



# ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025:2006 and  
EN 15804:2012+A2:2019/AC:2021 for:

## Gyproc® CarbonLow steel profiles



INTERNATIONAL EPD SYSTEM

The International EPD® System  
Programme operator: EPD international AB  
System Registration number:  
**EPD-IES-0023772**



**Version: 1**

**Date of publication: 2025/07/19**

**Validity: 5 years**

**Valid until: 2030/07/18**

**Scope of the EPD®: Nordic**

**EPD Type: Multiple Products (average results)**



Gyproc AB Sweden

An EPD may be updated or depublished if conditions change. To find the latest version of the EPD and confirm its validity, see [www.environdec.com](http://www.environdec.com)

## General information

### Programme information

<b>PROGRAMME:</b>	The International EPD® System
<b>ADDRESS:</b>	EPD International AB - Box 210 60 - SE-100 31 Stockholm - Sweden
<b>WEBSITE:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-MAIL:</b>	support@environdec.com

### PCR information

CEN standard EN 15804:2012 + A2:2019 serves as the Core Product Category Rules (PCR)

**Product category rules (PCR):** PCR 2019:14 Construction Products, version 2.0.1

**PCR review was conducted by:** The Technical Committee of the International EPD® System  
See [www.environdec.com](http://www.environdec.com) for a list of members.

**President:** Rob Rouwette (chair), Noa Meron (co-chair) - Contact via [info@environdec.com](mailto:info@environdec.com)

### Verification

External and independent ('third-party') verification of the declaration and data, according to ISO 14025:2006, via EPD verification through:

Individual EPD verification without a pre-verified LCA/EPD tool

**Independent third-party verification of the declaration and data, according to ISO 14025:2006:**

EPD process certification     EPD verification

**Third party verifier:** Dr. Andrew Norton, Renuables Ltd. E-mail: [a.norton@renuables.co.uk](mailto:a.norton@renuables.co.uk)

Approved by: The International EPD© System

**Procedure for follow-up of data during EPD validity involves third part verifier:**  Yes     No

### Ownership and limitations on use of EPD

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but published in different EPD programmes, may not be comparable. For two EPDs to be comparable, they shall be based on the same PCR (including the same first-digit version number) or be based on fully aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have identical scope in terms of included life-cycle stages (unless the excluded life-cycle stage is demonstrated to be insignificant); apply identical impact assessment methods (including the same version of characterization factors); and be valid at the time of comparison.



## Information about EPD owner

**Address and contact information of the EPD owner:** Saint-Gobain Sweden AB, Gyproc, Kalmarleden 50, 746 37 Bålsta, Sweden

**Description of the organization of the EPD owner:** Saint-Gobain Gyproc® Sweden offers a wide range of integrated solutions for the construction, gypsum-based solutions, namely plasterboard systems, and it's committed to developing solutions for so-called drywall construction.

**LCA practitioner:** Malin Dalborg, Weber, Norra Malmvägen 76, 191 62 Sollentuna

**Communication:** The intended use of this EPD is for B2B communication.

## Product information

### Product description and description of use

**Product name:** Gyproc® CarbonLow steel profiles

**EPD for multiple products:**  No  Yes, the EPD represents the following products:

*CarbonLow ER, CarbonLow XR, CarbonLow SK, CarbonLow TSK, CarbonLow TSKD, CarbonLow TSKD-3, CarbonLow GFR, CarbonLow GFS, CarbonLow S (see our product catalogue or website for product information)*

**UN CPC CODE:** 421 – Structural metal products and parts thereof

**Manufacturing site(s):** The production site is Ruukki Sverige AB in Anderslöv, Sweden for Saint-Gobain Sweden AB.

This Environmental Product Declaration (EPD®) describes the environmental impacts of **1 kg of installed Gyproc® CarbonLow steel profiles for ceiling and wall application** with a useful life of 50 years.

Gyproc® CarbonLow steel profiles is a product group that includes a large range of light-gauge steel framing products made of hot-dip galvanized steel. The product group includes studs, channels and other specialistic profiles that are designed as framing components for gypsum plasterboard systems as well as for the construction of ceilings. These metal profiles are all made using the same main raw material, galvanized steel coil graded DX51D+Z140. The profiles are produced in a thickness range of 0.4 – 3.0 mm.

### Technical data/physical characteristics

Parameter	Value / Description
Reaction to fire	A1
Density	7850 kg/m <sup>3</sup>
Yield strength	270-500 N/mm <sup>2</sup>
Steel grade	DX51D+Z140

## Declaration of the main product components and/or materials

All raw materials contributing more than 5% to any environmental impact are listed in the following table.

Product components/materials	Mass (kg)	Post-consumer material weight (%)	Biogenic material weight-% and kg C/kg (%)
Galvanized Steel	1 kg	78,7%	0 %
<b>Sum</b>	<b>1 kg</b>	<b>78,7%</b>	<b>0%</b>
Packaging materials	Mass (kg)	Mass vs. the product (%)	Weight biogenic carbon kg C/DU
LDPE film	0.0015	0.15%	0.0
Cardboard	0.0001	0%	0.00004
Wooden pallet	0.0167	0%	0.00685
<b>Sum</b>	<b>0.0183</b>		<b>0.00689</b>

At the date of issue of this declaration, there is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, in product or packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

## LCA calculation information

<b>TYPE OF EPD</b>	Cradle to gate with options, module C1-C4, module D and optional modules (A4–A5 + B1–B7).
<b>DECLARED UNIT</b>	1 kg of installed Gyproc® CarbonLow steel profiles for ceiling and wall application with a useful life of 50 years
<b>SYSTEM BOUNDARIES</b>	Cradle to grave + Module D = A + B + C + D
<b>REFERENCE SERVICE LIFE (RSL)</b>	The Reference Service Life (RSL) of the metal product is 50 years. This value of 50 years is the expected lifespan of the product without refurbishment and corresponds to the standard building design life.
<b>CUT-OFF RULES</b>	<p>In the case that there is not enough information, the process energy and materials representing less than 1% of the whole energy and mass used can be excluded (if they do not cause significant impacts). The addition of all the inputs and outputs excluded cannot be bigger than 5% of the whole mass and energy used, as well as of the emissions to environment.</p> <p>Flows related to human activities such as employee transport are excluded.</p> <p>The construction of plants, production of machines and transportation systems are excluded since the related flows are supposed to be negligible compared to the production of the building product when compared at these systems lifetime level.</p>
<b>ALLOCATIONS</b>	<p>Allocation criteria are based on mass.</p> <p>The polluter pays principle as well as the modularity principle have been followed.</p>
<b>GEOGRAPHICAL COVERAGE AND TIME PERIOD</b>	<p>Scope: Nordic (Sweden, Finland, Denmark and Norway)</p> <p>Data is representative of one production sites: Ruukki Anderslöv</p> <p>Data is representative of the year 2023</p>
<b>BACKGROUND DATA SOURCE</b>	<p>Databases from Sphera CUP2024.2 and ecoinvent v.3.10</p> <p>The supply of steel coil was modelled using a supplier EPD [9]</p>
<b>SOFTWARE</b>	Sphera LCA for experts (GaBi) 10.9

According to EN 15804:2012+A2:2019, EPDs of construction products may not be comparable if they do not comply with this standard. According to ISO 21930: 2017 EPDs might not be comparable if they are from different programmes.

## Data quality declaration

Data quality information according to EN 15941	
Data collection	2023
Sites used	Ruukki Anderslöv
Geography	Sweden, Finland, Denmark and Norway
Technology	Electric arc furnace + steel profiling
Averaging	100% production
LCI/LCA database	Sphera CUP2024.2 and ecoinvent v.3.10
EPD used	The supply of steel coil was modelled using a supplier EPD
Data Quality Scheme	EN 15804:2012+A2:2019, Annex E, Table E.2
Use of fair data with more than 30% of a core impact	None
Use of Poor relevant data	None
Use of very poor relevant data	No very poor data used

PROCESS	SOURCE TYPE	SOURCE	REFERENCE YEAR	DATA CATEGORY	SHARE OF PRIMARY DATA OF GWP-GHG RESULTS FOR A1-A3
<b>Raw Material from EPD</b>					
Steel coil	EPD	EPD-IES-0018719	2025	Primary/ Secondary data	36,1%
<b>Plant data</b>					
Electricity	Database	Sphera 2024.2/ecoinvent 3.10	<5 years old	Primary data	0,2%
Thermal Energy	Database	Sphera 2024.2	<5 years old	Primary data	2,3%
<b>Transport of RM</b>					
Transport of RM Packaging	Database	Sphera 2024.2	<5 years old	Primary data	0,0%
Transport of RM Product	Database	Sphera 2024.2	<5 years old	Primary data	10%
<b>Other processes</b>					
	Database	Sphera 2024.2/ecoinvent 3.10	<5 years old	Secondary data	0,0%
				Total share of primary data	48,7%

# Description of system boundaries

System boundaries (X=included. MND=module not declared)

	PRODUCT STAGE			CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
	Raw material supply	Transport	Manufacturing	Transport	Construction-Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-recovery
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	Nordic	Nordic	SE	Nordic	Nordic	-	-	-	-	-	-	-	Nordic	Nordic	Nordic	Nordic	Nordic
Specific data used	48,7 % GWP-GHG																
Variation products	0%																
Variation sites	0%																

## Life cycle stages



## A1-A3, Product stage

**Description of the stage:** The product stage is subdivided into 3 modules A1, A2 and A3 respectively Raw material supply, Transport to the manufacturer and “Manufacturing”.

### A1, Raw materials supply

This module includes the extraction and processing of all raw materials and packaging.

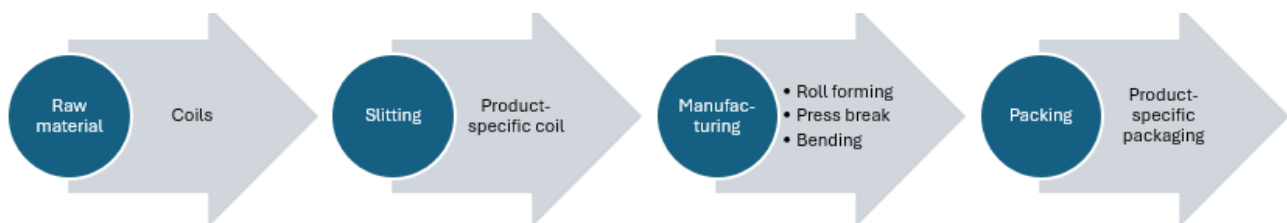
### A2, Transport to the manufacturer

This module includes the transportation of raw materials and packaging to the manufacturing site. The modelling includes road and boat transportation.

### A3, Manufacturing

This module includes the manufacturing of products. The processing of any waste arising from this stage is also included.

## Manufacturing process flow diagram



### Manufacturing in detail:

The figure above shows the main processes associated from Gyproc® CarbonLow steel profiles. The manufacture of steel profiles for drywall is a continuous process in which steel coils are fed into a moulding line. The steel coil is passed through a series of contoured rollers to produce the desired profile, whereby a wide range of sub-materials can be produced. The number of rollers depends on the complexity of the profile to be produced. A series of perforations are also made along the profile, which are necessary for the profile to be used during installation. The profiles formed in this way are cut into different lengths, strapped with plastic tape in packs of several units depending on the profile type and finally delivered within Nordic countries

## A4-A5, Construction process stage

**Description of the stage:** The construction process is divided into 2 modules: A4, Transport to the building site and A5, Installation in the building.

### A4, Transport to the building site

This module includes the transport from the manufacturing site to the building site. Transport is calculated based on a scenario with the parameters described in the following table.

PARAMETER	VALUE
<b>Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.</b>	Freight truck, maximum load weight of 27 t, real load of 24 t and consumption of 0.38 liters per km
<b>Distance</b>	613 km by truck and 13,7 km by ship
<b>Capacity utilisation (including empty returns)</b>	68% (30% empty returns)
<b>Bulk density of transported products</b>	7850 kg/m <sup>3</sup>
<b>Volume capacity utilisation factor</b>	1 (by default)

### A5, Installation in the building

This module includes: the installation of the product, the surplus of raw materials and packaging (cradle to gate) to compensate for the loss of product during the installation, the transport and management of packaging and product waste. The parameters are presented in the following table.

PARAMETER	VALUE/DESCRIPTION
<b>Ancillary materials for installation (specified by materials)</b>	None
<b>Water consumption</b>	None
<b>Other resource use</b>	None
<b>Quantitative description of energy type (regional mix) and consumption during the installation process</b>	None
<b>Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)</b>	CarbonLow steel profile: 0.05 kg (5 %) Packaging: 0.0183 kg (100%)
<b>Output materials (specified by type) as results of waste processing at the building site e.g., of collection for recycling, for energy recovering, disposal (specified by route)</b>	Steel scraps: 95% recycled and 5% landfilled. Packaging: LDPE 5% recycled and 95% landfilled, wooden pallet and cardboard are landfilled.
<b>Direct emissions to ambient air, soil, and water</b>	None

## B1-B7, Use stage (excluding potential savings)

**Description of the stage:** The use stage is divided into the following modules:

- B1, Use
- B2, Maintenance
- B3, Repair
- B4, Replacement
- B5, Refurbishment
- B6, Operational energy use
- B7, Operational water use

### Description of the scenarios and additional technical information:

The product has a reference service life of 50 years. It is assumed that the product will last in situ with no requirements for maintenance, repair, replacement, or refurbishment throughout this period. Therefore, it has no impact at this stage.

## C1-C4, End of Life Stage

**Description of the stage:** This stage includes the following modules:

- C1, Deconstruction, demolition: The de-construction and/or dismantling of the product take part of the demolition of the entire building. For the studied product, a small amount of energy is considered 0.05 MJ/kg
- C2, Transport to waste processing
- C3, Waste processing for reuse, recovery and/or recycling
- C4, Disposal, including provision and all transport, provision of all materials, products and related energy and water use

### Description of the scenarios and additional technical information for the end of life:

PARAMETER	VALUE/DESCRIPTION
<b>Collection process specified by type</b>	95% collected separately for recycling and 5% collected with mixed deconstruction and demolition waste to landfill.
<b>Recovery system specified by type</b>	0.95 kg for recycling
<b>Disposal specified by type</b>	0.05 kg to landfill
<b>Assumptions for scenario development (e.g. transportation)</b>	Metal waste is transported by truck with 24 t payload, using diesel as a fuel consuming 38 liter per 100 km Transport distance to landfill: 50 km Transport distance to recycling: 50 km

Corresponding 100% landfill and 100% recycling are added under "Alternative End of life scenarios"

## D, Reuse/recovery/recycling potential

This module includes the loads and benefits resulting from reuse, energy recovery or recycling beyond the system boundary. Module D considers:

- Inputs of secondary materials: recycled raw materials for product and packaging (pre- and post-consumer),
- Outputs of secondary materials: product and/or packaging sent to recycling,
- Exported energy (electric or thermal): product and/or packaging sent to incineration with energy recovery.

It was assumed that recovered steel scraps are used to produce steel billets/slabs produced via electric arc furnaces, which replace steel billets and slabs produced via blast furnaces.

## Environmental performance

As specified in EN 15804:2012+A2:2019/AC:2021 and the Product-Category Rules, the environmental impacts are declared and reported using the baseline characterization factors based on EF 3.1. Raw materials and energy consumption, as well as transport distances have been taken directly from the manufacturing plant.

The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

The results of the end-of-life stage (modules C1-C4) should be considered when using the results of the product stage (modules A1-A3).

**Disclaimer 1:** 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 following indicators:

- Resource use, mineral and metals [kg Sb eq.]
- Resource use, energy carriers [MJ]
- Water deprivation potential [m<sup>3</sup> world equiv.]
- Land use [Pt]
- Human toxicity (cancer) [CTUh]
- Human toxicity(noncancer) [CTUh]
- Ecotoxicity (freshwater) [CTUe]

**Disclaimer 2:** The impact category Ionizing radiation, human health [kBq U235 eq.] 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 material is also not measured by this indicator.








**Disclaimer 3:** The assumptions for the modules are in accordance with the project report (LCA study).

The following non-mandatory additional environmental indicators are not declared:

- Ecotoxicity freshwater [CTUe]
- Particulate Matter emissions [Disease incidence]
- Cancer human health effects [CTUh]
- Ionizing radiation - human health [kBq U235 eq.]
- Non-cancer human health effects [CTUh]
- Land Use [Pt].











Results refer to a declared unit of 1 kg of installed CarbonLow steel profiles. The following results refer to a single product manufactured in a single plant.

## Environmental Impacts









Environmental indicators		PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY RECYCLING
		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	Climate Change (total) [kg CO2 eq.]	8,88E-01	4,80E-02	7,31E-02	0	0	0	0	0	0	0	4,61E-03	3,17E-03	2,59E-03	7,55E-04	2,90E-01
	Climate Change (fossil) [kg CO2 eq.]	9,05E-01	4,71E-02	4,64E-02	0	0	0	0	0	0	0	4,61E-03	3,11E-03	2,55E-03	7,48E-04	2,90E-01
	Climate Change (biogenic) [kg CO2 eq.]	-2,11E-02	1,30E-04	2,66E-02	0	0	0	0	0	0	0	3,96E-06	8,77E-06	8,65E-06	2,16E-06	-4,49E-04
	Climate Change (land use change) [kg CO2 eq.]	3,26E-03	7,77E-04	1,70E-04	0	0	0	0	0	0	0	1,68E-07	5,26E-05	3,44E-05	4,49E-06	1,42E-04
	Ozone depletion [kg CFC-11 eq.]	4,12E-10	4,67E-15	2,65E-11	0	0	0	0	0	0	0	3,93E-16	3,16E-16	4,60E-15	2,02E-15	9,06E-11
	Acidification terrestrial and freshwater [Mole of H+ eq.]	3,21E-03	5,83E-05	1,68E-04	0	0	0	0	0	0	0	1,06E-05	1,80E-05	1,28E-05	5,31E-06	6,66E-04
	Eutrophication freshwater [kg P eq.]	1,60E-05	1,97E-07	8,05E-07	0	0	0	0	0	0	0	8,80E-10	1,34E-08	9,91E-09	1,70E-09	6,69E-08
	Eutrophication marine [kg N eq.]	9,34E-04	1,86E-05	4,94E-05	0	0	0	0	0	0	0	4,25E-06	8,78E-06	5,87E-06	1,37E-06	1,62E-04
	Eutrophication terrestrial [Mole of N eq.]	1,03E-02	2,25E-04	5,38E-04	0	0	0	0	0	0	0	4,66E-05	9,74E-05	6,49E-05	1,51E-05	1,74E-03
	Photochemical ozone formation - human health [kg NMVOC eq.]	2,71E-03	5,28E-05	1,43E-04	0	0	0	0	0	0	0	1,25E-05	1,69E-05	1,62E-05	4,19E-06	5,45E-04
	Resource use, mineral and metals [kg Sb eq.] <sup>1</sup>	5,75E-05	3,94E-09	2,88E-06	0	0	0	0	0	0	0	1,11E-10	2,67E-10	2,67E-09	4,85E-11	1,89E-08
	Resource use, energy carriers [MJ] <sup>1</sup>	1,30E+01	6,06E-01	6,67E-01	0	0	0	0	0	0	0	5,97E-02	4,09E-02	4,77E-02	9,87E-03	2,25E+00
	Water deprivation potential [m³ world equiv.] <sup>1</sup>	8,60E-03	6,89E-04	5,45E-04	0	0	0	0	0	0	0	1,25E-05	4,66E-05	4,87E-04	8,57E-05	3,18E-03

<sup>1</sup> 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


## Resources Use

Resources Use indicators	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				D REUSE, RECOVERY, RECYCLING
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
 Use of renewable primary energy (PERE) [MJ]	1,09E+01	5,10E-02	5,49E-01	0	0	0	0	0	0	0	2,97E-04	3,46E-03	5,08E-03	1,72E-03	-3,81E-01
 Primary energy resources used as raw materials (PERM) [MJ]	1,37E-03	0	6,85E-05	0	0	0	0	0	0	0	0	0	0	0	0
 Total use of renewable primary energy resources (PERT) [MJ]	1,09E+01	5,10E-02	5,49E-01	0	0	0	0	0	0	0	2,97E-04	3,46E-03	5,08E-03	1,72E-03	-3,81E-01
 Use of non-renewable primary energy (PENRE) [MJ]	1,29E+01	6,06E-01	6,60E-01	0	0	0	0	0	0	0	5,97E-02	4,09E-02	4,77E-02	9,87E-03	2,25E+00
 Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	1,76E-01	0	8,79E-03	0	0	0	0	0	0	0	0	0	0	0	0
 Total use of non-renewable primary energy resources (PENRT) [MJ]	1,31E+01	6,06E-01	6,69E-01	0	0	0	0	0	0	0	5,97E-02	4,09E-02	4,77E-02	9,87E-03	2,25E+00
 Input of secondary material (SM) [kg]	1,11E+00	0	5,57E-02	0	0	0	0	0	0	0	0	0	0	0	0
 Use of renewable secondary fuels (RSF) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
 Use of non-renewable secondary fuels (NRSF) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
 Use of net fresh water (FW) [m3]	8,46E-03	5,73E-05	4,26E-04	0	0	0	0	0	0	0	4,48E-07	3,88E-06	1,42E-05	2,62E-06	2,12E-04



## Waste Category & Output flows

Waste Category & Output Flows	PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				D REUSE, RECOVERY, RECYCLING
	A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
 Hazardous waste disposed (HWD) [kg]	4,06E-04	1,96E-11	2,51E-05	0	0	0	0	0	0	0	1,84E-12	1,32E-12	6,90E-12	2,46E-12	3,24E-05
 Non-hazardous waste disposed (NHWD) [kg]	8,86E-02	9,41E-05	7,44E-02	0	0	0	0	0	0	0	1,26E-05	6,36E-06	1,31E-05	5,01E-02	4,71E-03
 Radioactive waste disposed (RWD) [kg]	7,57E-04	7,83E-07	3,80E-05	0	0	0	0	0	0	0	6,74E-08	5,28E-08	6,00E-07	1,04E-07	-3,46E-05
 Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
 Materials for Recycling (MFR) [kg]	0	0	2,21E-03	0	0	0	0	0	0	0	9,50E-01	0	0	0	0
 Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
 Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
 Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

## Additional voluntary indicator (GWP total without biogenic CO<sub>2</sub>)

		PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVER Y RECYCLIN G
Environmental indicators		A1 / A2 / A3	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	GWP-GHG [kg CO <sub>2</sub> eq.] <sup>2</sup>	9,08E-01	4,77E-02	4,77E-02	0	0	0	0	0	0	0	4,58E-03	3,15E-03	2,56E-03	7,50E-04	2,89E-01

### Information on biogenic carbon content








		PRODUCT STAGE
Biogenic Carbon Content		A1 / A2 / A3
	Biogenic carbon content in product [kg]	0
	Biogenic carbon content in packaging [kg]	6,89E-03

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>.











The product does not contain any biogenic carbon. Regarding packaging, biogenic carbon is quantified due to cardboard and wooden pallet.

<sup>2</sup> The indicator includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product.









## Alternative End of life scenarios

Environmental indicators		Scenario 100% Landfill					Scenario 100% Recycling				
		END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE	END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
		C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal		D Reuse, recovery, recycling	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	
	Climate Change [kg CO2 eq.]	4,61E-03	3,17E-03	0	1,51E-02	1,89E+00	4,61E-03	3,17E-03	2,73E-03	0	2,06E-01
	Climate Change (fossil) [kg CO2 eq.]	4,61E-03	3,11E-03	0	1,50E-02	1,89E+00	4,61E-03	3,11E-03	2,68E-03	0	2,06E-01
	Climate Change (biogenic) [kg CO2 eq.]	3,96E-06	8,77E-06	0	4,32E-05	-2,83E-03	3,96E-06	8,77E-06	9,10E-06	0	-3,24E-04
	Climate Change (land use change) [kg CO2 eq.]	1,68E-07	5,26E-05	0	8,98E-05	9,22E-04	1,68E-07	5,26E-05	3,63E-05	0	1,01E-04
	Ozone depletion [kg CFC-11 eq.]	3,93E-16	3,16E-16	0	4,04E-14	8,55E-11	3,93E-16	3,16E-16	4,84E-15	0	9,08E-11
	Acidification terrestrial and freshwater [Mole of H+ eq.]	1,06E-05	1,80E-05	0	1,06E-04	4,33E-03	1,06E-05	1,80E-05	1,34E-05	0	4,73E-04
	Eutrophication freshwater [kg P eq.]	8,80E-10	1,34E-08	0	3,40E-08	2,19E-07	8,80E-10	1,34E-08	1,04E-08	0	5,89E-08
	Eutrophication marine [kg N eq.]	4,25E-06	8,78E-06	0	2,74E-05	1,05E-03	4,25E-06	8,78E-06	6,18E-06	0	1,15E-04
	Eutrophication terrestrial [Mole of N eq.]	4,66E-05	9,74E-05	0	3,01E-04	1,14E-02	4,66E-05	9,74E-05	6,83E-05	0	1,24E-03
	Photochemical ozone formation - human health [kg NMVOC eq.]	1,25E-05	1,69E-05	0	8,37E-05	3,50E-03	1,25E-05	1,69E-05	1,71E-05	0	3,89E-04
	Resource use, mineral and metals [kg Sb eq.] <sup>3</sup>	1,11E-10	2,67E-10	0	9,70E-10	3,67E-08	1,11E-10	2,67E-10	2,81E-09	0	1,80E-08
	Resource use, energy carriers [MJ] <sup>1</sup>	5,97E-02	4,09E-02	0	1,97E-01	1,44E+01	5,97E-02	4,09E-02	5,02E-02	0	1,61E+00
	Water deprivation potential [m <sup>3</sup> world equiv.] <sup>1</sup>	1,25E-05	4,66E-05	0	1,71E-03	1,65E-02	1,25E-05	4,66E-05	5,13E-04	0	2,48E-03

<sup>3</sup> 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

Resources Use indicators	Scenario 100% Landfill					Scenario 100% recycling				
	END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE	END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
 Use of renewable primary energy (PERE) [MJ] <sup>4</sup>	2,97E-04	3,46E-03	0	3,45E-02	-2,50E+00	2,97E-04	3,46E-03	5,35E-03	0	-2,69E-01
 Primary energy resources used as raw materials (PERM) [MJ] <sup>2</sup>	0	0	0	0	0	0	0	0	0	0
 Total use of renewable primary energy resources (PERT) [MJ] <sup>2</sup>	2,97E-04	3,46E-03	0	3,45E-02	-2,50E+00	2,97E-04	3,46E-03	5,35E-03	0	-2,69E-01
 Use of non-renewable primary energy (PENRE) [MJ] <sup>2</sup>	5,97E-02	4,09E-02	0	1,97E-01	1,44E+01	5,97E-02	4,09E-02	5,02E-02	0	1,61E+00
 Non-renewable primary energy resources used as raw materials (PENRM) [MJ] <sup>2</sup>	0	0	0	0	0	0	0	0	0	0
 Total use of non-renewable primary energy resources (PENRT) [MJ] <sup>2</sup>	5,97E-02	4,09E-02	0	1,97E-01	1,44E+01	5,97E-02	4,09E-02	5,02E-02	0	1,61E+00
 Use of secondary material (SM) [kg]	0	0	0	0	0	0	0	0	0	0
 Use of renewable secondary fuels (RSF) [MJ]	0	0	0	0	0	0	0	0	0	0
 Use of non-renewable secondary fuels (NRSF) [MJ]	0	0	0	0	0	0	0	0	0	0
 Use of net fresh water (FW) [m3]	4,48E-07	3,88E-06	0	5,23E-05	1,29E-03	4,48E-07	3,88E-06	1,50E-05	0	1,55E-04

<sup>4</sup> From EPD International Construction Product PCR 2.0 (Annex 3). Option B was retained to calculate the primary energy use indicators.

Waste Category & Output Flows	Scenario 100% landfill					Scenario 100% recycling				
	END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE	END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE LIFE CYCLE
	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal		C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	
 Hazardous waste disposed (HWD) [kg]	1,84E-12	1,32E-12	0	4,92E-11	3,24E-05	1,84E-12	1,32E-12	7,26E-12	0	3,24E-05
 Non-hazardous waste disposed (NHWD) [kg]	1,26E-05	6,36E-06	0	1,00E+00	2,87E-02	1,26E-05	6,36E-06	1,38E-05	0	3,45E-03
 Radioactive waste disposed (RWD) [kg]	6,74E-08	5,28E-08	0	2,07E-06	-2,27E-04	6,74E-08	5,28E-08	6,31E-07	0	-2,45E-05
 Components for re-use (CRU) [kg]	0	0	0	0	0	0	0	0	0	0
 Materials for Recycling (MFR) [kg]	0	0	0	0	0	1,00E+00	0	0	0	0
 Material for Energy Recovery (MER) [kg]	0	0	0	0	0	0	0	0	0	0
 Exported electrical energy (EEE) [MJ]	0	0	0	0	0	0	0	0	0	0
 Exported thermal energy (EET) [MJ]	0	0	0	0	0	0	0	0	0	0

## Additional information:

The Ruukki Anderslöv factory uses electricity with Guarantee of Origin certificate (GO's). Hence, the electricity mix considered for the manufacturing of the studied product is modelled according to the electricity mix described in the Guarantee of Origin certificate. The amount of electricity purchased with GO's covers 100% of the electricity consumption on the manufacturing site.

## Electricity information

Parameter	Information
<b>Location</b>	Electricity purchased by Ruukki Anderslöv
<b>Share of electricity covered by Guarantee of Origin</b>	100% of the energy consumption is covered by the GO
<b>Energy sources for electricity</b>	Wind 100% 2% transmission losses
<b>Dataset version</b>	Sphera CUP2024.2 ecoinvent 3.10 (medium voltage)
<b>Source of electricity mix</b>	Sphera/ecoinvent/ AIB report 2024/ IEA
<b>GHG-GWP CO<sub>2</sub> eq.</b>	0.013 kg of CO <sub>2</sub> eq/kWh

## Version history

This is the first version

## Abbreviations

AIB	Association of issuing bodies
DU	Declared unit
EPD	Environmental Product Declaration
eq.	equivalents
FU	Functional unit
g	gram
GJ	Giga Joules (as Net Calorific Value)
GHG	Green House Gases
GWP	Global Warming Potential
IOBC	Instantaneous Oxidation of Biogenic Carbon
EF	Environmental Footprint
GO's	Guaranty of origin
kg	kilogram
kWh	kilowatt-hour
L	liter
LCA	Life Cycle Assessment
LCI	Life Cycle Inventory Analysis
LCIA	Life Cycle Impact Assessment
MJ	Mega Joules (as Net Calorific Value)
PCR	Product Category Rules

RSL Reference Service Life (in years)  
ton metric ton

## References

1. ISO 14040:2006 Environmental Management-Life Cycle Assessment-Principles and framework.
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