-to-stock (MTS) product in Europe. For this reason, no specific data on transport from the manufacturing site to the installation site are available: the default data for intracontinental transport is taken into consideration.

- Intracontinental transport: 3,500 km by lorry.

The packaging scenarios for the installation stage are modelled according to requirements of PEP Ecopassport PSR-0013-ed3.0-EN-2023-06-06 - clause 3.5.3.2. Waste generated during the installation phase.

By sector-based agreement, the transport stage for this waste shall be taken into account, assuming that it is trucked over a distance of 100 km.

The energy consumptions for the installation stage include the handling and lifting activities and the commissioning running test, the energy mixed used is "market for electricity, low voltage – France".

Table 2. Packaging EOL Scenario France scope

EoL of the packaging mass	Paper-Cardboard	Wood	Plastic
Recycling rate	91%	7%	27%
Incineration with energy production	5%	31%	43%
Incineration without energy production	0%	0%	0%
Burial rate	4%	62%	30%
* Metals are not present in the packaging of the products			

PRODUCT USE AND MAINTENANCE (B1-B7)

The use stage scenario is calculated based on the methodology given in PSR-0013-ed3.0-EN-2023-06-06. The reference service time (DVR) is 22 years and the evaluation of the total consumption energy during the use phase is also taken into account. The equipment will be installed in a commercial building.

The water consumptions during the manufacturing stage are evaluated according to the clause 3.5.4.5.- Consideration of water consumption and liquid waste (module B7). The product in scope is an Air-to-Water unit, the circulation of pre-treated water in a closed loop is necessary during the use stage. The quantity of water consumed throughout the equipment life cycle is equivalent to the volume of the equipment's water circuit.

The impacts of refrigerant leakage, equipment maintenance and refrigerant refilling have been considered according to PSR-0013-ed3.0-EN-2023-06-06 using the formula $E_{fu} = Q_{fu} * DVR$.

The Operational Energy Use stage is calculated using the formula

$$C_{tot}(kWh) = \left(\frac{P_c}{SEPR} * t_{cooling_{process}} \right) * RLT$$

According to the standard EN 14825:2022 the calculation assumptions are the following:

- The number of equivalent annual operating hours (at full load) for process cooling applications was evaluated according to Table C.1 (Annex C) of the standard;
- The seasonal performances are defined according to High temperature application defined as for Table 16 — Part load conditions for air-cooled process chillers.

Table 3: Use Stage Details

Use of the Product (B1)	Emission of refrigerant during the use phase 1.32 kg R1234ze (1.848 kgCO ₂ eq)	
Maintenance (B2)	Number of refills	1
	Transport	1 person (80kg) + Equipment (15kg) in truck, 100km, every 2 years
	No parts require mandatory replacement.	
Energy used by the reference product	Type of energy	France energy mix* 0.087 kg CO ₂ e / kWh
	C _{tot} (Total energy consumption of the reference product)	25 363 488.5 kWh
	Reference lifetime (RLT)	22 years

*Ecoinvent 3.10.1

PRODUCT END OF LIFE (C1-C4, D)

The End of Life (EOL) is the stage accounted for at the end of life of the product and of the refrigerant. The EOL of the product is modelled using PCR-ed4-EN-2021 09 06. The EOL scenario of the refrigerant is modelled based on the methodology described in PSR-0013-ed3.0-EN-2023-06-06.

Out of the refrigerant recovered, 10% is incinerated without energy recovery and 90% is regenerated for reuse.

The reference energy mix for EoL is the European mix.

ENVIRONMENTAL IMPACTS PER DECLARED UNIT

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

	TOTAL (ex mod.D)	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	EoL (C1-C4)	Benefits & Loads (D)
Global Warming Potential total kg CO ₂ e	2,32E+06	9,36E+04	4,29E+03	1,52E+02	2,22E+06	5,53E+03	-3,94E+04
Global Warming Potential fossil kg CO ₂ e	2,32E+06	9,34E+04	4,29E+03	1,52E+02	2,22E+06	5,52E+03	-3,93E+04
Global Warming Potential biogenic kg CO ₂ e	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Global Warming Potential, LULUC kg CO ₂ e	2,45E+03	2,24E+02	1,61E+00	7,21E-02	2,21E+03	6,26E+00	-1,08E+02
Depletion potential of the stratospheric ozone layer kg CFC11e	2,62E-01	1,82E-01	8,63E-05	3,03E-06	7,96E-02	5,70E-05	-1,47E-01
Acidification potential, Accumulated Exceedance mol H ⁺ eq.	1,67E+04	1,22E+03	1,38E+01	5,94E-01	1,55E+04	1,93E+01	-7,29E+02
Eutrophication aquatic freshwater kg P eq.	1,04E+03	1,08E+02	2,89E-01	2,89E-02	9,26E+02	2,35E+00	-5,90E+01
Eutrophication aquatic marine kg N eq.	3,07E+03	1,19E+02	4,71E+00	1,45E-01	2,94E+03	5,82E+00	-5,22E+01
Eutrophication terrestrial mol N eq.	2,58E+04	1,26E+03	5,12E+01	1,33E+00	2,44E+04	4,40E+01	-5,76E+02
Formation potential of tropospheric ozone kg NMVOC eq.	8,85E+03	4,47E+02	2,26E+01	4,88E-01	8,37E+03	1,45E+01	-1,87E+02
Abiotic depletion potential (ADP-elements) for non fossil resources (+A2) kg Sbe	1,21E+02	1,47E+01	1,18E-02	3,05E-03	1,06E+02	2,01E-02	-7,98E+00
Abiotic depletion potential (ADP-fossil fuels) for fossil resources (+A2) MJ	2,89E+08	1,08E+06	6,21E+04	8,81E+03	2,87E+08	6,54E+04	-3,67E+05
Water use m ³ deprived	3,68E+06	3,55E+04	3,18E+02	1,06E+02	3,64E+06	2,43E+03	-1,38E+04

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

	TOTAL (ex mod.D)	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	EoL (C1-C4)	Benefits & Loads (D)
Particulate matter emissions incidence	1,48E-01	6,27E-03	4,27E-04	7,56E-06	1,41E-01	4,65E-04	-2,89E-03
Ionising radiation, human health kBq U-235eq	1,29E+07	6,18E+03	7,49E+01	3,64E+02	1,29E+07	1,12E+03	-1,13E+03
Eco-toxicity (freshwater) CTUe	1,70E+07	1,11E+06	7,33E+03	5,03E+02	1,58E+07	9,76E+04	-5,39E+05
Human toxicity, cancer effects CTUh	2,04E-03	1,51E-04	7,06E-07	8,58E-08	1,87E-03	2,11E-05	-9,53E-05
Human toxicity, non-cancer effects CTUh	1,05E-01	1,08E-02	4,04E-05	2,86E-06	9,39E-02	8,27E-05	-6,95E-03
Land use related impacts/ Soil quality dimensionless	1,80E+07	5,52E+05	6,26E+04	5,61E+02	1,74E+07	2,65E+04	-2,34E+05

USE OF NATURAL RESOURCES

	TOTAL (ex mod.D)	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	EoL (C1-C4)	Benefits & Loads (D)
Use of renewable primary energy resources as energy MJ	3,05E+07	1,31E+05	1,01E+03	8,70E+02	3,04E+07	1,05E+04	-4,89E+04
Use of renewable primary energy resources as raw materials MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy MJ	3,05E+07	1,31E+05	1,01E+03	8,70E+02	3,04E+07	1,05E+04	-4,89E+04
Use of non renewable primary energy as energy MJ	2,89E+08	1,06E+06	6,21E+04	7,60E+03	2,87E+08	4,23E+04	-3,80E+05
Use of non renewable primary energy as raw materials MJ	1,11E+03	1,11E+03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non renewable primary energy MJ	2,89E+08	1,06E+06	6,21E+04	7,60E+03	2,87E+08	4,23E+04	-3,80E+05
Use of secondary materials kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels MJ	3,79E+02	2,23E+02	3,39E-01	5,53E-03	1,55E+02	1,09E+00	-3,35E+00
Use of non renewable secondary fuels MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water m3	8,87E+04	9,39E+02	9,18E+00	2,52E+00	8,77E+04	7,34E+01	-4,01E+02
Total use of primary energy during the life cycle MJ	3,19E+08	1,19E+06	6,32E+04	8,47E+03	3,18E+08	5,28E+04	-4,29E+05

WASTE & OUTPUT FLOWS

	TOTAL (ex mod.D)	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	EoL (C1-C4)	Benefits & Loads (D)
Hazardous waste disposed kg	2,00E+05	1,77E+04	9,00E+01	6,24E+00	1,78E+05	3,35E+03	-1,14E+04
Non hazardous waste disposed kg	5,59E+06	6,79E+05	1,80E+03	2,11E+02	4,89E+06	1,87E+04	-3,45E+05
Radioactive waste disposed kg	3,70E+03	1,58E+00	1,87E-02	1,05E-01	3,70E+03	2,86E-01	-2,98E-01
Components for re-use kg	1,58E+02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,58E+02	0,00E+00
Materials for recycling kg	8,31E+03	3,15E+02	0,00E+00	7,08E+00	0,00E+00	7,99E+03	0,00E+00
Materials for energy recovery kg	1,48E+02	1,37E+02	0,00E+00	1,13E+01	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	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS PER FUNCTIONAL UNIT

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

	TOTAL (ex mod.D)	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	EoL (C1-C4)	Benefits & Loads (D)
Global Warming Potential total kg CO ₂ e/FU	2,08E+03	8,38E+01	3,84E+00	1,36E-01	1,99E+03	4,95E+00	-3,53E+01
Global Warming Potential fossil kg CO ₂ e/FU	2,08E+03	8,36E+01	3,84E+00	1,36E-01	1,98E+03	4,94E+00	-3,52E+01
Global Warming Potential biogenic kg CO ₂ e/FU	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Global Warming Potential, LULUC kg CO ₂ e/FU	2,19E+00	2,01E-01	1,44E-03	6,45E-05	1,98E+00	5,60E-03	-9,65E-02
Depletion potential of the stratospheric ozone layer kg CFC11e/FU	2,35E-04	1,63E-04	7,73E-08	2,71E-09	7,13E-05	5,10E-08	-1,32E-04
Acidification potential, Accumulated Exceedance mol H ⁺ eq./FU	1,50E+01	1,09E+00	1,24E-02	5,32E-04	1,38E+01	1,73E-02	-6,53E-01
Eutrophication aquatic freshwater kg P eq./FU	9,27E-01	9,63E-02	2,59E-04	2,59E-05	8,29E-01	2,10E-03	-5,28E-02
Eutrophication aquatic marine kg N eq./FU	2,75E+00	1,06E-01	4,21E-03	1,30E-04	2,64E+00	5,21E-03	-4,67E-02
Eutrophication terrestrial mol N eq./FU	2,31E+01	1,13E+00	4,58E-02	1,20E-03	2,19E+01	3,94E-02	-5,16E-01
Formation potential of tropospheric ozone kg NMVOC eq./FU	7,92E+00	4,00E-01	2,02E-02	4,37E-04	7,49E+00	1,30E-02	-1,67E-01
Abiotic depletion potential (ADP-elements) for non fossil resources (+A2) kg Sbe/FU	1,09E-01	1,31E-02	1,06E-05	2,73E-06	9,54E-02	1,80E-05	-7,16E-03
Abiotic depletion potential (ADP-fossil fuels) for fossil resources (+A2) MJ/FU	2,58E+05	9,66E+02	5,56E+01	7,89E+00	2,57E+05	0,00E+00	-3,45E+02
Water use m ³ deprived/FU	3,30E+03	3,18E+01	2,85E-01	9,51E-02	3,26E+03	2,17E+00	-1,24E+01

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

	TOTAL (ex mod.D)	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	EoL (C1-C4)	Benefits & Loads (D)
Particulate matter emissions incidence/FU	1,33E-04	5,61E-06	3,82E-07	6,77E-09	1,26E-04	4,16E-07	-2,59E-06
Ionising radiation, human health kBq U-235eq/FU	1,15E+04	5,54E+00	6,71E-02	3,26E-01	1,15E+04	1,00E+00	-1,01E+00
Eco-toxicity (freshwater) CTUe/FU	1,52E+04	9,93E+02	6,56E+00	4,50E-01	1,41E+04	8,74E+01	-4,82E+02
Human toxicity, cancer effects CTUh/FU	1,83E-06	1,36E-07	6,33E-10	7,68E-11	1,67E-06	1,89E-08	-8,54E-08
Human toxicity, non-cancer effects CTUh/FU	9,39E-05	9,68E-06	3,62E-08	2,56E-09	8,41E-05	7,41E-08	-6,23E-06
Land use related impacts/ Soil quality dimensionless/FU	1,61E+04	4,94E+02	5,61E+01	5,02E-01	1,55E+04	2,37E+01	-2,09E+02

USE OF NATURAL RESOURCES

	TOTAL (ex mod.D)	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	EoL (C1-C4)	Benefits & Loads (D)
Use of renewable primary energy resources as energy MJ/FU	2,73E+04	1,17E+02	9,07E-01	7,79E-01	2,72E+04	9,39E+00	-4,38E+01
Use of renewable primary energy resources as raw materials MJ/FU	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renewable primary energy MJ/FU	2,73E+04	1,17E+02	9,07E-01	7,79E-01	2,72E+04	9,39E+00	-4,38E+01
Use of non renewable primary energy as energy MJ/FU	2,58E+05	9,51E+02	5,57E+01	6,81E+00	2,57E+05	3,79E+01	-3,40E+02
Use of non renewable primary energy as raw materials MJ/FU	9,97E-01	9,97E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-7,52E+00
Total use of non renewable primary energy MJ/FU	2,58E+05	9,52E+02	5,57E+01	6,81E+00	2,57E+05	3,79E+01	-3,48E+02
Use of secondary materials kg/FU	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels MJ/FU	3,39E-01	2,00E-01	3,04E-04	4,95E-06	1,39E-01	9,78E-04	-3,00E-03
Use of non renewable secondary fuels MJ/FU	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water m3/FU	7,94E+01	8,41E-01	8,22E-03	2,26E-03	7,85E+01	6,57E-02	-3,59E-01
Total use of primary energy during the life cycle MJ/FU	2,86E+05	1,07E+03	5,66E+01	7,58E+00	2,85E+05	4,73E+01	-3,84E+02

WASTE & OUTPUT FLOWS

	TOTAL (ex mod.D)	Manufacturing (A1-A3)	Distribution (A4)	Installation (A5)	Use (B1-B7)	EoL (C1-C4)	Benefits & Loads (D)
Hazardous waste disposed kg/FU	1,79E+02	1,59E+01	8,06E-02	5,59E-03	1,60E+02	3,00E+00	-1,02E+01
Non hazardous waste disposed kg/FU	5,01E+03	6,08E+02	1,61E+00	1,89E-01	4,38E+03	1,68E+01	-3,09E+02
Radioactive waste disposed kg/FU	3,31E+00	1,42E-03	1,67E-05	9,37E-05	3,31E+00	2,57E-04	-2,67E-04
Components for re-use kg/FU	1,41E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,41E-01	0,00E+00
Materials for recycling kg/FU	7,44E+00	2,82E-01	0,00E+00	6,34E-03	0,00E+00	7,15E+00	0,00E+00
Materials for energy recovery kg/FU	1,33E-01	1,23E-01	0,00E+00	1,01E-02	0,00E+00	0,00E+00	0,00E+00
Exported Energy MJ/FU	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

HOMOGENEOUS ENVIRONMENTAL FAMILIES

All extrapolation coefficients are calculated according to the declared Ecodesign performance data and the unit weight indicated in the dimensional drawings.

Extrapolation coefficient for functional unit	EWFH235TZBSD1	EWFH255TZBSD1	EWFH300TZBSD1	EWFH350TZBSD1	EWFH400TZBSD1	EWFH420TZBSD1	EWFH455TZBSD1	EWFH505TZBSD1	EWFH545TZBSD1	EWFH400TZBSD2	EWFH425TZBSD2	EWFH485TZBSD2	EWFH545TZBSD2	EWFH590TZBSD2	EWFH635TZBSD2	EWFH745TZBSD2	EWFH785TZBSD2	EWFH845TZBSD2	EWFH900TZBSD2	EWFH985TZBSD2	EWFHC11TZBSD2	EWFHH11TZBSD2	EWFHC13TZBSD2	EWFHH13TZBSD2	EWFHH14TZBSD2	EWFHC15TZBSD2	EWFHH15TZBSD2
Manufacturing stage	0,85	0,79	0,68	1,09	0,99	0,95	0,88	0,87	0,82	1,42	1,34	1,20	1,07	1,12	1,02	1,03	0,97	0,94	0,95	0,88	0,85	0,96	0,90	0,66	0,77	0,78	0,79
Distribution stage	0,85	0,79	0,68	1,09	0,99	0,95	0,88	0,87	0,82	1,42	1,34	1,20	1,07	1,12	1,02	1,03	0,97	0,94	0,95	0,88	0,85	0,96	0,90	0,66	0,77	0,78	0,79
Installation stage	0,09	0,10	0,12	0,16	0,18	0,18	0,20	0,22	0,27	0,20	0,21	0,24	0,27	0,32	0,35	0,45	0,48	0,51	0,60	0,65	0,79	0,84	1,02	1,07	1,24	1,29	1,44
Use stage	1,24	1,31	1,40	1,25	1,31	1,36	1,43	1,47	1,42	1,19	1,21	1,24	1,29	1,32	1,32	1,23	1,28	1,30	1,30	1,38	1,39	1,42	1,09	1,14	1,15	1,18	1,17
Maintenance stage	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
EOL stage	0,85	0,78	0,68	1,09	0,99	0,94	0,88	0,86	0,82	1,42	1,34	1,20	1,07	1,12	1,02	1,03	0,97	0,94	0,95	0,88	0,85	0,96	0,91	0,66	0,77	0,78	0,79
Extrapolation coefficient for declared unit	EWFH235TZBSD1	EWFH255TZBSD1	EWFH300TZBSD1	EWFH350TZBSD1	EWFH400TZBSD1	EWFH420TZBSD1	EWFH455TZBSD1	EWFH505TZBSD1	EWFH545TZBSD1	EWFH400TZBSD2	EWFH425TZBSD2	EWFH485TZBSD2	EWFH545TZBSD2	EWFH590TZBSD2	EWFH635TZBSD2	EWFH745TZBSD2	EWFH785TZBSD2	EWFH845TZBSD2	EWFH900TZBSD2	EWFH985TZBSD2	EWFHC11TZBSD2	EWFHH11TZBSD2	EWFHC13TZBSD2	EWFHH13TZBSD2	EWFHH14TZBSD2	EWFHC15TZBSD2	EWFHH15TZBSD2
Manufacturing stage	0,17	0,17	0,17	0,33	0,33	0,33	0,33	0,36	0,37	0,48	0,48	0,50	0,50	0,54	0,54	0,65	0,65	0,67	0,72	0,73	0,79	0,95	1,00	0,77	0,95	1,00	1,05
Distribution stage	0,17	0,17	0,17	0,33	0,33	0,33	0,33	0,36	0,37	0,48	0,48	0,50	0,50	0,54	0,54	0,65	0,65	0,67	0,72	0,73	0,79	0,95	1,00	0,77	0,95	1,00	1,05
Installation stage	0,46	0,46	0,46	0,52	0,52	0,52	0,52	0,52	0,59	0,59	0,59	0,59	0,59	0,66	0,66	0,72	0,72	0,72	0,79	0,79	0,85	0,85	0,92	0,92	1,00	1,00	1,08
Use stage	0,25	0,28	0,36	0,38	0,44	0,48	0,54	0,62	0,64	0,40	0,44	0,51	0,60	0,64	0,70	0,77	0,85	0,93	0,98	1,14	1,29	1,41	1,21	1,33	1,42	1,52	1,56
Maintenance stage	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
EOL stage	0,17	0,17	0,17	0,33	0,33	0,33	0,33	0,36	0,37	0,48	0,48	0,49	0,49	0,54	0,54	0,64	0,64	0,67	0,72	0,73	0,79	0,95	1,00	0,77	0,95	1,00	1,05

HOMOGENEOUS ENVIRONMENTAL FAMILIES

Extrapolation coefficient for functional unit	EWFH240TZSSD1	EWFH265TZSSD1	EWFH295TZSSD1	EWFH370TZSSD1	EWFH415TZSSD1	EWFH450TZSSD1	EWFH490TZSSD1	EWFH540TZSSD1	EWFH400TZSSD2	EWFH470TZSSD2	EWFH535TZSSD2	EWFH595TZSSD2	EWFH630TZSSD2	EWFH690TZSSD2	EWFH740TZSSD2	EWFH795TZSSD2	EWFH855TZSSD2	EWFH910TZSSD2	EWFH980TZSSD2	EWFHC10TZSSD2	EWFHC11TZSSD2	EWFHC12TZSSD2	EWFHH12TZSSD2	EWFHH13TZSSD2	EWFHC14TZSSD2	EWFHC15TZSSD2	EWFHH15TZSSD2
Manufacturing stage	1,53	1,40	1,22	1,17	1,05	0,98	0,90	1,02	1,56	1,34	1,27	1,13	1,07	1,09	1,03	1,03	1,00	0,98	0,95	0,95	0,93	0,84	0,94	0,85	0,60	0,62	0,59
Distribution stage	1,53	1,40	1,22	1,17	1,05	0,98	0,90	1,02	1,56	1,34	1,27	1,13	1,07	1,09	1,03	1,03	1,00	0,98	0,95	0,95	0,93	0,84	0,94	0,85	0,60	0,62	0,59
Installation stage	0,11	0,12	0,13	0,18	0,20	0,22	0,24	0,30	0,22	0,26	0,28	0,36	0,38	0,43	0,45	0,53	0,57	0,65	0,76	0,88	0,94	1,02	1,12	1,19	1,36	1,49	1,55
Use stage	1,16	1,20	1,23	1,19	1,32	1,28	1,33	1,35	1,53	1,21	1,22	1,82	1,27	1,21	1,23	1,23	1,27	1,27	1,32	1,84	1,30	1,42	1,06	1,11	1,12	1,12	1,15
Maintenance stage	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
EOL stage	1,52	1,39	1,22	1,17	1,05	0,98	0,90	1,01	1,56	1,34	1,27	1,13	1,07	1,09	1,03	1,03	1,00	0,98	0,95	0,95	0,93	0,84	0,94	0,85	0,60	0,62	0,59
Extrapolation coefficient for declared unit	EWFH240TZSSD1	EWFH265TZSSD1	EWFH295TZSSD1	EWFH370TZSSD1	EWFH415TZSSD1	EWFH450TZSSD1	EWFH490TZSSD1	EWFH540TZSSD1	EWFH400TZSSD2	EWFH470TZSSD2	EWFH535TZSSD2	EWFH595TZSSD2	EWFH630TZSSD2	EWFH690TZSSD2	EWFH740TZSSD2	EWFH795TZSSD2	EWFH855TZSSD2	EWFH910TZSSD2	EWFH980TZSSD2	EWFHC10TZSSD2	EWFHC11TZSSD2	EWFHC12TZSSD2	EWFHH12TZSSD2	EWFHH13TZSSD2	EWFHC14TZSSD2	EWFHC15TZSSD2	EWFHH15TZSSD2
Manufacturing stage	0,31	0,31	0,31	0,37	0,37	0,37	0,37	0,46	0,53	0,53	0,54	0,57	0,57	0,65	0,65	0,70	0,72	0,75	0,79	0,84	0,88	0,86	1,05	1,00	0,76	0,80	0,80
Distribution stage	0,31	0,31	0,31	0,37	0,37	0,37	0,37	0,46	0,53	0,53	0,54	0,57	0,57	0,65	0,65	0,70	0,72	0,75	0,79	0,84	0,88	0,86	1,05	1,00	0,76	0,80	0,80
Installation stage	0,52	0,52	0,52	0,59	0,59	0,59	0,59	0,66	0,66	0,66	0,66	0,72	0,72	0,72	0,72	0,79	0,79	0,85	0,92	1,00	1,00	1,00	1,00	1,00	1,08	1,15	1,15
Use stage	0,24	0,27	0,31	0,37	0,46	0,48	0,55	0,61	0,52	0,48	0,53	0,91	0,67	0,72	0,77	0,83	0,92	0,98	1,10	1,62	1,23	1,45	1,19	1,32	1,41	1,46	1,56
Maintenance stage	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
EOL stage	0,31	0,31	0,31	0,36	0,36	0,37	0,37	0,46	0,53	0,53	0,54	0,57	0,57	0,64	0,64	0,70	0,72	0,75	0,79	0,84	0,87	0,86	1,05	1,00	0,76	0,80	0,80

HOMOGENEOUS ENVIRONMENTAL FAMILIES

Extrapolation coefficient for functional unit	EWFH220TZSD1	EWFH230TZSD1	EWFH275TZSD1	EWFH300TZSD1	EWFH350TZSD1	EWFH400TZSD1	EWFH470TZSD1	EWFH515TZSD1	EWFH540TZSD1	EWFH620TZSD1	EWFH465TZSD2	EWFH545TZSD2	EWFH600TZSD2	EWFH645TZSD2	EWFH700TZSD2	EWFH750TZSD2	EWFH790TZSD2	EWFH840TZSD2	EWFH900TZSD2	EWFH975TZSD2	EWFH10TZSD2	EWFH11TZSD2	EWFH12TZSD2	EWFH13TZSD2
Manufacturing stage	1,00	0,94	1,39	1,28	1,25	1,10	1,17	1,09	0,93	0,80	1,45	1,29	1,18	1,20	0,87	1,15	1,14	1,07	1,03	0,99	0,97	1,00	0,98	0,65
Distribution stage	1,00	0,94	1,39	1,28	1,25	1,10	1,17	1,09	0,93	0,80	1,45	1,29	1,18	1,20	0,87	1,15	1,14	1,07	1,03	0,99	0,97	1,00	0,98	0,65
Installation stage	0,09	0,09	0,12	0,13	0,17	0,20	0,26	0,28	0,30	0,34	0,29	0,33	0,37	0,39	0,42	0,50	0,57	0,60	0,64	0,76	0,91	1,00	1,16	1,34
Use stage	1,04	1,07	1,10	1,10	0,98	1,08	1,06	1,12	0,98	1,05	1,08	1,33	1,06	1,02	1,03	1,00	1,02	1,04	1,07	1,18	1,16	1,00	1,03	1,05
Maintenance stage	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
EOL stage	0,99	0,94	1,39	1,28	1,25	1,10	1,17	1,09	0,92	0,80	1,44	1,29	1,18	1,20	0,87	1,15	1,14	1,07	1,03	0,99	0,97	1,00	0,98	0,65
Extrapolation coefficient for declared unit	EWFH220TZSD1	EWFH230TZSD1	EWFH275TZSD1	EWFH300TZSD1	EWFH350TZSD1	EWFH400TZSD1	EWFH470TZSD1	EWFH515TZSD1	EWFH540TZSD1	EWFH620TZSD1	EWFH465TZSD2	EWFH545TZSD2	EWFH600TZSD2	EWFH645TZSD2	EWFH700TZSD2	EWFH750TZSD2	EWFH790TZSD2	EWFH840TZSD2	EWFH900TZSD2	EWFH975TZSD2	EWFH10TZSD2	EWFH11TZSD2	EWFH12TZSD2	EWFH13TZSD2
Manufacturing stage	0,18	0,18	0,32	0,32	0,37	0,37	0,46	0,46	0,42	0,42	0,58	0,59	0,60	0,65	0,52	0,73	0,76	0,76	0,78	0,82	0,89	1,00	1,05	0,76
Distribution stage	0,18	0,18	0,32	0,32	0,37	0,37	0,46	0,46	0,42	0,42	0,58	0,59	0,60	0,65	0,52	0,73	0,76	0,76	0,78	0,82	0,89	1,00	1,05	0,76
Installation stage	0,46	0,46	0,52	0,52	0,59	0,59	0,66	0,66	0,66	0,66	0,72	0,72	0,72	0,72	0,72	0,79	0,85	0,85	0,85	0,92	1,00	1,00	1,08	1,15
Use stage	0,19	0,21	0,26	0,28	0,29	0,36	0,42	0,48	0,44	0,55	0,43	0,61	0,54	0,55	0,61	0,64	0,68	0,74	0,81	0,97	1,06	1,00	1,11	1,22
Maintenance stage	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
EOL stage	0,18	0,18	0,32	0,32	0,37	0,37	0,46	0,46	0,42	0,42	0,58	0,59	0,60	0,65	0,51	0,73	0,76	0,76	0,78	0,82	0,89	1,00	1,05	0,76

HOMOGENEOUS ENVIRONMENTAL FAMILIES

Extrapolation coefficient for functional unit	EWFH225TZPSD1	EWFH265TZPSD1	EWFH295TZPSD1	EWFH340TZPSD1	EWFH395TZPSD1	EWFH435TZPSD1	EWFH490TZPSD1	EWFH545TZPSD1	EWFH500TZPSD2	EWFH540TZPSD2	EWFH615TZPSD2	EWFH645TZPSD2	EWFH700TZPSD2	EWFH770TZPSD2	EWFH850TZPSD2	EWFH900TZPSD2	EWFH960TZPSD2	EWFH107TZPSD2	EWFH110TZPSD2	EWFH111TZPSD2	EWFH127TZPSD2	EWFH225TZPSD1	EWFH265TZPSD1	EWFH295TZPSD1
Manufacturing stage	1,14	1,62	1,47	1,62	1,39	1,36	1,20	1,01	1,42	1,44	1,41	1,35	1,24	1,20	1,14	1,07	0,96	1,04	1,04	1,07	0,78	1,14	1,62	1,47
Distribution stage	1,14	1,62	1,47	1,62	1,39	1,36	1,20	1,01	1,42	1,44	1,41	1,35	1,24	1,20	1,14	1,07	0,96	1,04	1,04	1,07	0,78	1,14	1,62	1,47
Installation stage	0,10	0,13	0,15	0,19	0,22	0,26	0,30	0,33	0,31	0,36	0,41	0,43	0,46	0,55	0,66	0,70	0,92	0,85	0,98	1,06	1,18	0,10	0,13	0,15
Use stage	0,98	0,95	0,99	0,90	0,95	1,24	0,98	0,90	1,03	0,95	0,98	0,91	0,94	0,97	0,96	1,01	1,09	1,04	1,04	0,97	0,92	0,98	0,95	0,99
Maintenance stage	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
EOL stage	1,13	1,62	1,47	1,62	1,39	1,36	1,20	1,01	1,42	1,44	1,41	1,35	1,24	1,20	1,14	1,07	0,96	1,04	1,04	1,07	0,78	1,13	1,62	1,47
Extrapolation coefficient for declared unit	EWFH225TZPSD1	EWFH265TZPSD1	EWFH295TZPSD1	EWFH340TZPSD1	EWFH395TZPSD1	EWFH435TZPSD1	EWFH490TZPSD1	EWFH545TZPSD1	EWFH500TZPSD2	EWFH540TZPSD2	EWFH615TZPSD2	EWFH645TZPSD2	EWFH700TZPSD2	EWFH770TZPSD2	EWFH850TZPSD2	EWFH900TZPSD2	EWFH960TZPSD2	EWFH107TZPSD2	EWFH110TZPSD2	EWFH111TZPSD2	EWFH127TZPSD2	EWFH225TZPSD1	EWFH265TZPSD1	EWFH295TZPSD1
Manufacturing stage	0,22	0,37	0,37	0,46	0,46	0,49	0,49	0,46	0,60	0,66	0,73	0,73	0,73	0,78	0,82	0,82	0,89	0,89	0,94	1,05	0,80	0,22	0,37	0,37
Distribution stage	0,22	0,37	0,37	0,46	0,46	0,49	0,49	0,46	0,60	0,66	0,73	0,73	0,73	0,78	0,82	0,82	0,89	0,89	0,94	1,05	0,80	0,22	0,37	0,37
Installation stage	0,52	0,59	0,59	0,66	0,66	0,72	0,72	0,72	0,72	0,79	0,79	0,79	0,79	0,85	0,92	0,92	1,00	1,00	1,08	1,08	1,15	0,52	0,59	0,59
Use stage	0,19	0,21	0,25	0,26	0,31	0,44	0,40	0,41	0,44	0,43	0,51	0,49	0,56	0,63	0,69	0,77	1,01	0,88	0,94	0,95	0,95	0,19	0,21	0,25
Maintenance stage	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
EOL stage	0,22	0,37	0,37	0,46	0,46	0,49	0,49	0,46	0,60	0,66	0,73	0,73	0,73	0,78	0,82	0,82	0,89	0,89	0,94	1,05	0,80	0,22	0,37	0,37

ABOUT THE MANUFACTURER

PEP AUTHOR AND CONTRIBUTORS

Manufacturer	Daikin Applied Europe SpA
PEP author	Daikin Applied Europe SpA
PEP verifier	TUV SUD (VH42)
PEP program operator	PEP ECOPASSPORT®
Background data	This PEP is based on Ecoinvent 3.10.1 and One Click LCA databases.
LCA software	The LCA and PEP have been created using One Click LCA. The environmental impacts were calculated according to Environmental Footprint 3.1 method.