Environmental Product Declaration (EPD)
According to ISO 14025 and EN 15804+A2:2019

PREFA Extruded profile aluminium facade system

Registration number:	EPD-Kiwa-EE-277876-EN
Issue date:	14-08-2026
Valid until:	14-08-2031
Declaration owner:	PREFA Aluminiumprodukte GmbH
Publisher:	Kiwa-Ecobility Experts
Programme operator:	Kiwa-Ecobility Experts
Status:	verified

1 General information

1.1 PRODUCT

PREFA Extruded profile aluminium facade system

1.2 REGISTRATION NUMBER

EPD-Kiwa-EE-277876-EN

1.3 VALIDITY

Issue date: 14-08-2026

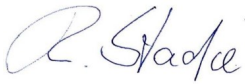
Valid until: 14-08-2031

1.4 PROGRAMME OPERATOR

Kiwa-Ecobility Experts
Wattstraße 11-13
13355 Berlin
DE

Raoul Mancke

(Head of programme operations, Kiwa-Ecobility Experts)



Dr. Ronny Stadie

(Verification body, Kiwa-Ecobility Experts)

1.5 OWNER OF THE DECLARATION

Declaration owner: PREFA Aluminiumprodukte GmbH

Address: Werkstraße 1, 3182 Marktl/Lilienfeld, Österreich

E-mail: office.at@prefa.com

Website: https://www.prefa.com/

Production location: PREFA Aluminiumprodukte GmbH

Address production location: Herzogenburger Str. 75, 3100 St. Pölten, AT

1.6 VERIFICATION OF THE DECLARATION

The independent verification is in accordance with the ISO 14025:2011. The LCA is in compliance with ISO 14040:2006 and ISO 14044:2006. The EN 15804+A2:2019 serves as the core PCR.

☐ Internal ☒ External

Boris Agarski , University of Novi Sad

1.7 STATEMENTS

The owner of this EPD shall be liable for the underlying information and evidence. The programme operator Kiwa-Ecobility Experts shall not be liable with respect to manufacturer data, life cycle assessment data and evidence.

1.8 PRODUCT CATEGORY RULES

General Product Category Rules

Kiwa-EE GPI R.4.0 (2025)

Kiwa-EE GPI R.4.0 Annex B1 (2025)

Specific Product Category Rules

IBU: Part B: Requirements on the EPD for Aluminium roofing and cladding systems v12 (2026)

1 General information

1.9 COMPARABILITY

In principle, a comparison or assessment of the environmental impacts of different products is only possible if they have been prepared in accordance with EN 15804+A2:2019. For the evaluation of the comparability, the following aspects have to be considered in particular: PCR used, functional or declared unit, geographical reference, the definition of the system boundary, declared modules, data selection (primary or secondary data, background database, data quality), scenarios used for use and disposal phases, and the life cycle inventory (data collection, calculation methods, allocations, validity period). PCRs and general program instructions of different EPD program operators may differ. Comparability needs to be evaluated. For further guidance, see EN 15804+A2:2019 and ISO 14025.

1.10 CALCULATION BASIS

LCA method R<THINK: Ecobility Experts | EN15804+A2

LCA software*: Simapro 9.6

Characterization method: RETHINK characterization method (see references for more details)

LCA database profiles: ecoinvent (for version see references)

Version database: v3.20f (20260507)

** Simapro is used for calculating the characterized results of the Environmental profiles within R<THINK.*

1.11 LCA BACKGROUND REPORT

This EPD is generated on the basis of the LCA background report 'PREFA Extruded profile aluminium facade system' with the calculation identifier ReTHiNK-177876.

2 Product

2.1 PRODUCT DESCRIPTION

With the six extruded profiles, PREFA offers a technically advanced product range for modern, modular facade design.

The profiles are available in customised lengths, in ripple and serrated form, and offer maximum design flexibility. It is also possible to combine ripple and serrated profiles.

The product consists of the following components:

Component	Share (wt.%)
Extruded aluminium profile	100

2.2 APPLICATION (INTENDED USE OF THE PRODUCT)

The products are typically used in residential buildings, commercial and industrial buildings, as well as public buildings, and are applied in both new construction and renovation projects. They can be used in particular for facade cladding and balcony cladding.

2.3 REFERENCE SERVICE LIFE

RSL PRODUCT

The service life of many aluminium applications in the construction sector is often linked to the service life of the building. Due to aluminium's self-passivating surface, maintenance requirements are minimal. Based on empirical data, a service life of over 70 years can be expected when used as intended. Description of factors influencing aging when used in accordance with the rules of the art.

A reference service life for aluminium cladding (Metallbekleidungen) of 50 years is provided by "Nutzungsdauer von Bauteilen - Stand: 13.03.2026" (BBSR 2026).

USED RSL (YR) IN THIS LCA CALCULATION:

70

2.4 TECHNICAL DATA

No technical product standard is applicable to this product.

Characteristic	Unit	Wall thickness [mm]		Standard
		≤ 10	10-25	
Yield strength	MPa	200	180	EN 755-2
Tensile strength	MPa	245	225	EN 755-2
Elongation at break	%	6-8	6-8	EN 755-2
Bending property	-	B3	B3	EN 1999-1

The following products are considered in this EPD with different specific weights:

- Ripple 10/50: 6.4 kg/m²
- Ripple 22/100: 6.6 kg/m²
- Ripple 34/100: 7.3 kg/m²
- Ripple 44/200: 6.6 kg/m²
- Serrated 18/40: 7.4 kg/m²
- Serrated 29/33: 10.5 kg/m²

2.5 SUBSTANCES OF VERY HIGH CONCERN

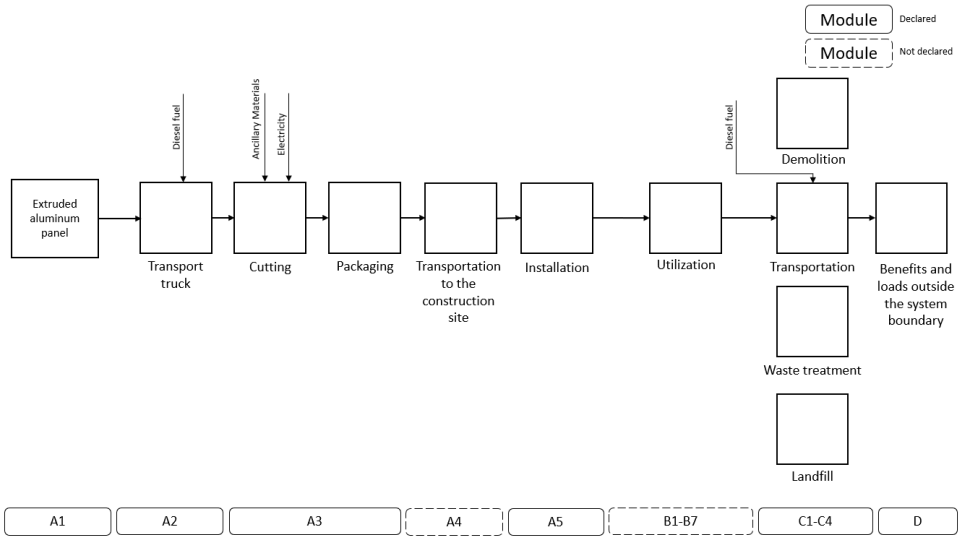
None of the substances contained in the product with a content of more than 0.1% of the total weight is on the "List of Substances of Very High Concern" (SVHC) that are eligible for authorization under the REACH Regulation.

2.6 DESCRIPTION PRODUCTION PROCESS

This Environmental Product Declaration covers manufacturer-specific information on extruded profiles produced by PREFA Aluminiumprodukte GmbH. The production takes place at one production site located in Herzogenburger Str. 75, St. Pölten, Austria.

The production of PREFA extruded profiles includes 90° longitudinal cutting on a profile saw, subsequent deburring, and packaging of the profiles.

2 Product



2.7 CONSTRUCTION DESCRIPTION

Not applicable because the construction process is not considered.

3 Calculation rules

3.1 DECLARED UNIT

1 kg of PREFA Extruded profile aluminium facade system

This is an average EPD for the production of 1 kg of PREFA Extruded profile aluminium facade system by PREFA Aluminiumprodukte GmbH in St. Pölten, Austria.

Reference unit: kilogram (kg)

3.2 CONVERSION FACTORS

Description	Value	Unit
Reference unit	1	kg
Conversion factor to 1 kg	1.000000	kg

3.3 SCOPE OF DECLARATION AND SYSTEM BOUNDARIES

This is a Cradle to gate with options EPD. The life cycle stages included are as shown below:

(X = module included, ND = module not declared)

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	ND	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

The modules of the EN 15804 contain the following:

Module A1 = Raw material supply	Module B5 = Refurbishment
Module A2 = Transport	Module B6 = Operational energy use
Module A3 = Manufacturing	Module B7 = Operational water use
Module A4 = Transport	Module C1 = De-construction / Demolition
Module A5 = Construction - Installation process	Module C2 = Transport
Module B1 = Use	Module C3 = Waste Processing
Module B2 = Maintenance	Module C4 = Disposal
Module B3 = Repair	Module D = Benefits and loads beyond the product system boundaries
Module B4 = Replacement	

3.4 REPRESENTATIVENESS

This EPD is representative of PREFA Extruded profile aluminium facade system, a product of PREFA Aluminiumprodukte GmbH. The results of this EPD are representative of the European Union.

3.5 CUT-OFF CRITERIA

Product stage (A1-A3)

All input flows (e.g. raw materials, transportation, energy use, packaging, etc.) and output flows (e.g. production waste) are considered in this LCA. Therefore, the total neglected

3 Calculation rules

input flows do not exceed the limit of 5% of energy use and mass. All data from the operational data collection was taken into account, i.e. all input and output materials used, the thermal energy employed, and electricity consumption. However, the scope is limited to production-related data. Building and plant components that are not relevant to product manufacturing were excluded. Excluded processes/inputs are:

- Long-term emissions
- The manufacture of equipment used in production, buildings or any other capital goods;
- The transport of personnel to the plant;
- The transport of personnel within the plant;
- Research and development activities

End of life stage (C1-C4)

All input flows (e.g. energy use for demolition or disassembly, transport to waste processing, etc.) and output flows (e.g. end-of-life waste processing of the product, etc.) are considered in this LCA. Therefore, the total neglected input flows do not exceed the limit of 5% of energy use and mass.

Benefits and loads beyond the system boundary (Module D)

All benefits and loads beyond the system boundary resulting from reusable products, recyclable materials and/or useful energy carriers leaving the product system are considered in this LCA.

3.6 ALLOCATION

Allocation was avoided wherever possible. In this LCA study, the allocation is based on physical properties. The raw material, energy and production data were calculated according to the annual production volume using this allocation key and declared unit of 1 kg. The differences in the composition, diameter and shape were neglected by using annual average production data. No by-products or co-products are produced during the manufacture of the analysed product.

3.7 DATA COLLECTION & REFERENCE PERIOD

All process-specific data was collected from 01.01.2025 to 31.12.2025. The quantities of raw materials, auxiliary and process materials used and the energy consumption were collected and averaged over the entire operating year of 2025. The reference area is Austria.

Representative data for Austria was used for most inputs (raw materials and external inputs). For inputs for which there was no corresponding Austrian data set, a data set for a neighbouring country (e.g. Switzerland or the Netherlands) or a regional data set (e.g. for the EU) was used. In a few cases, a global dataset was used. If data was provided by a manufacturer (e.g. an EPD), this was used as the data source.

All specific transport distances of the source materials were recorded and taken into account.

3.8 ESTIMATES AND ASSUMPTIONS

For the packaging materials, no reuse was assumed. This represents a worst-case approach. Module A5 considers only the environmental impact of packaging waste. The impacts of the construction of the product must be assessed separately.

For the dismantling of end-of-life products, a consumption of 0.0437 MJ of diesel per kilogram of product is assumed. The diesel consumption is taken from Allacker et al., 2012.

For the end-of-life treatment of the product, the following assumptions were made: A payload factor of 50 percent was used for all truck transports, which in fact corresponds to a full delivery and empty return trip. A data set for a non-specific truck was used. Regarding the end-of-life treatment of the product, the following assumptions according to NMD waste scenario ID 5 were made: 94% recycling, 3% incineration and 3% landfill.

3.9 DATA QUALITY

The quality level of geographical representativeness can be considered “good”.
The quality level of technical representativeness can be considered “good”.
The time representativeness can also be regarded as “good”.

The overall data quality for this EPD can, therefore, be described as “good”. All relevant process-specific data were collected during data collection.

In all possible cases, primary data from the manufacturer was used, which has very good data quality because it comes directly from the source. In addition, secondary data from the ecoinvent database (2019, version 3.9.1) was used when no primary data could be supplied. The database is checked regularly and, therefore, meets the requirements of DIN EN ISO 14040/44 (background data not older than 10 years). The background data meets the requirements of EN 15804+A2. The quantities of raw materials, consumables and supplies used and the energy consumption were recorded and averaged over the entire operating year.

The general rule that specific data from certain production processes or average data derived from certain processes must take precedence when calculating an EPD or LCA

3 Calculation rules

was adhered to. Data for processes over which the manufacturer has no influence were assigned to generic data/scenarios. When selecting these, care was taken to always choose the data set/scenario that most realistically represents the processes.

3.10 POWER MIX

The electricity mix considered in this EPD follows the market-based approach and therefore corresponds to the electricity mix that PREFA Aluminiumprodukte GmbH purchased from an electricity supplier in 2025. The electricity used for production is sourced from 100 % hydropower. Guarantees of Origin are provided. Based on a conservative calculation approach including direct, upstream and downstream emissions, this electricity mix had a global warming potential (GWP-100) of 0.033 kg CO2eq/kWh.

4 Scenarios and additional technical information

4.1 ASSEMBLY (A5)

The following information describes the scenarios for flows entering the system and flows leaving the system at module A5.

FLOWS ENTERING THE SYSTEM

There are no significant environment impacts as a result of materials or energy used in the construction stage (A5).

FLOWS LEAVING THE SYSTEM

The following output flows leaving the system at module A5 are assumed.

Description	Value	Unit
Output materials as result of loss during construction	0	%
Output materials as result of waste processing of materials used for installation/assembly at the building site	0.000	kg
Output materials as result of waste processing of used packaging	0.000	kg

4.2 DE-CONSTRUCTION, DEMOLITION (C1)

The following information describes the scenario for demolition at end of life.

Description	Amount	Unit
(ei3.9.1) Diesel, burned in machine (incl. emissions)	0.001	l

4.3 TRANSPORT END-OF-LIFE (C2)

The following distances and transport conveyance are assumed for transportation during end of life for the different types of waste processing.

Waste Scenario	Transport conveyance	Not removed (stays in work) [km]	Landfill [km]	Incineration [km]	Recycling [km]	Re-use [km]
(ei3.9.1) aluminium (EU), wrought alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 5)	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	50

The transport conveyance(s) used in the scenario(s) for transport during end of life has the following characteristics.

Value and unit

4 Scenarios and additional technical information

Vehicle type used for transport	(ei3.9.1) Lorry (Truck), unspecified (default) | market group for (GLO)
Fuel type and consumption of vehicle	not available
Capacity utilisation (including empty returns)	50 % (loaded up and return empty)
Bulk density of transported products	inapplicable
Volume capacity utilisation factor	1

4.4 END OF LIFE (C3, C4)

The scenario(s) assumed for end of life of the product are given in the following tables. First the assumed percentages per type of waste processing are displayed, followed by the assumed amounts.

Waste Scenario	Region	Not removed (stays in work) [%]	Landfill [%]	Incineration [%]	Recycling [%]	Re-use [%]
(ei3.9.1) aluminium (EU), wrought alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 5)	NL	0	3	3	94	0

Waste Scenario	Not removed (stays in work) [kg]	Landfill [kg]	Incineration [kg]	Recycling [kg]	Re-use [kg]
(ei3.9.1) aluminium (EU), wrought alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 5)	0.000	0.030	0.030	0.940	0.000
Total	**0.000**	**0.030**	**0.030**	**0.940**	**0.000**

4.5 BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY (D)

The presented Benefits and loads beyond the system boundary in this EPD are based on the following calculated Net output flows in kilograms and Energy recovery displayed in MJ Lower Heating Value.

Waste Scenario	Net output flow [kg]	Energy recovery [MJ]
(ei3.9.1) aluminium (EU), wrought alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 5)	0.640	0.000
Total	**0.640**	**0.000**

5 Results

For the impact assessment long-term emissions (>100 years) are not considered. The results of the impact assessment are only relative statements that do not make any statements about end-points of the impact categories, exceedance of threshold values, safety margins or risks. The following tables show the results of the indicators of the impact assessment, of the use of resources as well as of waste and other output flows.

5.1 ENVIRONMENTAL IMPACT INDICATORS PER KILOGRAM

CORE ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	1.38E+1	2.50E-3	2.20E+0	1.60E+1	1.36E-5	4.33E-3	8.12E-3	2.85E-1	1.18E-3	-6.42E+0
GWP-f	kg CO_2 eq.	1.38E+1	2.50E-3	2.19E+0	1.60E+1	4.87E-7	4.33E-3	8.09E-3	2.83E-1	1.18E-3	-6.27E+0
GWP-b	kg CO_2 eq.	1.80E-2	8.11E-7	4.20E-3	2.22E-2	1.31E-5	6.02E-7	2.64E-6	1.06E-3	3.22E-6	-2.21E-2
GWP-luluc	kg CO_2 eq.	3.97E-2	1.18E-6	6.94E-3	4.67E-2	6.32E-10	4.88E-7	2.88E-5	2.56E-4	1.26E-6	-1.25E-1
ODP	kg CFC 11 eq.	1.41E-7	5.49E-11	2.50E-8	1.66E-7	1.34E-14	6.89E-11	1.44E-10	3.37E-9	1.35E-11	-1.44E-7
AP	mol H+ eq.	9.39E-2	1.04E-5	1.54E-2	1.09E-1	3.03E-9	4.02E-5	3.87E-5	1.15E-3	7.51E-6	-4.10E-2
EP-fw	kg P eq.	4.47E-4	2.03E-8	7.39E-5	5.21E-4	4.41E-12	1.57E-8	8.05E-8	5.74E-6	3.82E-8	-2.45E-4
EP-m	kg N eq.	1.41E-2	3.90E-6	2.22E-3	1.64E-2	1.33E-9	1.86E-5	1.47E-5	2.02E-4	1.88E-6	-5.48E-3
EP-T	mol N eq.	1.57E-1	4.19E-5	2.49E-2	1.82E-1	1.47E-8	2.02E-4	1.57E-4	2.30E-3	2.08E-5	-5.95E-2
POCP	kg NMVOC eq.	4.86E-2	1.57E-5	7.82E-3	5.64E-2	4.26E-9	5.99E-5	5.36E-5	7.59E-4	6.87E-6	-2.30E-2
ADP-mm	kg Sb-eq.	3.95E-5	6.78E-9	2.56E-5	6.51E-5	9.48E-13	1.51E-9	2.53E-8	6.28E-6	2.36E-9	9.95E-5
ADP-f	MJ	1.31E+2	3.67E-2	2.11E+1	1.52E+2	3.69E-6	5.68E-2	1.16E-1	2.08E+0	1.68E-2	-7.99E+1
WDP	m3 world eq.	1.88E+0	1.96E-4	3.79E-1	2.26E+0	5.66E-8	1.52E-4	7.11E-4	2.46E-2	4.50E-4	-1.14E+0

GWP-total=Global Warming Potential total (GWP-total) | **GWP-f**=Global Warming Potential fossil fuels (GWP-fossil) | **GWP-b**=Global Warming Potential biogenic (GWP-biogenic) | **GWP-luluc**=Global Warming Potential land use and land use change (GWP-luluc) | **ODP**=Depletion potential of the stratosperic ozon layer (ODP) | **AP**=Acidification potential, Accumulated Exceedance (AP) | **EP-fw**=Eutrophication potential, fraction of nutrients reaching freshwater end compartment (EP-freshwater) | **EP-m**=Eutrophication potential, fraction of nutrients reaching marine end compartment (EP-marine) | **EP-T**=Eutrophication potential, Accumulated Exceedance (EP-terrestrial) | **POCP**=Formation potential of tropospheric ozone (POCP) | **ADP-mm**=Abiotic depletion potential for non fossil resources (ADP mm) | **ADP-f**=Abiotic depletion for fossil resources potential (ADP fossil) | **WDP**=Water (user) deprication potential, deprivation-weighted water consumption (WDP)

5 Results

ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS EN 15804+A2

Abbr.	Unit	A1	A2	A3	A1-A3	A5	C1	C2	C3	C4	D
PM	disease incidence	1.15E-6	2.57E-10	1.77E-7	1.33E-6	3.73E-14	1.12E-9	7.99E-10	1.86E-8	1.16E-10	-4.90E-7
IR	kBq U235 eq.	9.27E-2	1.77E-5	2.25E-2	1.15E-1	3.47E-9	1.16E-5	4.52E-5	5.60E-3	2.82E-5	-2.77E-1
ETP-fw	CTUe	4.37E+1	1.77E-2	8.91E+0	5.27E+1	5.73E-6	2.71E-2	8.55E-2	1.47E+0	2.48E-1	-1.16E+1
HTP-c	CTUh	1.83E-8	1.09E-12	3.00E-9	2.13E-8	1.99E-15	1.33E-12	4.28E-12	1.76E-10	1.06E-12	-1.61E-8
HTP-nc	CTUh	2.83E-7	2.64E-11	6.14E-8	3.45E-7	6.47E-15	9.23E-12	9.31E-11	7.31E-9	1.35E-11	-7.34E-8
SQP	Pt	2.35E+1	3.73E-2	5.57E+0	2.91E+1	2.54E-6	3.82E-3	9.14E-2	1.88E+0	2.08E-2	9.46E-2

PM=Potential incidence of disease due to PM emissions (PM) | **IR**=Potential Human exposure efficiency relative to U235 (IRP) | **ETP-fw**=Potential Comparative Toxic Unit for ecosystems (ETP-fw) | **HTP-c**=Potential Comparative Toxic Unit for humans (HTP-c) | **HTP-nc**=Potential Comparative Toxic Unit for humans (HTP-nc) | **SQP**=Potential soil quality index (SQP)

CLASSIFICATION OF DISCLAIMERS TO THE DECLARATION OF CORE AND ADDITIONAL ENVIRONMENTAL IMPACT INDICATORS

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

5 Results

ILCD classification	Indicator	Disclaimer
	Potential Soil quality index (SQP)	2

Disclaimer 1 – This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

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

5.2 INDICATORS DESCRIBING RESOURCE USE AND ENVIRONMENTAL INFORMATION BASED ON LIFE CYCLE INVENTORY (LCI)

PARAMETERS DESCRIBING RESOURCE USE

Abbr.	Unit	A1	A2	A3	A1-A3	A5	C1	C2	C3	C4	D
PERE	MJ	1.41E+1	5.38E-4	3.13E+0	1.72E+1	1.14E-7	3.23E-4	1.64E-3	2.36E-1	1.13E-3	-3.01E+1
PERM	MJ	0.00E+0	0.00E+0	1.09E-4	1.09E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
PERT	MJ	1.41E+1	5.38E-4	3.13E+0	1.72E+1	1.14E-7	3.23E-4	1.64E-3	2.36E-1	1.13E-3	-3.01E+1
PENRE	MJ	1.31E+2	3.67E-2	2.11E+1	1.52E+2	3.70E-6	5.68E-2	1.16E-1	2.08E+0	1.68E-2	-7.99E+1
PENRM	MJ	0.00E+0	0.00E+0	2.62E-3	2.62E-3	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	-1.35E-7
PENRT	MJ	1.31E+2	3.67E-2	2.11E+1	1.52E+2	3.70E-6	5.68E-2	1.16E-1	2.08E+0	1.68E-2	-7.99E+1
SM	Kg	0.00E+0	0.00E+0	4.97E-2	4.97E-2	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	9.12E-2
RSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	MJ	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	m^3	8.04E-2	6.24E-6	1.59E-2	9.63E-2	4.33E-9	5.14E-6	2.98E-5	1.20E-3	1.29E-5	-1.61E-1

PERE=Use of renewable primary energy excluding renewable primary energy resources used as raw materials | **PERM**=Use of renewable primary energy resources used as raw materials | **PERT**=Total use of renewable primary energy resources | **PENRE**=Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials | **PENRM**=Use of non-renewable primary energy resources used as raw materials | **PENRT**=Total use of non-renewable primary energy resources | **SM**=Use of secondary material | **RSF**=Use of renewable secondary fuels | **NRSF**=Use of non-renewable secondary fuels | **FW**=Net use of fresh water

5 Results

OTHER ENVIRONMENTAL INFORMATION DESCRIBING WASTE CATEGORIES

Abbr.	Unit	A1	A2	A3	A1-A3	A5	C1	C2	C3	C4	D
HWD	Kg	1.30E-3	2.28E-7	4.76E-3	6.07E-3	2.17E-11	3.82E-7	7.39E-7	6.21E-3	5.56E-8	8.34E-3
NHWD	Kg	2.54E+0	3.22E-3	4.65E-1	3.01E+0	7.18E-6	8.12E-5	7.66E-3	1.09E-1	3.05E-2	-1.82E+0
RWD	Kg	6.20E-5	1.12E-8	1.57E-5	7.77E-5	2.39E-12	6.22E-9	2.65E-8	4.27E-6	1.79E-8	-2.08E-4

HWD=Hazardous waste disposed | **NHWD**=Non-hazardous waste disposed | **RWD**=Radioactive waste disposed

ENVIRONMENTAL INFORMATION DESCRIBING OUTPUT FLOWS

Abbr.	Unit	A1	A2	A3	A1-A3	A5	C1	C2	C3	C4	D
CRU	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	Kg	0.00E+0	0.00E+0	6.25E-1	6.25E-1	9.94E-7	0.00E+0	0.00E+0	9.40E-1	0.00E+0	9.40E-1
MER	Kg	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	MJ	0.00E+0	0.00E+0	8.12E-4	8.12E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	2.75E-5
EEE	MJ	0.00E+0	0.00E+0	4.71E-4	4.71E-4	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	1.60E-5

CRU=Components for re-use | **MFR**=Materials for recycling | **MER**=Materials for energy recovery | **EET**=Exported Energy, Thermic | **EEE**=Exported Energy, Electric

5 Results

5.3 INFORMATION ON BIOGENIC CARBON CONTENT PER KILOGRAM

BIOGENIC CARBON CONTENT

The following Information describes the biogenic carbon content in (the main parts of) the product at the factory gate per kilogram:

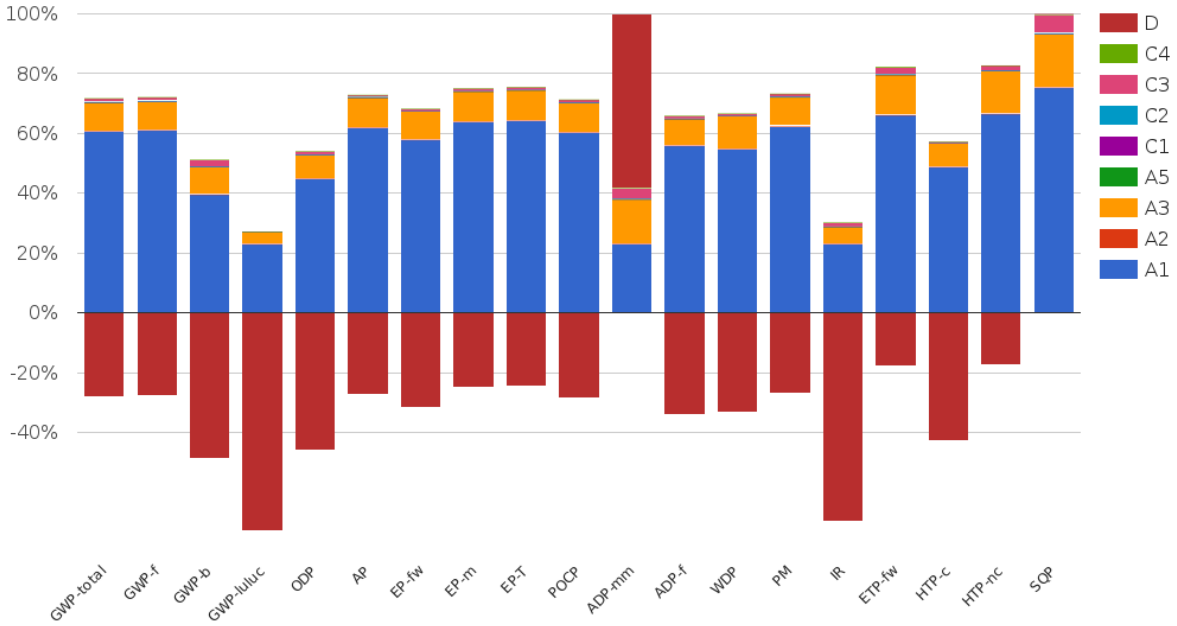
Biogenic carbon content	Amount	Unit
Biogenic carbon content in the product	0	kg C
Biogenic carbon content in accompanying packaging	3.596e-6	kg C

UPTAKE OF BIOGENIC CARBON DIOXIDE

The following amount of carbon dioxide uptake is taken into account. Related uptake and release of carbon dioxide in downstream processes are not taken into account in this number although they do appear in the presented results. One kilogram of biogenic Carbon content is equivalent to 44/12 kg of biogenic carbon dioxide uptake.

Uptake Biogenic Carbon dioxide	Amount	Unit
Packaging	1.319e-5	kg CO2 (biogenic)

6 Interpretation of results



Overall, module A1 (Raw material supply) shows a large contribution across the impact categories. Most impact categories are dominated by A1, except for e.g. Global Warming Potential - biogenic (GWP-b), Global Warming Potential - land use and land use change (GWP-luluc), Abiotic depletion potential for non fossil resources (ADP-mm) and Potential Human exposure efficiency relative to U235 (IR). Module A1 impacts are dominated by the supply of the aluminium panels . Additionally, module A3 (Manufacturing) contributes to almost all impact categories.

The modules A2, A5 and C1-C4 have the least impact on the overall results. The C-modules do not account for more than 10% of the total results in any impact category.

6 Interpretation of results

In total modules A1-A3 contribute with 17.971 kg CO2-eq., module A5 with 0.001 kg CO2-eq. and modules C1-C4 + D with -6.122 kg CO2-eq. to the overall result for the impact category of Global Warming Potential - total.

Benefits are reported in almost all of the impact categories because of module D (indicated by the negative values). The only exceptions are the impact categories Abiotic depletion potential for non fossil resources (ADP-mm) and Potential Soil Quality Index (SQP), which show no benefits. For the impact categories Global Warming Potential - biogenic (GWP-b), Global Warming Potential - land use and land use change (GWP-luluc) and Potential Human exposure efficiency relative to U235 (IR), an additional benefit is generated by module A3 (Manufacturing).

7 References

Allacker et al., 2012
Allacker, K.; Debacker, W.; Delem, L.; De Nocker, L.; De Troyer, F.; Janssen, A.; Peeters, K.; Servaes, R.; Spirinckx, C.; Van Dessel, J. (2012). *Integrated environmental assessment of the use of materials in buildings*. OVAM / VITO / KU Leuven / BBRI

Allgemeine bauaufsichtliche Zulassung/ Allgemeine Bauartgenehmigung
Nr. Z-10.3-865 14.07.2020

ASTM D393
Tentative Specification for Insulated Wire and Cable: Class A 30 Percent Heavy Rubber Compound

ASTM D676
Standard Specification for Interchangeable Taper-Ground Joints

ASTM D696
Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between −30°C and +30°C with a Vitreous Silica Dilatometer

ASTM E8
ASTM E8/E8M-22: Tension Testing of Metallic Materials

BBSR 26.03.13_BBSR_Nutzungdsdauern
Nutzungsdauer von Bauteilen - Stand: 13.03.2026, 26.03.13_BBSR_Nutzungdsdauern (BBSR 2026)

Ecoinvent
ecoinvent Version 3.9.1 cut-off (December 2022)

EN 14782:2006-03
Selbsttragende Dachdeckungs- und Wandbekleidungselemente für die Innen- und Außenanwendung aus Metallblech - Produktspezifikation und Anforderungen; Deutsche Fassung EN 14782:2006

EN 15804+A2
EN 15804:2012+A2:2019/AC:2021, Sustainability of Buildings - Environmental Product Declarations - Framework Development Rules by Product Category

EN 16449:2014-06
Holz und Holzprodukte - Berechnung des biogenen Kohlenstoffgehalts im Holz und Umrechnung in Kohlenstoffdioxid; Deutsche Fassung EN 16449:2014

EN 755-9:2016-10
Aluminium und Aluminiumlegierungen - Stranggepresste Stangen, Rohre und Profile - Teil 9: Profile, Grenzabmaße und Formtoleranzen; Deutsche Fassung EN 755-9:2016

7 References

Kiwa-EE GPI R.4.0
Kiwa-Ecobility Experts, General Programme Instructions “Product Level”, SOP EE 1201_R.4.0 (18.12.2025)

Kiwa-EE GPI R.4.0 Annex B1
Kiwa-Ecobility Experts, General Programme Instructions “Product Level” – Annex B1 Environmental Information Programme according to EN 15804 / ISO 21930 , SOP EE 1203_R.4.0 (18.12.2025)

Integrated environmental assessment of the use of materials in buildings, 2012
Allacker, K.; Debacker, W.; Delem, L.; De Nocker, L.; De Troyer, F.; Janssen, A.; Peeters, K.; Servaes, R.; Spirinckx, C.; Van Dessel, J. (2012). *Integrated environmental assessment of the use of materials in buildings*. OVAM / VITO / KU Leuven / BBRI

ISO 14025
ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures

ISO 14040
ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework; EN ISO 14040:2006

ISO 14044
ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidelines; EN ISO 14044:2006

JRC Publications Repository End-of-waste Criteria for Aluminium and Aluminium Alloy Scrap
End-of-waste Criteria for Aluminium and Aluminium Alloy Scrap: Technical Proposals, Lenka Muchová and Peter Eder, JRC 58527 (2010)

Nationale milieu database waste scenarios methodology
Forfaitaire waarden voor verwerking-scenario’s einde leven behorende bij: Bepalingsmethode Milieuprestatie Bouwwerken (May 2022)

PEFCR annex C v2.1
ecoinvent PEFCR annex C v2.1 (May 2020)

R<THINK characterization method
ecoinvent 3.9.1: EN 15804+A1 indicators (CML-IA Baseline v3.09), EN 15804+A2 indicators (EF 3.1)

Specific Product Category Rules (PCR Part B)
PCR Guidance-Texts for Building-Related Products and Services, From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU), Part B: Requirements on the EPD for Aluminium roofing and cladding systems v12 (03.05.2026)

8 Contact information

Publisher	Operator	Owner of declaration

Kiwa-Ecobility Experts
Wattstraße 11-13
13355 Berlin, DE

E-mail:
DE.Ecobility.Experts@kiwa.com
Website:
https://www.kiwa.com/de/en-de/areas-of-expertise/sustainable-solutions/ecobility-experts-epd-program/

Kiwa-Ecobility Experts
Wattstraße 11-13
13355 Berlin, DE

E-mail:
DE.Ecobility.Experts@kiwa.com
Website:
https://www.kiwa.com/de/en-de/areas-of-expertise/sustainable-solutions/ecobility-experts-epd-program/

PREFA Aluminiumprodukte GmbH
Werkstraße 1
3182 Marktl/Lilienfeld, Österreich, AT

E-mail:
office.at@prefa.com
Website:
https://www.prefa.com/

Kiwa-Ecobility Experts is established member of the ECO PLATFORM