


PRODUCT ENVIRONMENTAL PROFILE

HOT WATER RADIATORS



TUBULAR ARDESIA



Registration number: CORD-00004-V01.03-EN	Drafting rules : «PCR-ed4-EN-2021 09 06 » Supplemented by «PSR-0011-ed2.0 EN-2023 06 06»
Verifier accreditation number : VH50	Information and reference document: www.pep-ecopassport.org
Date of issue: 10-2025	Validity period: 5 years
Independent verification of the declaration and data in compliance with ISO 14025: 2006	
Internal <input type="checkbox"/>	External <input checked="" type="checkbox"/>
The PCR review was conducted by a panel of experts chaired by Julie Orgelet (DDemain)	
PEPs are compliant with NF C08-100-1:2022 and EN 50693:2019 or NF E38-500:2022.	
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"	
	

COMPANY INFORMATION

General Information	Cordivari Srl - Zona Ind.le Pagliare Morro D'Oro Snc 64020 (TE) - Italia
Legal contact in the company	info@cordivari.it

Cordivari Srl is one of the leading Italian companies in the hydro-thermal-sanitary sector, specializing in the production of hydrothermal systems for domestic, civil, and industrial applications. The company continuously renews its commitment by focusing on developing products and solutions that combine efficiency, reliability, and environmental sustainability. Cordivari is certified according to UNI EN ISO 9001, UNI EN ISO 14001, and UNI EN ISO 45001 standards, implementing an integrated management system that ensures high quality standards and full customer satisfaction.

REFERENCE PRODUCT

Product	ARDESIA COL.3 EL. 6
Reference product category	Hot water radiators
Subcategory	Passive devices - Static hot water radiator
Output (W)	1081 ($\Delta t=50^{\circ}C$)
Dimensions (mm)	276X1800
Finish	With epoxy polyester powders with DIN 55900-1,-2 certified process
Functional unit	"To produce 1 kW of heating as defined by the manufacturer, according to the reference usage scenario and during the 50 years reference lifetime of the product"

TECHNICAL CHARACTERISTICS

Product mass (including packaging)	22,359 kg
Packaging mass	0,661 kg
Reference lifetime	50 years

CONSTITUENT MATERIALS

The total mass of the product is 22,359 kg, including 21,698 kg of product and 0,661 kg of packaging. The constituent materials are:

Constituent materials	Metals		Plastics		Other materials	
	Carbon steel	93,8%	LDPE shrink wrap	0,1%	Epoxy-polyester powder	3,2%
				Cardboard (100% recycled content)	2,9%	
Total	93,8%	Total	0,1%	Total	6,1%	

LIFE CYCLE ANALYSIS METHODOLOGY

Name and version of LCA software	openLCA version 2.4				
Version of LCA software database	Ecoinvent v.3.11				
Temporal Representativeness	Primary data collected in the reference period 01/01/2024 -31/12/2024				
Technological Representativeness	Primary data collected from the manufacturing plant in Italy through the technical documentation of the radiator (material information and supplier data)				
Geographical Representativeness	MANUFACTURING	DISTRIBUTION	INSTALLATION	USE	END OF LIFE
	Italy/Europe	Europe	Europe	Europe	Europe
Energy Models	MANUFACTURING STAGE (MODULE A3)		Electricity, low voltage, residual mix Italy electricity, low voltage		
			Electricity production, photovoltaic, 570kWp open ground installation, multi-Si electricity, low voltage Italy		

The life cycle analysis on which this Product Environmental Profile (PEP) is based is carried out in compliance with the criteria imposed by PCR- ed4-EN-2021 09 06 of the PEP ecopassport® Program. The functional unit and the scenarios of distribution, use, and waste treatment are in accordance with the assumptions established in PSR-0011-ed2.0 EN-2023 06 06.

ADDITIONAL ENVIRONMENTAL INFORMATION

Manufacturing	Produced in an ISO 14001 certified plant in Italy. Components come from Europe. Raw materials and their transport to the production site, various production phases of the finished product, and waste treatment were considered.
Distribution	Product and packaging delivery: 2500 km by truck (B2B / B2C)
Installation	The product does not require any special installation procedure as it is manually performed by a professional with portable tools and does not require energy. This phase includes the end-of-life treatment of the packaging according to the PSR-0011-ed2.0 EN-2023 06 06 standards.
Usage	The hot water radiator does not require any maintenance or care during the use phase. Additionally, once installed, no energy consumption is expected.
End of Life	To model the end-of-life phase of the product, the Ecosystem database was used, in accordance with PSR-0011-ed2.0 EN-2023 06 06. Therefore, the data relating to transport, recycling, recovery, incineration and landfill rates provided by this source were applied, in line with the specific indications for electrical and electronic products. According to the sectoral convention, the end-of-life transport phase is considered assuming a 100 km journey by truck.

ENVIRONMENTAL IMPACTS

The environmental impact assessment covers the following phases of the product life cycle: Manufacturing (A1-A3), Distribution (A4), Installation (A5), Use (B1-B7), End of life (C1-C4), and benefits and loads beyond the system boundaries (D).

Calculations were performed using OpenLCA version 2.4 software and Ecoinvent v.3.11 database. The applied method complies with the EN15804+A2 standard and is based on the EF 3.1 methodology.

The PEP was developed considering the emission of a thermal power of 1 kW. The impact of the life cycle phases of the product installed in a real situation must be calculated by the user of the declaration by multiplying the considered impact by the total heating capacity of the device.

In the context of the life cycle analysis of a building, modules from B1 to B7 must be declared. For this product, the impact of the use phase is zero (PSR-0011-ed2.0-EN 2023 06 06).

MANDATORY ENVIRONMENTAL IMPACT INDICATORS:
Per kW corresponding to the functional unit

IMPACT CATEGORY	UNIT OF MEASUREMENT	TOTAL (modulo D excluded)	MANUFACTURING A1-A3	DISTRIBUTION A4	INSTALLATION A5	USE B1-B7	END OF LIFE C1-C4	BENEFITS AND CHARGES BEYOND THE SYSTEM'S BOUNDARIES D
Global Warming Potential - biogenic (GWP-biogenic)	kg CO ₂ -eq	2,91E+00	-9,02E-01	6,71E-03	3,81E+00	0,00E+00	2,60E-04	1,21E-02
Global Warming Potential - fossil fuels (GWP-fossil)	kg CO ₂ -eq	7,96E+01	6,95E+01	9,65E+00	7,23E-02	0,00E+00	3,75E-01	-3,09E+01
Global Warming Potential - land use and land use change (GWP-luluc)	kg CO ₂ -eq	1,81E-01	1,78E-01	3,25E-03	2,28E-05	0,00E+00	1,26E-04	-1,63E-02
Global Warming Potential - total (GWP-total)	kg CO ₂ -eq	8,27E+01	6,88E+01	9,66E+00	3,88E+00	0,00E+00	3,75E-01	-3,09E+01
Abiotic depletion potential - fossil resources (ADPF)	MJ	9,39E+02	7,95E+02	1,37E+02	6,27E-01	0,00E+00	5,32E+00	-3,16E+02
Abiotic depletion potential - non-fossil resources (ADPE)	kg Sb-eq	6,04E-04	5,69E-04	3,39E-05	2,24E-07	0,00E+00	1,32E-06	-2,33E-04
Acidification potential, Accumulated Exceedance (AP)	mol H ⁺ -eq	3,13E-01	2,92E-01	2,07E-02	2,23E-04	0,00E+00	8,04E-04	-1,29E-01
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11-eq	1,04E-06	8,24E-07	2,10E-07	7,73E-10	0,00E+00	8,17E-09	-1,27E-07
Eutrophication potential - freshwater (EP-freshwater)	kg P-eq	3,54E-02	3,47E-02	6,70E-04	7,50E-06	0,00E+00	2,60E-05	-1,68E-02
Eutrophication potential - marine (EP-marine)	kg N-eq	6,52E-02	5,99E-02	4,99E-03	1,20E-04	0,00E+00	1,94E-04	-2,82E-02
Eutrophication potential - terrestrial (EP-terrestrial)	mol N-eq	6,77E-01	6,21E-01	5,39E-02	8,33E-04	0,00E+00	2,09E-03	-3,04E-01
Photochemical Ozone Creation Potential (POCP)	kg NMVOC-eq	2,52E-01	2,17E-01	3,29E-02	3,40E-04	0,00E+00	1,28E-03	-1,00E-01
Water (user) deprivation potential (WDP)	m ³ world-eq deprived	3,48E+01	3,40E+01	7,28E-01	1,10E-02	0,00E+00	2,82E-02	-8,70E+00

OPTIONAL ENVIRONMENTAL IMPACT INDICATORS:

Per kW corresponding to the functional unit

IMPACT CATEGORY	UNIT OF MEASUREMENT	TOTAL (modulo D excluded)	MANUFACTURING A1-A3	DISTRIBUTION A4	INSTALLATION A5	USE B1-B7	END OF LIFE C1-C4	BENEFITS AND CHARGES BEYOND THE SYSTEM'S BOUNDARIES D
Ecotoxicity (fresh water)	CTUe	4,80E+02	4,58E+02	1,84E+01	2,48E+00	0,00E+00	7,15E-01	-1,90E+02
Human toxicity, non-carcinogenic effects	CTUh	6,94E-07	6,04E-07	8,65E-08	9,12E-10	0,00E+00	3,36E-09	-2,55E-07
Human toxicity, carcinogenic effects	CTUh	7,08E-08	6,90E-08	1,62E-09	1,97E-11	0,00E+00	6,30E-11	-3,68E-08
Ionizing radiation, human health	kBq U235-eq	3,88E+00	3,70E+00	1,66E-01	2,84E-03	0,00E+00	6,43E-03	-6,42E-01
Emission of fine particles	Disease incidence	6,16E-06	5,41E-06	7,23E-07	4,39E-09	0,00E+00	2,81E-08	-3,05E-06
Impacts related to land use/soil quality	Dimensionless	4,31E+02	3,45E+02	8,23E+01	2,84E-01	0,00E+00	3,20E+00	-1,05E+02

INDICATORS DESCRIBING OUTPUT FLOWS:

Per kW corresponding to the functional unit

IMPACT CATEGORY	UNIT OF MEASUREMENT	TOTAL (modulo D excluded)	MANUFACTURING A1-A3	DISTRIBUTION A4	INSTALLATION A5	USE B1-B7	END OF LIFE C1-C4	BENEFITS AND CHARGES BEYOND THE SYSTEM'S BOUNDARIES D
Components for re-use (CRU)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported electrical energy (EEE)	MJ	1,37E-01	0,00E+00	0,00E+00	1,37E-01	0,00E+00	0,00E+00	0,00E+00
Exported thermal energy (EET)	MJ	2,72E-01	0,00E+00	0,00E+00	2,72E-01	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery (MER)	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling (MFR)	kg	2,63E+00	2,63E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

INVENTORY FLOW INDICATORS:

Per kW corresponding to the functional unit

IMPACT CATEGORY	UNIT OF MEASUREMENT	TOTAL (modulo D excluded)	MANUFACTURING A1-A3	DISTRIBUTION A4	INSTALLATION A5	USE B1-B7	END OF LIFE C1-C4	BENEFITS AND CHARGES BEYOND THE SYSTEM'S BOUNDARIES D
Total use of non renewable primary energy resources (PENRT)	<i>MJ</i>	9,39E+02	7,96E+02	1,37E+02	6,27E-01	0,00E+00	5,32E+00	-3,16E+02
Total use of renewable primary energy resources (PERT)	<i>MJ</i>	1,09E+02	1,06E+02	2,26E+00	3,08E-02	0,00E+00	8,78E-02	-3,02E+01
Use of net fresh water (FW)	<i>m3</i>	7,71E-01	7,53E-01	1,68E-02	-3,03E-05*	0,00E+00	6,51E-04	-1,82E-01
Use of non renewable primary energy resources used as energy carrier (PENRE)	<i>MJ</i>	9,34E+02	7,91E+02	1,37E+02	8,88E-01	0,00E+00	5,32E+00	-3,16E+02
Use of non renewable primary energy resources used as raw materials (PENRM)	<i>MJ</i>	4,48E+00	4,74E+00	0,00E+00	-2,61E-01	0,00E+00	0,00E+00	0,00E+00
Use of non renewable secondary fuels (NRSF)	<i>MJ</i>	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of renewable primary energy resources used as energy carrier (PERE)	<i>MJ</i>	8,42E+01	8,10E+01	2,26E+00	8,87E-01	0,00E+00	8,78E-02	-3,02E+01
Use of renewable primary energy resources used as raw materials (PERM)	<i>MJ</i>	2,46E+01	2,54E+01	0,00E+00	-8,57E-01	0,00E+00	0,00E+00	0,00E+00
Use of renewable secondary fuels (RSF)	<i>MJ</i>	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of secondary materials (SM)	<i>kg</i>	4,54E+00	4,54E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

*The negative value comes from the Ecoinvent v.3.11 datasets used " treatment of waste polyethylene, sanitary landfill | waste polyethylene | Cutoff, S" and "treatment of waste paperboard, sanitary landfill | waste paperboard | Cutoff, S"

INDICATORS DESCRIBING CATEGORIES OF WASTE:
Per kW corresponding to the functional unit

IMPACT CATEGORY	UNIT OF MEASUREMENT	TOTAL (modulo D excluded)	MANUFACTURING A1-A3	DISTRIBUTION A4	INSTALLATION A5	USE B1-B7	END OF LIFE C1-C4	BENEFITS AND CHARGES BEYOND THE SYSTEM'S BOUNDARIES D
Hazardous waste disposed (HWD)	kg	2,00E+01	1,99E+01	1,41E-01	2,47E-03	0,00E+00	5,48E-03	-9,84E+00
Non hazardous waste disposed (NHWD)	kg	6,62E+01	6,44E+01	1,51E+00	2,44E-01	0,00E+00	5,86E-02	-2,55E+01
Radioactive waste disposed (RWD)	kg	9,87E-04	9,44E-04	4,09E-05	7,25E-07	0,00E+00	1,59E-06	-1,61E-04

OTHER INDICATORS:

	UNIT OF MEASUREMENT	TOTAL (modulo D excluded)
Biogenic carbon content of product	kg	0
Biogenic carbon content of packaging	kg	3,02E-01

EXTRAPOLATION FACTOR FOR HOMOGENEOUS ENVIRONMENTAL FAMILIES

The homogeneous family includes Ardesia Tubular radiators, characterized by a modular and highly customizable structure, available in different versions with 2 to 6 columns, Hygienic, and Special models excluding Ardesia Bench and Ardesia Electric radiators.

Since Ardesia Tubular Radiators are customizable and therefore coded case by case according to customer specifications, it is not possible to provide an exhaustive list of product codes for this homogeneous family.

To ensure consistency in the environmental impact assessment, extrapolation rules will be provided to allow the autonomous calculation of environmental coefficients for customized products. The technical data (mass, thermal output) necessary for calculating these extrapolation coefficients are available in the Ardesia Tubular Radiators catalogue and the related technical data sheets, accessible in the “Products” → “Radiators” → “Tubular” section of the official website www.cordivari.it, or can be provided upon request.

These coefficients are calculated in accordance with PCR-ed4-EN-2021 09 06 and PSR-0011-ed2.0 EN-2023 06 06 and are provided for the impact of the functional unit, i.e., the emission of 1 kW of heat. For each life cycle phase, the product impacts are calculated by multiplying the impacts of the declaration corresponding to the reference product by the extrapolation coefficient. The "total" column must be calculated by summing the environmental impacts of each life cycle phase.

EXTRAPOLATION COEFFICIENTS

Homogeneous Family Products	Dimension (mm)	Output (W)	Product weight including packaging (kg)	Mass packaging (kg)	Manufacturing A1-A3	Distribution A4	Installation A5	Use B1-B7	End of Life C1-C4	Benefits and charges beyond the system's boundaries D
ARDESIA	COL.3 EL. 6 276X1800	1081	22,359	0,661	1,00	1,00	1,00	-	1,00	1,00

MANUFACTURING STAGE

$$\text{Coefficient on the FU scale} = \frac{\text{Total mass of product considered including its packaging, excluding EEE components (kg)}}{\text{Total mass of the reference product of the range, including its packaging, excluding EEE components (kg)}} * \frac{\text{Power of the reference product (Kw)}}{\text{Power of the product considered (Kw)}}$$

DISTIBUTION STAGE

$$\text{Coefficient on the FU scale} = \frac{\text{Mass of the product considered (kg)}}{\text{Total mass of the reference product (kg)}} * \frac{\text{Power of the reference product (Kw)}}{\text{Power of the product considered (Kw)}}$$

INSTALLATION STAGE

$$\text{Coefficient on the FU scale} = \frac{\text{Mass of the packaging of the product considered (kg)}}{\text{Mass of the packaging of the reference product (kg)}} * \frac{\text{Power of the reference product (Kw)}}{\text{Power of the product considered (Kw)}}$$

USE STAGE

Module B1, B2, B3, B4, B5, B6 not applicable.

END OF LIFE STAGE

$$\text{Coefficient on the FU scale} = \frac{\text{Mass of the product considered, excluding packaging (kg)}}{\text{Mass of the reference product of the range, excluding packaging (kg)}} * \frac{\text{Power of the reference product (Kw)}}{\text{Power of the product considered (Kw)}}$$

BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES STAGE

$$\text{Coefficient on the FU scale} = \frac{\text{Mass of the product considered (kg)}}{\text{Mass of the reference product of the range (kg)}} * \frac{\text{Power of the reference product (Kw)}}{\text{Power of the product considered (Kw)}}$$

Tubolar Ardesia



8,27E+01 kg CO₂ eq.
Global Warming*



1,05E+03 MJ
Total use of primary energy*



6,04E-04 kg Sb-eq.
Depletion of abiotic resources*



7,71E-01 m³
Net use of fresh water*

*Results based on the lifecycle analysis



Extract from collective PEP ecopassport n° CORD-00004-V01.03-EN
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