



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

### FR, A2 and PE Aluminium Composite Panels from Albond Alüminyum Sanayi ve Tic. A.Ş

This EPD covers multiple products, based on worst-case results.

Programme: The International EPD® System Programme Operator: EPD International AB Local Operator: EPD Türkiye EPD Registration Number: EPD-IES-0016137 Publication Date: 2024-08-19 Validity Date: 2029-08-18 Geographical Scope: Global

# Environmental Product Declaration









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# How to Read This EPD?



An Environmental Product Declaration (EPD) is an ISO Type III Environmental Declaration based on ISO 14025 standard. An EPD transparently reports the environmental performance of products or services from a lifecycle perspective. The preparation of an EPD includes different stages, from acquiring raw materials to the end of life of the final product/service. EPDs are based on international standards and consider the entire value chain. Additionally, EPD is a third-party verified document. This EPD includes several sections described below.

#### 1. General and Program Information

The first part of an EPD has information about the name of the manufacturer and product/service and other general information such as the validity and expiration dates of the document, the name of the program operator, geographical scope, etc. The second page states the standards followed and gives information about the program operator, third-party verifier, etc. The followed Product Category Rule (PCR) is indicated on the second page.

#### 2. Company and Product/Service Information

Information about the company and the investigated product is given in this section. It summarizes the characteristics of the product provided by the manufacturer. It also includes information about the product such as product composition and packaging.

#### 3. LCA Information

LCA information is one of the most important parts of the EPD as it describes the functional/ declared unit, time representativeness of the study, database(s) and LCA software, along with system boundaries.

The table presented in this part has columns for each stage in the life cycle. The considered stages are marked 'X' whereas the ones that are not declared are labeled as 'ND'. Not all EPDs consider the full life cycle assessment for a product's entire life stages. The 'System Boundary' page is also the place where one can find detailed information about the stages and the assumptions made.

#### 4. LCA Results

The results of the Life Cycle Assessment analysis are presented in table format. The first column in each table indicates the name of the impact category and their measurement units are presented in the second column. These tables show an amount at each life cycle stage to see the impact of different indicators on different stages. Each impact can be understood as what is released through the production of the declared unit of the material—in this case, 1 kg painted aluminium sheet production. The benefits of reuse/recycling of the declared product is reflected in this section.

The first impact in the table is global warming potential (GWP), which shows how much CO<sub>2</sub> is released at each stage. Other impacts include eutrophication potential, acidification potential, ozone layer depletion, land use related impacts, etc. The second table provides results for resource use and the third table is about the waste produced during the production. The fourth and final table shows the results for the GWP-GHG indicator, which is almost equivalent to the GWP-Total indicator mentioned previously. The only difference is that this indicator excludes the biogenic carbon content by following a certain methodology.

### **Programme Information**



The International EPD® System: EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden, info@environdec.com

PCR 2019:14 Construction products, version 1.3.3., Construction EN 15804:2012+A2:2019/AC:2021 Sustainability of Construction Works

Technical Committee of the International EPD® System. Review chair: Claudia A. Peña, University of Concepción, Chile.

The review panel may be contacted via the Secretariat www.environdec.com/contact.

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

EPD process certification

EPD verification X

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via EPD verification by third-party individual verifier

Kripanshi Gupta, Intertek Assuris **Approved by:** The International EPD® System Technical Committee supported by the Secretariat

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes

No X

#### Life Cycle Assessment (LCA) LCA accountability: Can Sönmez, MSc. & Hüdai Kara, PhD – Metsims Sustainability Consulting

EPDs within the same product category but registered in different EPD programmes may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same 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 equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cutoff rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison.

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

# About the Company



**Owner of the EPD:** Albond Alüminyum Sanayi ve Ticaret A.Ş Hatip Mahallesi, Ali Osman Çelebi Bulvarı, NO:140 59860 Çorlu - Tekirdağ

Production Plant: Çorlu Plant (Tekirdağ, Türkiye)

Albond Aluminum Industry and Trade Inc. was founded in 2002 by Peker Family, who has more than 60 years' experience of corporate identity (CID) projects and using composite panel and its main area of activity is to produce aluminium composite panel and make its marketing.

Albond Aluminum Industry and Trade Inc. operated as Aluminium Composite Panel Distributor from its establishment years till 2004. In May 2005, beginning production on a B2 class composite panel line with ALBOND brand in its own premises with the annual capacity of 1.750.000 m2, Albond Aluminum Industry and Trade Inc. ranked especially among the leading export companies thanks to its quality based approach and grew rapidly.

ALBOND, which continues to make production successfully in its new factory built in 2010 with 30.000 m2 closed area in Corlu – Tekirdag (120 Km from Istanbul Ataturk Airport), has increased its production capacity to 7.500.000 m2 with 4 composite panel production lines and fortified its position of sector leader producing A2, B1 and B2 fire classes.

ALBOND, which focuses exclusively to produce composite panels and has the opportunity of manufacturing two meters wide for the first time in Turkey with its fourth line enterprise, finalized its integrated production plant by investing in the aluminium coating line of advanced technology product with the annual capacity of 20.000 MT, The Paint Mixing Unit established with the cooperation of world's giant paint producers in its own premises and the Slitting and Cut-to-Length lines as a complementary to pre-painted aluminium products.

ALBOND rewarded by exporters union with 5 awards exports its products to many countries, notably European countries (70 percent of the export to Spain, England, Italy, France, Germany, Poland, Benelux etc.) with the percentage of %45. ALBOND ranking as the leader of composite panel exporters in Turkey has been deemed worthy of the grand prize among the aluminium building materials manufacturers who have increased their export rate by IMMIB. ALBOND has been proceeding fast as the Pioneer and leader in its sector in Turkey from the very beginning of its establishment and progressing to the top consistently by achieving better ranks every year among the biggest industrial enterprises of Turkey (ISO 500). It works with its whole power to add value to Turkey and reaches its objectives day by day. ALBOND continues to improve and grow in order to put its signature under the successes which will create an enormous impact not only in Turkey but also in the world.



# **About the Products**



#### Products:

This EPD covers multiple aluminium composite panel products as described below. This EPD is based on the worstcase approach.

#### Product group description:

The products referred are aluminium composite panels composed with the integration of two aluminium sheets with a mineral or polyethylene filler amongst them. Aluminium composite panels are mostly used as cladding material for building interior or exteriors. They can also be used within the advertising sector and for decoration. Aluminium composite panels can have different fire classes according to their filler material properties.

The products UN CPC code is 41534 - Plates, sheets and strip, of aluminium, of a thickness exceeding 0.2 mm

#### Included products: (Produced in Çorlu Plant, Türkiye)

- A2 Aluminium Composite Panel
- FR Aluminium Composite Panel
- PE Aluminium Composite Panel



For more information about the products, please visit here.

# **Technical Specifications**



Specification	Unit	Measure
Yield Strength	kg/mm²	4.1
Tensile Strength	kg/mm²	4.8
Elongation	10=5,65 A012_ %	15
Bending Strength	MPa	122
Bending Elasticity Modulus	MPa	10834
Thermal Resistance	m²K/W	0.010
Deviation Temperature	°C	115
Heat Transition Coefficient	Wm²/K	5.54
Linear Thermal Expansion	mm/m/°C	0.024
Temperature Resistance	°C	-50/80
Sound Transmission Loss	dB	25
Rigidity (4 mm)	kN m²/m	0.240
Section Modulus (4 mm)	cm <sup>3</sup> /m	1.75
Rigidity (3 mm)	kN m²/m	0.125
Section Modulus (4 mm)	cm <sup>3</sup> /m	1.25



# **System Boundaries & Description**



System Boundary of this EPD is cradle to gate with options, modules C1-C4, module D and with optional modules (A1-A3 + C + D and A4 & A5). The use phases are omitted since it is not revelant for the investigated products.

#### A1 - Raw Material Supply

At this stage, the effects related to the production of raw materials used in the production of aluminium composite panels are taken into account. This module includes raw material extraction, processing and energy used in the production process.

#### A2 - Raw Material Transport

Transport is relevant for delivery of raw materials and packaging materials to the plant and transport of materials within the plant. The transport distances and routes are calculated based on the given information from the manufacturer for 2023.

Transport Mode	Туре
Road	Vehicle: Lorry Size Class: >32 metric ton Emission Standard: EURO5 Fuel Type: Diesel
Sea	Vehicle: Container Ship DWT (Load Capacity): 43000 tonnes Fuel Type: Heavy Fuel Oil

#### A3 - Manufacturing

The production process of aluminum composite panels goes through a series of precise stages. First, aluminum sheets are selected and subjected to cleaning and surface preparation processes. During this stage, the sheets are cleaned of dirt and oils and made smooth through chemical treatments. The aluminum sheets, which are now ready for painting, are sent to the painting unit. After the painting process is completed, the sheets are made ready for the lamination stage. In the lamination stage, the painted aluminum sheets are combined with a adhesive material. In the lamination line, the adhesive material is placed between two aluminum sheets, and these layers are bonded under high pressure and heat. After the lamination process is completed, the panels are transferred to the cooling section, where they are cooled for a certain period. Once the cooling process is finished, the panels are cut to the desired sizes and packed using appropriate packaging, making them ready for shipment. This detailed and meticulous production process ensures that aluminum composite panels are delivered with high quality and durability for use.



Electricity and natural gas are consumed during the manufacturing.

Information	Description
Electricity Data	Türkiye electricity grid mix from Ecoinvent, Medium Voltage (2017)
Type of dataset	Cradle to gate
GWP of Electricity Data	0,578 kg CO <sub>2</sub> eq./kWh



#### A4 - Product Transport

Product transport from manufacturer to customer is considered in product material supply stage. The distances and routes are calculated accordingly. Depending the customer location, product is transported via trucks and other supplies come through seaway.

Transport Mode	Туре
Road	Vehicle: Lorry Size Class: >32 metric ton Emission Standard: EURO5 Fuel Type: Diesel
Sea	Vehicle: Container Ship DWT (Load Capacity): 43000 tonnes Fuel Type: Heavy Fuel Oil

#### A5 - Installation

The treatment of the packaging waste after the installation of the product has been considered in installation stage. End-of-life scenarios of packaging materials are modelled by assuming EU statistics.

#### C1 - Deconstruction / Demolition

It is assumed that manual removal of the product is sufficient. Thus, the effect of C1 stage is assumed to be zero.

#### C2 - Waste Transport

This stage includes the transport of the discarded product after it reaches end-of-life. A distance of 100 km by lorry 16-32 tonnes from construction/demolition sites to disposal sites has been chosen as a conservative assumption.

Parameter	Value
Vehicle Type	Vehicle: Lorry Size Class: 16-32 metric ton Emission Standard: EURO4 Fuel Type: Diesel
Distance	100 km

#### C3 - Waste Processing

It is assumed that no waste processing is needed after the product reaches its end-of-life. Recycling impact of the product has already been calculated in benfits & loads stage.

#### C4 - Final Disposal

At the end of its life, 95% of aluminum products will be collected and recycled into the production system. It is assumed that 5% of the aluminum portion of the product is lost during demolition and 95% reaches the separation/recycling facility. The recycling rate of flat rolled and painted aluminum sheet products is assumed to be 95%; A total of 95% of end-of-life products are recycled for reuse in construction projects or the construction material production process, and the remaining 5% of end-of-life products are sent to landfill.

#### D - Benefits

The painted aluminum sheets examined in this study contain primary aluminum. These materials carry end-of-life benefits when they are recycled and used in further processing. These materials can replace the primary use of aluminum products. The benefit of this substitution is incorporated at this stage. Additionally, discarded primary aluminum residues must be remelted. Thus, the impact of the remelting process is subtracted from the benefit of avoiding the use of primary aluminum billets by following net input-output flows.

# Lca Information



Functional Unit: 1 m<sup>2</sup> of aluminium composite panel manufactured in Çorlu facility (TR).

Conversion Factor: 7.328 kg / m<sup>2</sup>

Time Representativeness: 2023 (12 months)

Database(s) and LCA Software: Ecoinvent 3.9.1 and SimaPro 9.5

**System Boundaries:** Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and A4 & A5).

	Pro	duct Ste	age	Const Proces	ruction s Stage	Use Stage					End of Life Stage			ge	Benefits and Loads		
	Raw Material Supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-construction	Transport	Waste Processing	Disposal	Reuse-Recycling-Recovery Potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules Declared	Х	Х	Х	Х	Х	ND	ND	ND	ND	ND	ND	ND	Х	Х	Х	Х	Х
Geography	Euro	ope	TR	Europe	GLO				-				GLO	GLO	GLO	GLO	GLO
Specific Data Used		8.	1%	,							-						
Variation - Products		4.	9%														
Variation - Sites			-								-						

X:Declared ND: Not Declared

#### **Geographical Scope**

The geographical scope of this EPD is global.

#### Allocation

According to 2023 production figures, total water consumption, energy consumption and raw material transportation are allocated by weighted average. In addition, total hazardous and nonhazardous waste amounts were allocated according to production tonnage. There is no co-product.

#### Background Data

For all LCA modelling and calculation, Ecoinvent database (v3.9.1) and SimaPro (v9.5) LCA software were used. Characterization factors of EN 15804 reference package based on EF 3.1 are utilized. Impact of infrastructure and capital goods are excluded from the analysis.

#### Assumptions

Upstream and downstream road transportation are assumed to be carried out with EURO5 motor vehicles with a size class of 16-32 metric tonnes where distances acquired through Google Maps. In addition, 100 km distance for the waste transport at C2 stage is assumed.



#### **Cut-Off Criteria**

1% cut-off is applied in LCA. Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts have been included.

#### **Reach Regulation**

No substances included in the Candidate List of Substances of Very High Concern for authorization under the REACH regulations are present in Albond's painted aluminium sheets, either above the threshold for registration with the European Chemicals Agency or above 0.1 % (wt/wt).

#### **Product Composition**

Product Component	Weight, %	Post-consumer material, weight-%	Biogenic material, kg C / declared unit
Painted Aluminium Sheets	35-40	0	0
Mineral Filler	40-45	0	0
HDPe	15-20	0	0

#### Packaging Composition

Pallet, cardboard bracing, corrugated board, cardboard bobbin, cardboard cover for bobbins, polyester packaging strap, packaging film The material is supplied as rolled strips or stacked sheets in the dimensions specified by the customer. Wooden pallets and recycled plastic or recycled paper are used as packaging materials. After use, packaging materials can be re-used or recycled. Wooden pallets, plastic and paper can be collected separately and directed to the recycling circuit.

Product Component	Weight, kg	Weight-% (versus the product)	Biogenic material, kg C / declared unit
Cardboard Packaging	0.022	<1%	0.00184
Polyester Strap	0.289	3.9%	0
Packaging Film	0.083	1.1%	0

#### LCA Modelling, Calculation And Data Quality

The results of the LCA with the indicators as per EPD requirement are given in the LCA result tables. All energy calculations were obtained using Cumulative Energy Demand (LHV) methodology, while fresh water use is calculated with selected inventory flows in SimaPro according to the PCR. There are no co-product allocations within the LCA study underlying this EPD. The regional energy datasets were used for all energy calculations. Data quality assessment is given below table.

Stage	Data Type
Raw Material Supply	Generic database, plant spesific data
Raw Material Transport	Generic database, plant spesific data
Manufacturing	Generic database, plant spesific data
Product Transport	Generic database, generic data
Installation	Generic database, generic data
End of Life	Generic database, generic data
Benefits and Loads	Generic database, generic data

### LCA Results



It is discouraging the use of the results of modules A1-A3 (A1-A5 for services) without considering the results of module C. The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. This EPD covers multiple products, based on worst-case results. (Included products : FR, A2 and PE aluminium composite panels)

			CORE ENV	IRONMENT	AL IMPACTS	PER DECLA				
Mandatory	, indicators	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
	Fossil	kg CO <sub>2</sub> eq.	4.58E+01	9.40E-01	2.68E-02	0.00E+00	7.61E-02	0.00E+00	3.53E-01	-8.56E+00
Global Warming	Biogenic	kg $\rm{CO}_2$ eq.	1.28E-01	2.99E-04	6.00E-03	0.00E+00	2.46E-05	0.00E+00	2.17E+00	-4.35E-02
Potential	Luluc	kg CO <sub>2</sub> eq.	3.19E-01	4.68E-04	7.67E-06	0.00E+00	3.58E-05	0.00E+00	9.36E-05	-1.90E-02
	Total	kg CO <sub>2</sub> eq.	4.62E+01	9.41E-01	3.28E-02	0.00E+00	7.62E-02	0.00E+00	2.52E+00	-8.62E+00
ODP		kg CFC-11 eq.	1.26E-06	2.02E-08	1.33E-10	0.00E+00	1.66E-09	0.00E+00	1.65E-09	-1.41E-07
AP		mol H+ eq.	3.08E-01	4.41E-03	6.23E-05	0.00E+00	2.56E-04	0.00E+00	7.44E-04	-4.56E-02
EP - Freshw	rater	kg P eq.	3.19E-02	6.52E-05	4.87E-06	0.00E+00	5.42E-06	0.00E+00	5.97E-05	-6.86E-03
EP - Marine	9	kg N eq.	4.87E-02	1.36E-03	5.97E-04	0.00E+00	8.87E-05	0.00E+00	6.90E-03	-8.69E-03
EP - Terrestr	ial	mol N eq.	4.64E-01	1.45E-02	1.80E-04	0.00E+00	9.37E-04	0.00E+00	2.22E-03	-8.33E-02
POCP		kg NMVOC	1.66E-01	5.65E-03	1.34E-04	0.00E+00	3.99E-04	0.00E+00	1.51E-03	-2.53E-02
**ADPE		kg Sb eq.	7.76E-05	2.45E-06	2.18E-08	0.00E+00	2.05E-07	0.00E+00	2.62E-07	-1.55E-05
**ADPF		MJ	5.86E+02	1.36E+01	1.29E-01	0.00E+00	1.11E+00	0.00E+00	1.60E+00	-1.78E+02
**WDP		m³ depriv.	1.73E+01	6.36E-02	4.63E-03	0.00E+00	5.32E-03	0.00E+00	5.74E-02	-2.10E+00
		А	dditional envir	onmental impo	act indicators	per declared ı	unit (Optional)			
PM		disease inc.	2.87E-06	9.11E-08	8.52E-10	0.00E+00	7.69E-09	0.00E+00	1.07E-08	-2.13E-07
*IR		kBq U-235 eq.	1.60E+00	1.67E-02	4.32E-04	0.00E+00	1.40E-03	0.00E+00	5.23E-03	-4.91E+00
* * HTP - C		CTUh	8.26E-08	4.10E-10	1.03E-11	0.00E+00	3.29E-11	0.00E+00	1.27E-10	-2.54E-09
* * * HTP - 1	NC	CTUh	9.98E-07	9.51E-09	5.18E-10	0.00E+00	8.00E-10	0.00E+00	5.57E-09	-6.72E-08
* * SQP		Pt	8.28E+01	1.32E+01	2.34E-01	0.00E+00	1.13E+00	0.00E+00	2.91E+00	-2.79E+01
Legend		A1: Raw Material Installation, C1: D System Boundary.	Supply, A2: e-Construction	Transport, A n, C2: Waste	3: Manufactu Transport, C3	uring, A1-A3: 3: Waste Proc	Sum of A1, essing, C4: D	A2, and A3, isposal, D: Be	A4: Transpo nefits and Loc	ort to Site, A5 Ids Beyond the
Acronyms		GWP-total: Climate change – land us: Eutrophication fresh ADPE: Abiotic dep particulate matter. use related impacts	e change. GW e and transfor water. EPmarin Netion - elemer IR: lonising rac soil quality	VP-fossil: Clime mation. ODP: ne: Eutrophico nts. ADPF: Abi liation. HTP-c:	ate change- f Ozone laye ition marine. iotic depletion Cancer humo	fossil. GWP-bi er depletion. A EP-terrestrial: E n - fossil resou an health effec	ogenic: Clima AP: Acidificatio tutrophication rces. WDP: V cts. HTP-nc: No	te change - bi on terrestrial au terrestrial. POC Vater scarcity. on-cancer hum	ogenic. GWP nd freshwater. 2P: Photochem PM: Respirato an health effec	-luluc: Climate EP-freshwater: ical oxidation. ry inorganics - cts. SQP: Land
*Disclaimer 1		This impact categor not consider effects	y deals mainly v due to possible	with the eventue nuclear accide	al impact of lo ents. occupatio	ow dose ionizin nal exposure n	g radiation on or due to radio	human health o active waste dis	of the nuclear fue	el cycle. It does around facilities.

Potential ionizing radiation from the soil. from radon and from some construction materials is also not measured by this indicator.
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.



ADDITIONAL MANDATORY IMPACT CATEGORY INDICATORS PER DECLARED UNIT											
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D		
GWP - GHG	kg CO2 eq.	4.62E+01	9.42E-01	2.25E-01	0.00E+00	7.63E-02	0.00E+00	2.38E+00	-8.63E+00		

GWP-GHG = Global Warming Potential total excl. biogenic carbon following IPCC AR5 methodology. 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. The GWP-GHG indicator is identical to GWP-total except that the characterisation factor (CF) for biogenic CO2 is set to zero.

RESOURCE USE INDICATORS PER DECLARED UNIT												
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D			
PERE	MJ	1.01E+02	1.96E-01	2.88E-01	0.00E+00	1.63E-02	0.00E+00	6.78E-02	-3.32E+01			
PERM	MJ	2.83E-01	0.00E+00	-2.83E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
PERT	MJ	1.01E+02	1.96E-01	5.53E-03	0.00E+00	1.63E-02	0.00E+00	6.78E-02	-3.32E+01			
PENRE	MJ	5.77E+02	1.36E+01	8.78E+00	0.00E+00	1.11E+00	0.00E+00	1.60E+00	-1.78E+02			
PENRM	MJ	8.65E+00	0.00E+00	-8.65E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
PENRT	MJ	5.86E+02	1.36E+01	1.29E-01	0.00E+00	1.11E+00	0.00E+00	1.60E+00	-1.78E+02			
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			
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			
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			
FW	m3	2.24E-01	2.64E-03	1.20E-04	0.00E+00	2.21E-04	0.00E+00	1.50E-03	-5.81E-02			

Legend

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; PENRT: Total use of non-renewable primary energy resources used as raw materials; PENRT: Total use of non-renewable primary energy resources; SM: Use of non-renewable primary energy resources; SM: Use of secondary material; RSF: Use of renewable primary energy renewable primary energy resources; SM: Use of secondary material; RSF: Use of renewable secondary fuels; NRSF: Use of non-renewable secondary fuels; FW: Use of non-renewable sec

WASTE & OUTPUT INDICATORS									
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	1.05E+00	0.00E+00						
NHWD	kg	2.17E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.29E-01	0.00E+00
RWD	kg	0.00E+00							
CRU	kg	0.00E+00							
MFR	kg	6.41E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.44E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00							
EE (Electrical)	MJ	0.00E+00							
EE (Thermal)	MJ	0.00E+00							

Legend

HWD: Hazardous waste disposed, NHWD: Non-hazardous waste disposed, RWD: Radioactive waste disposed, CRU: Components for reuse, MFR: Material for recycling, MER: Materials for energy recovery, EE (Electrical): Exported energy electrical, EE (Thermal): Exported energy, Thermal.

### References



**GPI /** General Programme Instructions of the International EPD® System. Version 4.0. EN ISO 9001/ Quality Management Systems - Requirements EN ISO 14001/ Environmental Management Systems - Requirements

**EN 15804:2012+A2:** 2019 / Sustainability of construction works - Environmental Product Declarations - Core rules for the product category of construction products

**ISO 14025 / DIN EN ISO 14025:** 2009-11: Environmental labels and declarations - Type III environmental declarations - Principles and procedures

**PCR for Construction Products and Construction Services /** Prepared by IVL Swedish Environmental Research Institute, Swedish environmental Protection Agency, SP Trä, Swedish Wood Preservation Institute, Swedisol, SCDA, Svenskt Limträ AB, SSAB, The International EPD System, 2019:14 Version 1.3.3

**ISO 14040/44 / DIN EN ISO 14040:** 2006-10 / Environmental management - Life cycle assessment - Principles and framework (ISO14040:2006) and Requirements and guidelines (ISO 14044:2006)

ISO 9001 / Quality Management System

ISO 45001 / Occupational Health and Management System

ISO 14001 / Environmental Management System

**The International EPD® System /** The International EPD® System is a programme for type III environmental declarations, maintaining a system to verify and register EPD®s as well as keeping a library of EPD®s and PCRs in accordance with ISO 14025. www.environdec.com

Ecoinvent / Ecoinvent Centre, www.ecoinvent.org

SimaPro / SimaPro LCA Software, Pré Consultants, the Netherlands, www.pre-sustainability.com

Metsims / www.metsims.com

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