

Environmental Product Declaration



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

HOT-ROLLED PLATE

from

Laminoirs des Landes SAS



Programme:	The International EPD® System, www.environdec.com
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An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at 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
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Accountabilities for PCR, LCA and independent, third-party verification	
Product Category Rules (PCR)	
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)	
Product Category Rules (PCR): PCR 2019:14 Construction products (15804:2012+A2:2019/AC:2021) Version 1.3.2	
The PCR review was conducted by: The Technical Committee of the International EPD® System. Chair: No chair appointed. Contact via info@environdec.com	
Life Cycle Assessment (LCA)	
LCA accountability: APPLUS – LGAI Technological Center S.A	
Third-party verification	
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:	
<input checked="" type="checkbox"/> EPD verification by individual verifier	
Third-party verifier: Marcel Gómez Ferrer info@marcelgomez.com	
Approved by: The International EPD® System	

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

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, 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 units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Laminoirs des Landes SAS

Contact: Ignazio Fechado, i.fachado@lamdeslandes.com
664 Route de la Barre, 40220 Tarnos. France

Description of the organisation:

Laminoirs des Landes, based in Tarnos, France is a supplier to the steel industry, therefore our target group are companies b2b. We roll thick plates. Our production meets the highest quality requirements of the European market. Thanks to our flexible solutions, we are able to meet the specific needs of our customers in major industrial sectors such as construction, capital goods, power generation, shipbuilding and chemicals.

Thanks to the drive and determination of two families with a long tradition in the world of steel, the Spanish Anon and the Swiss Wuthrich, in March 2018 the dream of implementing a new heavy plate rolling mill on the Atlantic coast between France and Spain became a reality.

The idea was born years earlier from another family with deep roots in the steel sector, Italy's Beltrame, in its desire to diversify its extensive presence in long steel production. At the end of 2016, the Añon family acquired Beltrame's stake from Beltrame, and together with Wuthrich gave the final push for the project to become a reality. Today LDL is a recognized sheet metal rolling mill in the industry, with a production close to 200,000 tons successfully serving the demanding international market.

At Laminoirs des Landes, we have a state-of-the-art rolling line for the production of thick steel plates. At the beginning of the line, there is a slab heating furnace with a capacity of 80 TN/hour. This is followed by a 4,000 ton Quarto-type rolling mill. At the end of the line, we have a roller flattening machine and an automatic shearing machine for cutting the length of the rolled sheets.

Laminoirs des Landes is located in Tarnos, in the Landes Department and in the New Aquitaine region. We have a privileged location, being 50 meters from the port of Bayonne. We have a plot of land of 100.000 m², of which 20.000 m² are covered. Our theoretical manufacturing capacity is estimated at 500.000 TN/year.

Product-related or management system-related certifications:

Laminoirs des Landes SAS is certified by ISO 9001. Certificate n°: 122558-1 certified by Bureau Veritas, CE Marking, according to EN 10025-1:2004 with certificate n°: 0370-CPR-3035 certified by Applus, NF marking, with certificate n°: 105601 certified by NF Acier, AD2000 Merkblatt W0 with certificate n°: DGR-0036-QS-W 49/2022/MAN-01 certified by TUV Sud and LLOYDS MARITIME certificate n°: LR2372382WA certified by LLOYDS Register.

Name and location of production site(s): Laminoirs des Landes SAS
664 Route de la Barre, 40220 Tarnos. France

Product information

Product name: HOT-ROLLED PLATE

Product identification: Steel quarto plates, according to EN 10025-1:2004. "Hot rolled products for structural steels – Part 1: General technical delivery conditions"

Product description:

The product studied in this EPD is a Hot-Rolled Plate. A construction product composed of steel, is a product that can be used for multiple applications, such as in the railway and construction industry, in naval industry, as tempered steel, for boilers construction, and others. The plate is manufactured at Laminoirs des Landes, FR.

The production process starts from the purchase of steel slab, which is then subjected to three main processes, namely 1) oxy-fuel cutting, 2) pre-heating and 3) descaling, hot-rolling until the desired width is reached, surface levelling and edge trimming. The product is then stored unpacked, ready for sale. The steel plates are produced in different surface dimensions and widths.



The **HOT-ROLLED PLATE** can be found different steel grades, that are identified in the following table, as well as their quality standards:

Hot-Rolled Plate		
Steel	Steel grades	Standard
Structural	S235JR, S235JO, S235J2, S275JR, S275JO, S275J2 S355JR, S355JO, S355J2, S355K2 A283 Gr. C; A36; A572 Gr.42; A572 Gr.50 G40.21 Gr.38W, G40.21 Gr.44W, G40.21 Gr.50W, G40.21 Gr.38WT, G40.21 Gr.44WT, G40.21 Gr.50WT	EN 10025-2, ASTM non-low-alloyed CSA non-low-alloyed
Weldable	S275N, S355N	EN 10025-3
Corrosion resistant	S355J0W; S355J2W G40.21 Gr50A/350A, G40.21 Gr50A/350AT	EN 10025-5 CSA non-low-alloyed

For pressure vessels	P235GH; P265GH; P295GH; P355GH P275NH, P355NH, P355N A516 Gr.60; A516 Gr.70 SA516 Gr.60; SA516 Gr.70	EN 10028-2 EN 10028-3 ASTM ASME
Shipbuilding	LR-A; LR-B; LR-D	Normal strength

UN CPC code: **41211** Flat-rolled products of non-alloy steel, not further worked than hot-rolled, of a width of 600 mm or more. According to the Statistical document "Central Product Classification (CPC) Series M No. 77, Ver.2.1.

Geographical scope: Coverage of Global technologies and processes during the Raw Materials Extraction and Transport (A1-A2) and France coverage for manufacturing activities (A3) and European coverage during the Transport, Usage, End of Life Stage and Resource Recovery Stage.

LCA information

Declared unit: In the present study, the declared unit is considered being 1 ton of Hot-Rolled Plate. According to EN 10025-1:2004. The reference unit to express environmental information is 1000 kg of basic construction steel product.

Reference service life:

Not applicable.

Time representativeness:

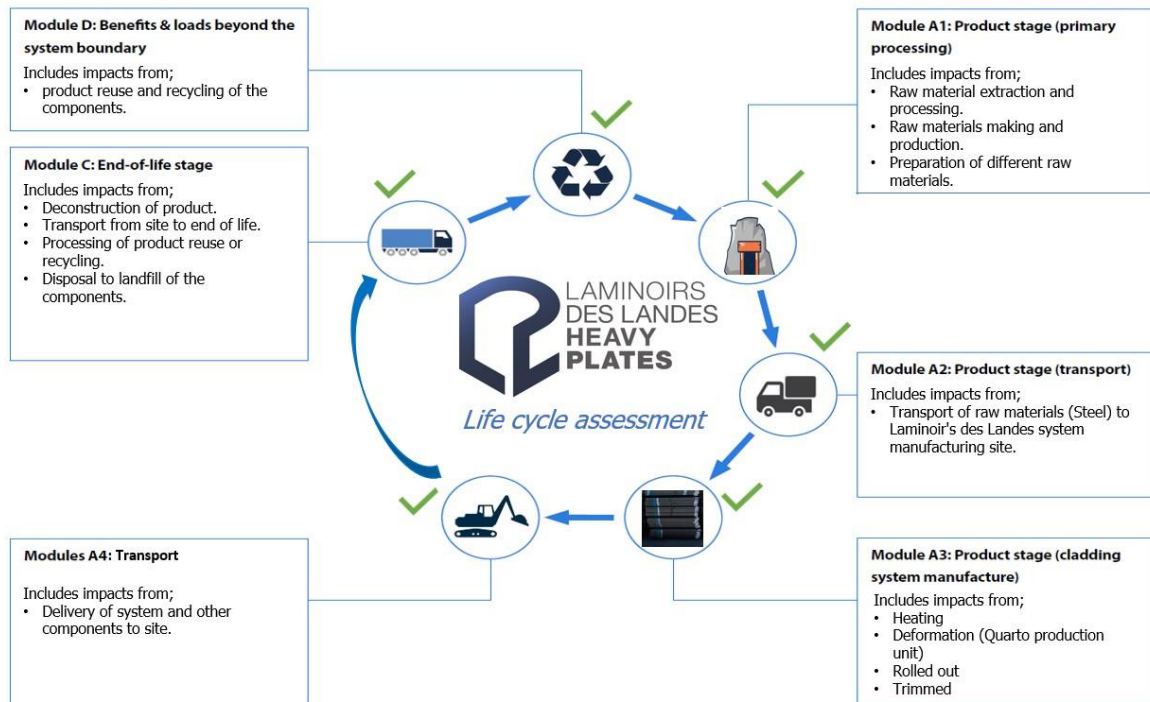
The data collected are for the year 2022, based on the production from the same year.

Database(s) and LCA software used:

The LCA database profile is EcoInvent version 3.6 (September 2019) and the LCA software is SimaPro 9.1.1 with the characterization method based in EN 15804 + A2 Method v1.0.



Description of system boundaries: The scope of the Declaration and the limits of the system apply from "Cradle to gate with options" covering all information modules A1 to A4, C1 to C4 and D.



The life cycle analysis is based on the 15804:2012+A2:2019/AC:2021 standard, where the following cutting criteria are applied:

PRODUCT STAGE (A1 - A3): The production stage consists of the extraction of raw materials, transportation of the raw materials, processing the raw materials into materials and the production of the product. The required energy for production, external treatments, ancillary materials, packing material and production emissions are included, energy consumed comes from French national mix from 2022 with a value of 0,126 kg CO₂ eq/kWh. The limits of the system to nature are related between the resources derived from petroleum and the Technosphere in the production of Hot-Rolled Plate, where most of its content is Steel.

With regards to the production process of the Stages A1-A3, it can be described as the following:

The hot-rolled steel plate is a product that can be used for multiple applications, such as in the railway and construction industry, in naval industry, as tempered steel, for boilers construction, and others. The plate is manufactured at Laminoirs des Landes, France.

The production process of the Hot-rolled steel "quarto plate" is the following:

The term "quarto plate" stands for hot-rolled heavy steel plates with a thickness of at least 3.0 mm, which are produced on so-called quarto mill frames regardless of the steel grade. These frames typically have two working rolls and two support rolls, from which the name "quarto" is derived.

Quarto plates are manufactured and delivered as single plates in different lengths as a finished hot-rolled product.

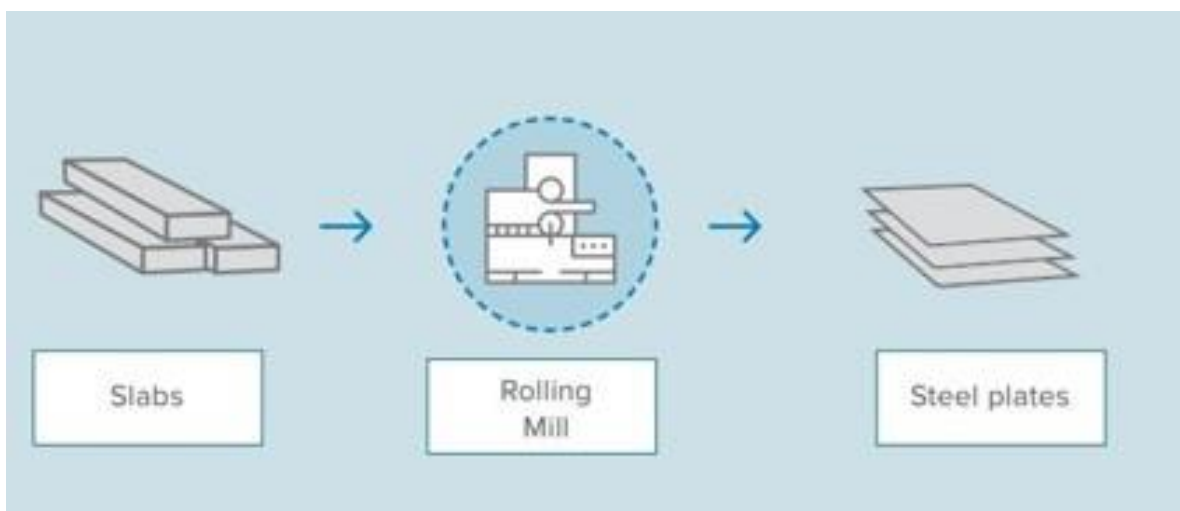
Slabs and ingots of the raw material are heated up to 1,250°C and then undergo their deformation on the quarto production units. Here they are rolled out thinner and thinner under several thousand tonnes of pressure until they reach the desired thickness and width.

Depending on the steel grade used (e.g., AISI 304, 316, 430, etc.), the plates undergo further processing steps to achieve a surface that is as flat as possible and free of "ripples". After that, they are trimmed to length.



The production process is represented in the following diagram:

System diagram:



CONSTRUCTION PROCESS STAGE (A4 - A5): This stage consists of transporting the product from Laminoir’s production plan to an average distance of their buyers during the 2022. It also includes the loss of material during construction. This includes additional production required, transportation, and end-of-life material lost during construction.

It also includes the end of the useful life of the packaging material until the end of the state of disposal or final waste disposal. Installation of the product, including manufacturing, transportation, and end-of-life of auxiliary materials and any use of energy or water necessary for the installation or operation of the product construction works are considered.

Stage A4 - Transport to construction site: It includes transport from the production site to a central warehouse where it will be further distributed. During this stage, no transport losses are assumed.

SCENARIO INFORMATION	VALUE/DESCRIPTION
Type of vehicle used for transport	Lorry (Truck) > 32t, EURO6
Vehicle lead capacity	> 32 Ton
Fuel type and consumption	Default value from Ecoinvent 3.6
Distance to the site	508 km
Capacity of utilization (including empty returns)	Default value from Ecoinvent 3.6
Bulk density of transported products	Kg/m ³
Volume capacity utilization factor	Not Applicable

END OF LIFE STAGE (C1 - C4): When the end of the product life stage is reached, the deconstruction begins. This EPD includes deconstruction (C1), which includes the removal of the building's floor covering, including the initial on-site selection of materials; necessary transportation (C2) from the deconstruction site to the sorting location and the distance to final disposal. The end of life stage includes final landfill disposal (C4), where the waste is disposed of, which includes physical pre-treatment and management at the disposal site, waste processing (C3), being the incineration and necessary recycling processes to the final point of disposal.

SCENARIO INFORMATION	VALUE/DESCRIPTION
Collection process specified by type	Steel, chromium steel (i.a. metals): 1000 kg.
Recovery system specified by type	0 kg for Incineration
	950 kg for Recycling
	0 kg for re-Use
Elimination specified by type	50 kg disposal to landfill
Assumptions for scenario development (e.g. transport)	Lorry (Truck), unspecified (default) market group for (GLO) Distance to landfill 100 km, to incineration 150 km and to recycling 50 km

BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY (D): This stage contains the potential loads and benefits of recycling and re-use of raw materials/products. The loads contain the needed recycling processes from end-of-wastepoint up to the point-of-equivalence of the substituted primary raw material and a load for secondary material that will be lost at the end-of-life stage.

The loads and benefits of recycling and reuse are included in this module. The benefits are calculated based on the primary content and the primary equivalent.

In addition, the benefits of energy recovery are granted at this stage. The amount of avoided energy is based on the Lower Heating Values of the materials and the efficiencies of the incinerators as mentioned in the NMD Determination method v1.0 or EcoInvent 3.6 (2019).

Therefore, it will be considered that in this EPD, of all the previously declared cut criteria, only modules **"A1-A4"; "C1-C4" and "D"** are declared; being the minimum required by the 15804:2012+A2:2019/AC:2021 standard.

Data quality: All process-specific data was collected for the 2022 operating year and is therefore up-to-date.

The data is obtained from the company and verified by **APPLUS - LGAI Technological Center S.A**

The generic data were taken from the database EcoInvent (version 3.6). The data quality assessment covers geography representativeness, technology representativeness and time representativeness, and is based on the data quality criteria from the Annex E, Table E.2 of EN 15804:2012+A2:2019/AC:2021. The data quality overall can be classified as good. Geographically, the data are from A1 and A2 stages is global, from stage A3 is French and the rest stages (A4, C1, C2, C3 and D) is Euro. Temporally, the data are current, from the year 2022, thus qualifying as very good. Technically, the same manufacturing system and machinery (rolling mills) is followed for the development of the products.

With regard to the exclusion criteria for inputs and outputs (cut-off rules), what is indicated in the EN 15804:2012+A2:2019/AC:2021 standard is considered, which indicates that If there is not enough information, the energy of the process and the materials that represent less than 1% of the total energy and mass used can be excluded (if they do not cause significant impacts). Furthermore, The following processes have been excluded:

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

The sum of all excluded inputs and outputs cannot exceed 5% of the total mass and energy used, as well as the environmental emissions produced. With other criteria, the polluter pays principle, the principle of modularity and that it does not consider the emissions generated in the long term have been considered.

The system's LCA calculation did not consider flows related to the construction of production plants, application machines and employee transport and the study cover at least 95% of the materials and energy per module and at least 99% of the total material and energy use of each unit process.

Allocation:

Whenever allocations could be avoided, primary data have been used. Where this has not been possible, mass-based physical allocations have been used.

The allocation for inputs of materials, such as raw materials or packaging materials, are direct.

The allocation for consumptions, such as energy, water and steam, have been allocated from 2022 production.

For production waste, the packaging material of the Hot-Rolled Plate has been taken into account, as well as the waste associated to the production process, knowing the kg that could be produced from it.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	x	x	x	x	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	GLO	GLO	FR	EU													EU
Specific data used	>90% GWP			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0 %			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	0 %			EU average for Laminoirs	-	-	-	-	-	-	-	-	-	-	-	-	-

Content information

This EPD is representative for one ton of steel wire with the trade name HOT-ROLLED PLATE manufactured at the production site Laminoirs des Landes SAS

The data for HOT-ROLLED PLATE has been used for the calculation as it is one of the main products manufactured by Laminoirs des Landes SAS.

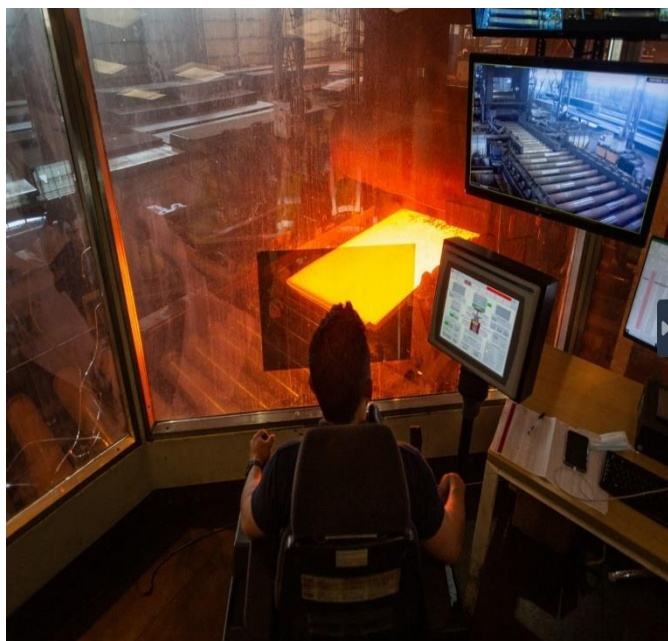
The components for Laminoir´s HOT-ROLLED PLATE product is detailed here and his explanation of each phase:

Products Component: Also known as raw material supply, The % for manufacturing one ton of HOT-ROLLED PLATE.

Packing Material: Includes amount of packaging materials used for one ton of the product.

Ancillary materials: Refers to those materials used during the life cycle of a product, but which are not directly part of the final product.

Energy consumption: Refers to the energy consumed to manufacture one ton of the product, from 2022 FR National energy mix.



Product components	Weight, %	Post-consumer material, weight, %	Biogenic material, weight, % and kg C/kg
Steel	100	17	0
TOTAL	100	17	0
Packaging materials	Mass per declared unit (kg/ton)	Weight, % (versus the product)	Weight biogenic carbon, kg C/ton
Pine wood	2.66E+00	0.266	1.28 kg C
Eucalyptus taco	1.74E+00	0.174	0.841 kg C
TOTAL	1.29E+00	0.44	2.121 kg C

Hazardous Materials Content:

During the life cycle of the product, no dangerous substance included in the "List of substances candidates for authorization (SVHC)" in a percentage greater than 0.1% of the weight of the product.

RESULTS: ENVIRONMENTAL INFORMATION

HOT-ROLLED PLATE



Results of the environmental performance indicators

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
ILCD type / level 3	Potential Human exposure efficiency relative to U235 (IRP)	1
	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
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.

Mandatory impact category indicators according to EN 15804

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Results of 1 ton HOT-ROLLED PLATE.

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-fossil	kg CO ₂ eq.	2,41 E+03	4,44 E+01	ND	ND	ND	ND	ND	ND	ND	ND	6,95 E-01	7,09 E+00	0,00 E+00	2,63 E-01	-1,12 E+03
GWP-biogenic	kg CO ₂ eq.	-5,98 E+00	0,00 +00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	4,18 E+00	1,79 E+00	1,17 E+01
GWP-luluc	kg CO ₂ eq.	1,10 E+00	1,35 E-02	ND	ND	ND	ND	ND	ND	ND	ND	5,48 E-05	2,60 E-03	0,00 E+00	7,35 E-05	8,28 E-01
GWP-total	kg CO ₂ eq.	2,41 E+03	4,45 E+01	ND	ND	ND	ND	ND	ND	ND	ND	6,95 E-01	7,09 E+00	0,00 E+00	2,64 E-01	-1,11 E+03
ODP	kg CFC 11 eq.	1,46 E-04	1,09 E-05	ND	ND	ND	ND	ND	ND	ND	ND	1,50 E-07	1,56 E-06	0,00 E+00	1,09 E-07	-2,74 E-05
AP	mol H ⁺ eq.	1,38 E+01	1,43 E-01	ND	ND	ND	ND	ND	ND	ND	ND	7,27 E-03	4,11 E-02	0,00 E+00	2,50 E-03	-4,33 E+00
EP-freshwater	kg P eq.	1,31 E-01	3,54 E-04	ND	ND	ND	ND	ND	ND	ND	ND	2,53 E-06	7,15 E-05	0,00 E+00	2,95 E-06	-3,97 E-02
EP-marine	kg N eq.	2,91 E+00	3,13 E-02	ND	ND	ND	ND	ND	ND	ND	ND	3,21 E-03	1,45 E-02	0,00 E+00	8,60 E-04	-8,03 E-01
EP-terrestrial	mol N eq.	3,20 E+01	3,49 E-01	ND	ND	ND	ND	ND	ND	ND	ND	3,52 E-02	1,60 E-01	0,00 E+00	9,50 E-03	-9,38 E+00
POCP	kg NMVOC eq.	1,23 E+01	1,37 E-01	ND	ND	ND	ND	ND	ND	ND	ND	9,68 E-03	4,56 E-02	0,00 E+00	2,76 E-03	-6,38 E+00
ADP-minerals&metals*	kg Sb eq.	3,85 E-02	7,91 E-04	ND	ND	ND	ND	ND	ND	ND	ND	1,07 E-06	1,80 E-04	0,00 E+00	2,41 E-06	-7,59 E-04
ADP-fossil*	MJ	2,66 E+04	7,22 E+02	ND	ND	ND	ND	ND	ND	ND	ND	9,57 E+00	1,07 E+02	0,00 E+00	7,36 E+00	-7,84 E+03
WDP*	m ³	3,78 E+02	2,34 E+00	ND	ND	ND	ND	ND	ND	ND	ND	1,28 E-02	3,82 E-01	0,00 E+00	3,30 E-01	-2,14 E+02
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption															

Additional mandatory and voluntary impact category indicators

Results of 1 ton HOT-ROLLED PLATE.

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ¹	kg CO ₂ eq.	2,41 E+03	4,45 E+01	ND	ND	ND	ND	ND	ND	ND	ND	6,95 E-01	7,09 E+00	0,00 E+00	2,64 E-01	-1,11 E+03
ETP - fw	CTUe	1,05 E+05	5,75 E+02	ND	ND	ND	ND	ND	ND	ND	ND	5,77 E+00	5,77 E+00	9,53 E+01	0,00 E+00	4,77 E+00
PM	disease incidence	1,93 E-04	3,90 E-06	ND	ND	ND	ND	ND	ND	ND	ND	1,93 E-07	6,37 E-07	0,00 E+00	4,86 E-08	-6,51 E-05
HTP - c	CTUh	1,84 E-05	1,39 E-08	ND	ND	ND	ND	ND	ND	ND	ND	2,01 E-10	3,09 E-09	0,00 E+00	1,11 E-10	-1,45 E-07
HTP - nc	CTUh	1,35 E-04	6,30 E-07	ND	ND	ND	ND	ND	ND	ND	ND	4,95 E-09	1,04 E-07	0,00 E+00	3,40 E-09	2,21 E-04
IR	kBq U235 eqv.	6,13 E+01	3,15 E+00	ND	ND	ND	ND	ND	ND	ND	ND	4,10 E-02	4,48 E-01	0,00 E+00	3,02 E-02	1,92 E+01
SQP	Pt	8,27 E+03	8,26 E+02	ND	ND	ND	ND	ND	ND	ND	ND	1,22 E+00	9,27 E+01	0,00 E+00	1,54 E+01	-1,73 E+03
Acronyms	ETP-fw = Ecotoxicity, freshwater; PM = Particulate Matter; HTP-c = Human toxicity, cancer; HTP-nc = Human toxicity, non-cancer; IR = Ionising radiation, human health; SQP = Land use.															

Resource use indicators

Results of 1 ton HOT-ROLLED PLATE.

Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	2,39 E+03	9,08 E+00	ND	ND	ND	ND	ND	ND	ND	ND	5,17 E-02	1,34 E+00	0,00 E+00	5,95 E-02	2,28 E+02
PERM	MJ	6,19 E+01	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PERT	MJ	2,46 E+03	9,08 E+00	ND	ND	ND	ND	ND	ND	ND	ND	5,17 E-02	1,34 E+00	0,00 E+00	5,95 E-02	2,28 E+02
PENRE	MJ	2,77 E+04	7,66 E+02	ND	ND	ND	ND	ND	ND	ND	ND	1,02 E+01	1,13 E+02	0,00 E+00	7,82 E+00	-8,14 E+03
PENRM	MJ	1,70 E-02	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
PENRT	MJ	2,77 E+04	7,66 E+02	ND	ND	ND	ND	ND	ND	ND	ND	1,02 E+01	1,13 E+02	0,00 E+00	7,82 E+00	-8,14 E+03
SM	kg	1,80 E+02	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
RSF	MJ	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
NRSF	MJ	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
FW	m ³	1,27 E+01	8,22 E-02	ND	ND	ND	ND	ND	ND	ND	ND	4,92 E-04	1,30 E-02	0,00 E+00	7,85 E-03	-4,06 E+00
Acronyms	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 re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

¹ This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO₂ is set to zero.

Waste indicators

Results of 1 ton HOT-ROLLED PLATE.																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,34 E-01	1,75 E-03	ND	ND	ND	ND	ND	ND	ND	ND	2,61 E-05	2,71 E-04	0,00 E+00	1,10 E-05	-1,35 E-01
Non-hazardous waste disposed	kg	9,12 E+02	6,27 E+01	ND	ND	ND	ND	ND	ND	ND	ND	1,13 E-02	6,78 E+00	0,00 E+00	5,00 E+01	-1,10 E+02
Radioactive waste disposed	kg	6,84 E-02	4,93 E-03	ND	ND	ND	ND	ND	ND	ND	ND	6,64 E-05	7,02 E-04	0,00 E+00	4,84 E-05	6,62 E-03

Output flow indicators

Results of 1 ton HOT-ROLLED PLATE.																
Indicator	Unit	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Material for recycling	kg	7,98 E+01	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	9,50 E+02	0,00 E+00	0,00 E+00
Materials for energy recovery	kg	0,00 E+00	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Exported energy, electricity	MJ	5,26 E-03	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00
Exported energy, thermal	MJ	3,05 E-03	0,00 E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00	0,00 E+00

Other environmental performance indicators

Results per declared unit		
BIOGENIC CARBON CONTENT	Unit	QUANTITY
Biogenic carbon content in product	kg C	0,00E+00
Biogenic carbon content in packaging	kg C	2,12E+00

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.

Information related to Sector EPD

- This is an individual EPD

Differences versus previous versions

- This is the first version of the EPD.

References

General Programme Instructions of the International EPD® System. Version 4.0

PCR 2019:14 Construction products (EN 15804:2012+A2:2019/AC:2021) Version 1.3.2.

ISO 14040:2006, Environmental management – Life cycle assessment – Principles and Framework.

ISO 14044:2006, Environmental management – Life cycle assessment – Requirements and guidelines.

ISO 14025:2011, Environmental labels and declarations – Type III environmental declarations – Principles and procedures.

EN 15804+A2:2019/AC:2021, Sustainability of construction works – Environmental Product Declarations – Core rules for the product category of construction products.

EN 10025-1: Hot rolled products for structural steels – Part 1: General technical delivery condition

EN 10025-2: Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels

EN 10025-3: Hot rolled products of structural steels - Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels

EN 10025-5: Hot rolled products of structural steels - Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance

LCA report information for the environmental product declaration of Hot-Rolled Plate, APPLUS – LGAI Technological Center, 68046 version 3, March 2024

