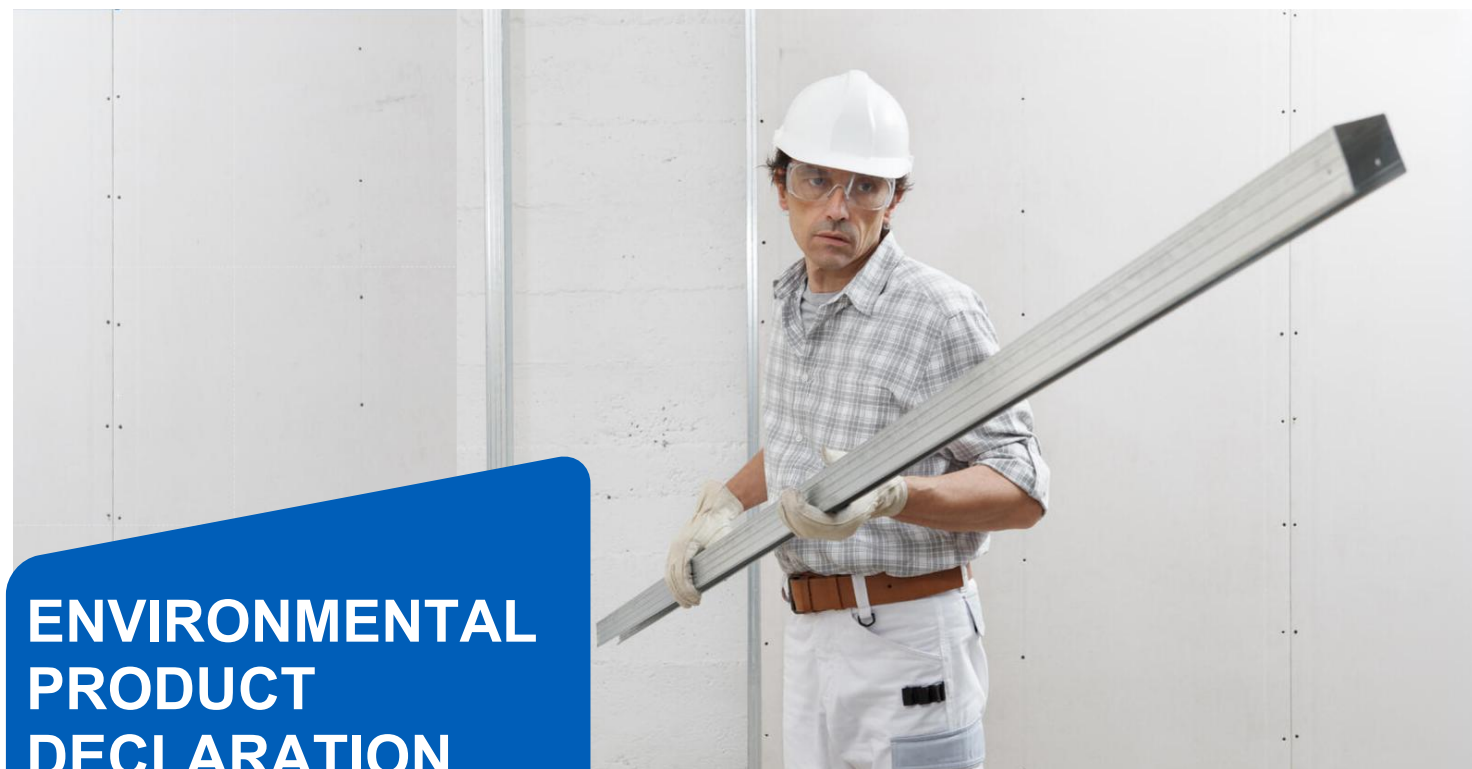




ENVIRONMENTAL PRODUCT DECLARATION

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

**RigiProfil®UW, RigiProfil®CW,
RigiProfil®CD, RigiProfil®UD
Plasterboard profiles**



INTERNATIONAL EPD SYSTEM

The International EPD® System
Programme operator: EPD international AB
Registration number: EPD-IES- 0030194:001

Version: 01

Date of publication: 2026/03/16

Validity: 5 years

Valid until: 2031/03/15

Scope of the EPD®: Europe



SAINT-GOBAIN CONSTRUCTION PRODUCTS,
S.R.O., Slovakia

An EPD may be updated or depublished if conditions change. To be find the latest version of the EPD and to confirm its validity, see www.environdec.com.

General information

Programme information

PROGRAMME:	The International EPD® System
ADDRESS:	EPD International AB - Box 210 60 - SE-100 31 Stockholm - Sweden
WEBSITE:	www.environdec.com
E-MAIL:	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 for a list of members.
President: Rob Rouwette (chair), Noa Meron (co-chair) - Contact via 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
- ☐ Individual EPD verification with a pre-verified LCA/EPD tool
- ☐ EPD process certification without a pre-verified LCA/EPD tool
- ☐ EPD process certification with a pre-verified LCA/EPD tool
- ☐ Fully pre-verified EPD tool

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

- ☐ EPD process certification ☒ EPD verification

Third party verifier: prof. Ing. Silvia Vilčeková, PhD., Silcert, s.r.o.
tel.+421907993033, Company: Silcert, s.r.o.

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 Construction Products, s.r.o., Stará Vajnorská 139, 831 04 Bratislava, Slovakia, poradenstvo@saint-gobain.com

Contact person: Vladimír Balent, vladimir.balent@saint-gobain.com

Description of the organization of the EPD owner:

The Rigips® brand is dedicated to the manufacture and distribution of plasterboard systems for a wide range of applications. It is part of one of the world's top 100 industrial companies, currently operating in more than 67 countries and employing over 180,000 people. Thanks to its experience and continuous product innovation, it is a global leader in the sustainable construction and housing markets.

Management system-related certification: ISO 9001, ISO 14001, ISO 50001, ISO 45001

LCA practitioner: Ana-Maria Dumitru (ana-maria.dumitru@saint-gobain.com) - Saint-Gobain România

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

Product information

Product description and description of use

Product name: RigiProfil® UW, RigiProfil® CW, RigiProfil® CD, RigiProfil® UD, Plasterboard profiles

Visual representation of the product:



UN CPC CODE: 421 – Fabricated Metal Products

Manufacturing site(s): Kovostroj a.s. Dobšiná, Čípová, 04925 Dobšiná, Slovakia

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

The RigiProfil® construction profile is used for ceiling structures and partition walls in dry construction. RigiProfil® construction profiles can be used with standard original Rigips accessories (brackets, hangers, connectors, etc.). The roughened surface of RigiProfil®s ensures better fastening of hangers, providing greater strength for wall and ceiling structures during use. When using RigiProfil®s, the classified fire resistance of Rigips construction systems is maintained, in addition to their mechanical properties and acoustic performance. For more information: <https://www.rigips.sk/konstrukcne-profil-y-na-sadrokarton-zakladny-prvok-kazdej-sadrokartonovej-konstrukcie>

Technical data/physical characteristics

Parameter	Value / Description
Reaction to fire	A1
Density	7850 kg/m ³
Yield strength	≥ 140 N/mm ²
Product thickness	0.6mm
Steel grade	DX51D
Protective layer	Z100

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	0%	0 %
Sum	1 kg	0%	
Packaging materials	Mass (kg)	Mass vs. the product (%)	Weight biogenic carbon kg C/DU
Polyethylene parts and straps (LDPE)	0.0009177	0.0918%	
Polypropylene parts and straps	0.0004013	0.0401%	
Wooden pallet	0.0054	0.5400%	0.002214

At the date of issue of this declaration, there is no “Substance of Very High Concern” (SVHC) in concentration above 0.1% by weight, and neither do their packaging, following the European REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals).

LCA calculation information

TYPE OF EPD	Cradle to gate with options, module C1-C4, module D and optional modules (A4–A5 + B1–B7).
FUNCTIONAL UNIT	1 kg of installed RigiProfil® UW, RigiProfil® CW, RigiProfil® CD, RigiProfil® UD metal for ceiling and wall application with a useful life of 50 years
SYSTEM BOUNDARIES	A1-A5, C1-C4 and D
REFERENCE SERVICE LIFE (RSL)	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.
CUT-OFF RULES	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. Flows related to human activities such as employee transport are excluded. 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.
ALLOCATIONS	Allocation criteria are based on mass. The polluter pays principle as well as the modularity principle have been followed.
GEOGRAPHICAL COVERAGE AND TIME PERIOD	Scope: Europe Data is representative of one production sites: Kovostroj a.s. Dobšiná Data is representative of the year 2023
BACKGROUND DATA SOURCE	Databases from Sphera CUP2024.2 and ecoinvent v.3.10 EF Package 3.1
SOFTWARE	Sphera LCA for experts (GaBi) 10

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	Data collection period 01/01/2023 to 31/12/2023
Sites used	Manufacturing site : Kovostroj a.s. Dobšiná
Geography	Produced in: Slovakia Sold in: Europe Use and disposal in: Europe
Technology	Galvanized steel sheets are loaded into slitter machines to achieve the required width for the section. Next, the material goes through patented technology to imprint the serration design onto the metal frames. Subsequently, it moves through the roll forming line to shape into the desired profiles (ceiling & partition profile).
Averaging	100% of production
LCI/LCA database	Sphera CUP2024.2 and ecoinvent v.3.10
EPD used	None
Data Quality Scheme	EN 15804:2012+A2:2019, Annex E, Table E.1
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

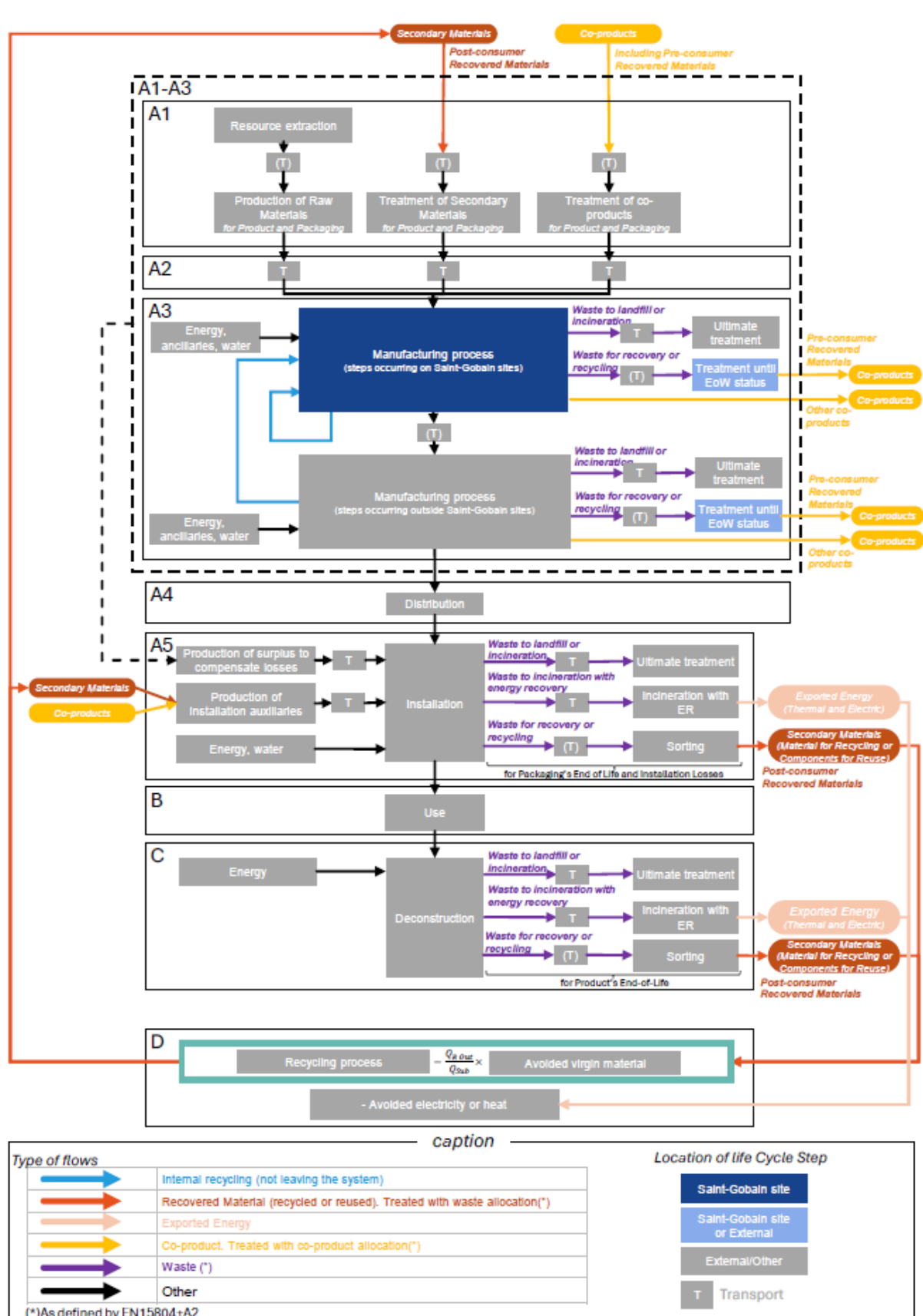
Share of primary data in the EPD	PROCESS	SOURCE TYPE	SOURCE	REFERENCE YEAR	DATA CATEGORY	SHARE OF PRIMARY DATA OF GWP-GHG RESULTS FOR A1-A3
Plant data						
100%	Electricity	Database	Sphera 2024.2/ecoinvent 3.10	<5 years old	Primary data	0.39%
100%	Emissions Specific	Collected data	EPD Owner	<5 years old	Primary data	0
100%	Thermal Energy	Database	Sphera 2024.2	<5 years old	Primary data	0.3%
Transport of RM						
0%	Transport of RM Packaging	Database	Sphera 2024.2	<5 years old	To be justified	0.0%
0%	Transport of RM Product	Database	Sphera 2024.2	<5 years old	To be justified	0
Other processes						
0%	Other processes	Database	Sphera 2024.2/ecoinvent 3.10	<5 years old	Secondary data	0.0%
Total share of primary data						0.69%

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	SK	SK	SK	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU

System boundaries when the end-of-waste state is reached:



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 transformation of raw materials and packaging.

A2, Transport to the manufacturer

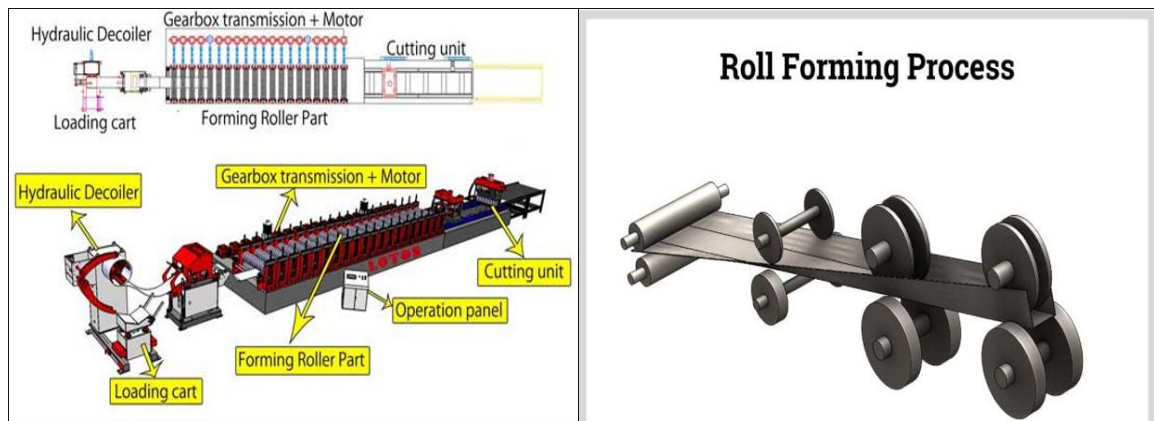
This module includes the transportation of raw materials and packaging to the manufacturing site. The modelling includes road transportation.

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

System diagram:



Manufacturing in detail:

The raw material undergoes quality checks upon arrival at the manufacturing facility. Following this, it is fed into slitter machines to achieve the required width for the section. Next, the material goes through patented technology to imprint the serration design onto the metal frames. Subsequently, it moves through the roll forming line to shape into the desired channel (ceiling & partition channel). Finally, the sections are bundled and stacked, ready for dispatch to various warehouses.

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
Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat, etc.	Freight truck, maximum load weight of 27 t, real load of 22 t and consumption of 0.38 liters per km
Distance	219 km
Capacity utilisation (including empty returns)	63% (30% empty returns)
Bulk density of transported products*	7850 kg/m ³
Volume capacity utilisation factor	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
Ancillary materials for installation (specified by materials)	Screws 0.0026 kg/kg frame
Water consumption	None
Other resource use	None
Quantitative description of energy type (regional mix) and consumption during the installation process	None
Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	Metal profil: 0.05 kg (5 %) Packaging: landfill
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)	Metal scraps: 95% recycled; 5% landfilled. Plastic straps: 51.5% recycled; 48.5% landfilled. Wooden bearers: 61.7% recycled; 38.3% landfilled.
Direct emissions to ambient air, soil, and water	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/m².
- 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
Collection process specified by type	100% collected with mixed deconstruction and demolition waste sent to landfill (including board, screws and jointing tape/compound)
Recovery system specified by type	0.95 kg for recycling (metal)
Disposal specified by type	0.05 kg to landfill (metal)
Assumptions for scenario development (e.g. transportation)	Metal waste is transported by truck with 24 t payload, using diesel as a fuel consuming 38 liters per 100 km Transport distance to landfill: 50 km Transport distance to recycling: 50 km

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,

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 [m³ 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 steel profile RigiProfil® UW, RigiProfil® CW, RigiProfil® CD, RigiProfil® UD. The following results refer to a single product manufactured in a single plant.

Environmental Impacts

		PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY, RECYCLING
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
	Climate Change [kg CO2 eq.]	2.88E+00	1.74E-02	6.65E-02	0	0	0	0	0	0	0	4.61E-03	3.17E-03	2.59E-03	7.55E-04	-1.40E+00
	Climate Change (fossil) [kg CO2 eq.]	2.89E+00	1.71E-02	5.83E-02	0	0	0	0	0	0	0	4.61E-03	3.11E-03	2.55E-03	7.48E-04	-1.40E+00
	Climate Change (biogenic) [kg CO2 eq.]	-6.23E-03	4.70E-05	8.22E-03	0	0	0	0	0	0	0	3.96E-06	8.77E-06	8.65E-06	2.16E-06	2.14E-03
	Climate Change (land use change) [kg CO2 eq.]	1.66E-03	2.82E-04	3.63E-05	0	0	0	0	0	0	0	1.68E-07	5.26E-05	3.44E-05	4.49E-06	-6.84E-04
	Ozone depletion [kg CFC-11 eq.]	2.37E-08	1.69E-15	4.75E-10	0	0	0	0	0	0	0	3.93E-16	3.15E-16	4.60E-15	2.02E-15	-1.49E-11
	Acidification terrestrial and freshwater [Mole of H+ eq.]	2.23E-02	1.91E-05	4.49E-04	0	0	0	0	0	0	0	1.06E-05	1.80E-05	1.27E-05	5.31E-06	-3.21E-03
	Eutrophication freshwater [kg P eq.]	1.27E-04	7.17E-08	2.54E-06	0	0	0	0	0	0	0	8.80E-10	1.34E-08	9.91E-09	1.70E-09	-1.32E-07
	Eutrophication marine [kg N eq.]	2.72E-03	6.33E-06	5.53E-05	0	0	0	0	0	0	0	4.25E-06	8.78E-06	5.87E-06	1.37E-06	-7.79E-04
	Eutrophication terrestrial [Mole of N eq.]	7.54E-02	7.71E-05	1.52E-03	0	0	0	0	0	0	0	4.66E-05	9.74E-05	6.49E-05	1.51E-05	-8.44E-03
	Photochemical ozone formation - human health [kg NMVOC eq.]	9.87E-03	1.78E-05	2.00E-04	0	0	0	0	0	0	0	1.25E-05	1.68E-05	1.62E-05	4.19E-06	-2.59E-03
	Resource use, mineral and metals [kg Sb eq.] ¹	5.26E-05	1.43E-09	1.05E-06	0	0	0	0	0	0	0	1.11E-10	2.67E-10	2.67E-09	4.85E-11	-1.86E-08
	Resource use, energy carriers [MJ] ¹	4.12E+01	2.19E-01	8.30E-01	0	0	0	0	0	0	0	5.97E-02	4.09E-02	4.77E-02	9.87E-03	-1.07E+01
	Water deprivation potential [m³ world equiv.] ¹	1.40E+00	2.50E-04	2.81E-02	0	0	0	0	0	0	0	1.25E-05	4.66E-05	4.87E-04	8.57E-05	-1.17E-02

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 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]	3.58E+00	1.85E-02	1.14E-01	0	0	0	0	0	0	0	2.97E-04	3.46E-03	5.08E-03	1.72E-03	1.86E+00
 Primary energy resources used as raw materials (PERM) [MJ]	4.06E-02	0.00E+00	-6.62E-02	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
 Total use of renewable primary energy resources (PERT) [MJ]	3.62E+00	1.85E-02	4.77E-02	0	0	0	0	0	0	0	2.97E-04	3.46E-03	5.08E-03	1.72E-03	1.86E+00
 Use of non-renewable primary energy (PENRE) [MJ]	4.11E+01	2.19E-01	8.29E-01	0	0	0	0	0	0	0	5.97E-02	4.09E-02	4.77E-02	9.87E-03	-1.07E+01
 Non-renewable primary energy resources used as raw materials (PENRM) [MJ]	5.86E-02	0.00E+00	-8.14E-03	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
 Total use of non-renewable primary energy resources (PENRT) [MJ]	4.12E+01	2.19E-01	8.21E-01	0	0	0	0	0	0	0	5.97E-02	4.09E-02	4.77E-02	9.87E-03	-1.07E+01
 Input of secondary material (SM) [kg]	1.34E-01	0.00E+00	2.69E-03	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
 Use of renewable secondary fuels (RSF) [MJ]	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
 Use of non-renewable secondary fuels (NRSF) [MJ]	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
 Use of net fresh water (FW) [m3]	3.26E-02	2.08E-05	6.55E-04	0	0	0	0	0	0	0	4.48E-07	3.88E-06	1.42E-05	2.62E-06	-9.42E-04

Waste Category & Output flows

		PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				D REUSE, RECOVER RY, RECYCLI NG
Waste Category & Output Flows		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]	9.39E-01	7.09E-12	1.88E-02	0	0	0	0	0	0	0	1.84E-12	1.32E-12	6.90E-12	2.46E-12	1.79E-06
	Non-hazardous waste disposed (NHWD) [kg]	1.99E+00	3.41E-05	6.72E-02	0	0	0	0	0	0	0	1.25E-05	6.36E-06	1.31E-05	5.00E-02	-2.45E-02
	Radioactive waste disposed (RWD) [kg]	6.57E-05	2.83E-07	1.36E-06	0	0	0	0	0	0	0	6.74E-08	5.28E-08	6.00E-07	1.04E-07	1.68E-04
	Components for re-use (CRU) [kg]	0.00E+00	0.00E+00	2.75E-03	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Materials for Recycling (MFR) [kg]	0.00E+00	0.00E+00	1.91E-03	0	0	0	0	0	0	0	0.00E+00	0.00E+00	9.50E-01	0.00E+00	0.00E+00
	Material for Energy Recovery (MER) [kg]	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Exported electrical energy (EEE) [MJ]	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Exported thermal energy (EET) [MJ]	0.00E+00	0.00E+00	0.00E+00	0	0	0	0	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional voluntary indicator (GWP total without biogenic CO₂)

Information on biogenic carbon content

		PRODUCT STAGE	CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				REUSE, RECOVERY RECYCLING
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 CO2 eq.] ²	2.89E+00	1.74E-02	5.84E-02	0	0	0	0	0	0	0	4.61E-03	3.17E-03	2.59E-03	7.55E-04	-1.40E+00

		PRODUCT STAGE
Biogenic Carbon Content		A1 / A2 / A3
	Biogenic carbon content in product [kg]	5.88E-06
	Biogenic carbon content in packaging [kg]	2.21E-03

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂.

The product does not contain any biogenic carbon. Regarding packaging, biogenic carbon is quantified due to wood used on packaging production.

² 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		C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	
	Climate Change [kg CO2 eq.]	4.61E-03	3.17E-03	0	1.51E-02	1.98E-01	4.61E-03	3.17E-03	2.73E-03	0.00E+00	-1.48E+00
	Climate Change (fossil) [kg CO2 eq.]	4.61E-03	3.11E-03	0	1.50E-02	1.98E-01	4.61E-03	3.11E-03	2.68E-03	0.00E+00	-1.48E+00
	Climate Change (biogenic) [kg CO2 eq.]	3.96E-06	8.77E-06	0	4.32E-05	-2.43E-04	3.96E-06	8.77E-06	9.10E-06	0.00E+00	2.26E-03
	Climate Change (land use change) [kg CO2 eq.]	1.68E-07	5.26E-05	0	8.98E-05	9.70E-05	1.68E-07	5.26E-05	3.63E-05	0.00E+00	-7.25E-04
	Ozone depletion [kg CFC-11 eq.]	3.93E-16	3.15E-16	0	4.04E-14	-2.00E-11	3.93E-16	3.15E-16	4.84E-15	0.00E+00	-1.47E-11
	Acidification terrestrial and freshwater [Mole of H+ eq.]	1.06E-05	1.80E-05	0	1.06E-04	4.55E-04	1.06E-05	1.80E-05	1.34E-05	0.00E+00	-3.40E-03
	Eutrophication freshwater [kg P eq.]	8.80E-10	1.34E-08	0	3.40E-08	2.05E-08	8.80E-10	1.34E-08	1.04E-08	0.00E+00	-1.40E-07
	Eutrophication marine [kg N eq.]	4.25E-06	8.78E-06	0	2.74E-05	1.11E-04	4.25E-06	8.78E-06	6.18E-06	0.00E+00	-8.26E-04
	Eutrophication terrestrial [Mole of N eq.]	4.66E-05	9.74E-05	0	3.01E-04	1.20E-03	4.66E-05	9.74E-05	6.83E-05	0.00E+00	-8.94E-03
	Photochemical ozone formation - human health [kg NMVOC eq.]	1.25E-05	1.68E-05	0	8.37E-05	3.65E-04	1.25E-05	1.68E-05	1.71E-05	0.00E+00	-2.74E-03
	Resource use, mineral and metals [kg Sb eq.] ³	1.11E-10	2.67E-10	0	9.70E-10	-8.26E-10	1.11E-10	2.67E-10	2.81E-09	0.00E+00	-1.95E-08
	Resource use, energy carriers [MJ] ¹	5.97E-02	4.09E-02	0	1.97E-01	1.50E+00	5.97E-02	4.09E-02	5.02E-02	0.00E+00	-1.13E+01
	Water deprivation potential [m³ world equiv.] ¹	1.25E-05	4.66E-05	0	1.71E-03	1.59E-03	1.25E-05	4.66E-05	5.13E-04	0.00E+00	-1.24E-02

³ 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		C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	
	Use of renewable primary energy (PERE) [MJ] 4	2.97E-04	3.46E-03	0.00E+00	3.44E-02	-2.64E-01	2.97E-04	3.46E-03	5.35E-03	0.00E+00	1.97E+00
	Primary energy resources used as raw materials (PERM) [MJ] 2	0.00E+00	0.00E+00	0.00E+00	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 resources (PERT) [MJ] 2	2.97E-04	3.46E-03	0.00E+00	3.44E-02	-2.64E-01	2.97E-04	3.46E-03	5.35E-03	0.00E+00	1.97E+00
	Use of non-renewable primary energy (PENRE) [MJ] 2	5.97E-02	4.09E-02	0.00E+00	1.97E-01	1.50E+00	5.97E-02	4.09E-02	5.02E-02	0.00E+00	-1.13E+01
	Non-renewable primary energy resources used as raw materials (PENRM) [MJ] 2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total use of non-renewable primary energy resources (PENRT) [MJ] 2	5.97E-02	4.09E-02	0.00E+00	1.97E-01	1.50E+00	5.97E-02	4.09E-02	5.02E-02	0.00E+00	-1.13E+01
	Use of secondary material (SM) [kg]	0.00E+00	0.00E+00	0.00E+00	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 (RSF) [MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Use of non-renewable secondary fuels (NRSF) [MJ]	0.00E+00	0.00E+00	0.00E+00	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 (FW) [m3]	4.48E-07	3.88E-06	0.00E+00	5.23E-05	1.32E-04	4.48E-07	3.88E-06	1.49E-05	0.00E+00	-9.98E-04

⁴ 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	0.00E+00	4.92E-11	1.78E-06	1.84E-12	1.32E-12	7.26E-12	0.00E+00	1.79E-06
 Non-hazardous waste disposed (NHWD) [kg]	1.25E-05	6.36E-06	0.00E+00	1.00E+00	-4.83E-04	1.25E-05	6.36E-06	1.38E-05	0.00E+00	-2.58E-02
 Radioactive waste disposed (RWD) [kg]	6.74E-08	5.28E-08	0.00E+00	2.07E-06	-2.39E-05	6.74E-08	5.28E-08	6.31E-07	0.00E+00	1.78E-04
 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	0.00E+00	0.00E+00	0.00E+00
 Materials for Recycling (MFR) [kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E+00	0.00E+00	0.00E+00
 Material 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	0.00E+00	0.00E+00	0.00E+00
 Exported electrical energy (EEE) [MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
 Exported thermal energy (EET) [MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Additional information:

Kovostroj a.s. Dobšiná, Cípová, based in Slovakia uses electricity from the GRID Mix. Hence, the electricity mix considered for the manufacturing of the studied product is modelled according to the electricity mix described in the CEA – Central Electricity Authority Dashboard.

Electricity information

Parameter	Information
Location	Representative of residual in country where the plant is located
Geographical & technical representativeness	Share of energy sources Biomass 2.76% Solar 1.86% Wind 0.03% Nuclear 46.70% Hard coal 18.86% Lignite 2.82% Oil 1.94% Natural gas 21.05% RE unspecified 0.05% FO unspecified 3.92% 2% transmission losses
Dataset version	Sphera CUP2024.2 ecoinvent 3.10 (medium voltage)
Source of electricity mix	Sphera/ecoinvent/ AIB report 2023/ IEA
GHG-GWP CO₂ eq.	0.357 kg of CO ₂ eq/kWh

Other additional environmental information

No additional information displayed.

Additional social and economic information

No additional information displayed.

Version history

Original 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)
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
GWP	Global warming potential
GWP-GHG	Global warming potential - Greenhouse gas
GHG	Greenhouse gas
GO	Guaranty of origin
AIB	Association of issuing bodies
IOBC	Instantaneous Oxidation of Biogenic Carbon
EF	Environmental footprint

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