



PROSPECTIVE - Environmental Product Declaration

IN ACCORDANCE WITH ISO 14025 AND ISO 21930:2017



JSW GreenEdge

Steel for a beautiful planet



JSW USA Hot Rolled Plate

SmartEPD-2025-103-0713-01

Date of Issue

Dec 17, 2025

Expiration Date

Dec 17, 2026

Last Updated

Jan 06, 2026

Refer to the EPD Library at www.smartepd.com for the latest EPD listing information



General Information

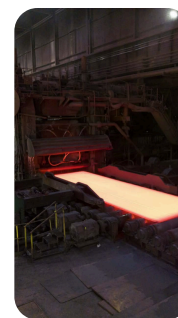
JSW Steel USA

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Product Name:	JSW USA Hot Rolled Plate - Prospective EPD
Declared Unit:	1 metric ton with a typical density of 7700 kilograms per cubic meter
Declaration Number:	SmartEPD-2025-103-0713-01
Date of Issue:	December 17, 2025
Expiration:	December 17, 2026
Last updated:	January 06, 2026
EPD Scope:	Cradle to gate A1 - A3
Market(s) of Applicability:	North America

General Organization Information

JSW USA is part of the diversified US \$22 billion JSW Group. As affiliates of JSW Group, with more than 18 million tons of installed capacity worldwide, JSW Steel USA benefits from having access to team members with world-class expertise and product knowledge.

JSW Steel USA has two strategic locations in the United States; Mingo Junction, Ohio and Baytown, Texas. JSW Steel USA is committed to creating a better today, stronger tomorrow.

JSW Steel USE is home to both the largest and most modern Consteel EAF Technology in north America as well as one of the widest plate mills. By using the Consteel EAF method of melted and manufactured steel, JSW produces some of the cleanest steel products possible in the world. JSW services shipyards, oilfield fabricators, heavy equipment producers, machinery makers, global energy and petrochemicals industry, and many other end users and distributors who need high quality steel.

Further information can be found at: <https://jswsteel.us/about-us/>

Limitations, Liability and Ownership

It is recognized that by following the typical ISO 21930:2017 definitions of module A1, A2 and A3 for a specific production facility, inconsistencies will occur in classifying individual processes as either A1 or A3 based on the scope of the operations that take place at a given facility. Care must be taken not to compare A1, A2 or A3 on an individual basis for a given product from various mill producers, but, instead on the aggregated total of A1, A2 and A3. Separate A1, A2 and A3 values are provided for a better understanding of the processes taking place at a given facility and a greater level of transparency.

Construction product environmental impact results provide a sufficient basis for comparison only when considered in the context of the construction works project. In all cases of comparing construction products, the principle that the basis for comparison of the assessment is the construction works level shall be

maintained by ensuring that the same functional requirements are met and the criteria in ISO 21930:2017 Section 5.5 "Comparability of EPDs for construction products" are satisfied.

This is a prospective EPD as the review of JSW's internal process for tracking and documenting GreenEdge products is being verified. Prospective EPDs are in accordance with ISO 14025 [and ISO 21930:2017 or European Standard (EN) 15804+A2]. Once verified, a standard EPD will be created and published.

Reference Standards

Standard(s):	ISO 14025 and ISO 21930:2017
Core PCR:	Smart EPD® Part A Product Category Rules for Building and Construction Products and Services, 1000, v1.2 Date of issue: March 14, 2025
Sub-category PCR:	Smart EPD® Part B PCR for Designated Steel Construction Products, 1000-008, v3.0 Date of issue: April 03, 2025 Valid until: April 03, 2030
Sub-category PCR review panel:	 Contact Smart EPD for more information.
General Program Instructions:	 Smart EPD General Program Instructions v.2.0, March 2025

Verification Information

ACLCA PCR Guidance Version:	1.0
ACLCA PCR Conformance Level:	Transparency
LCA Author/Creator:	 Brooke Alsterlind  TrueNorth Collective  info@truenorthcollective.net
EPD Program Operator:	 Smart EPD  info@smartepd.com  www.smartepd.com  585 Grove St., Ste. 145, Herndon, VA 20170, USA
Verification:	Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071:  Gaurav Das  gd30gcc@gmail.com Independent external verification of EPD, according to ISO 14025 and reference PCR(s):  Gaurav Das  gd30gcc@gmail.com

External

External

Product Information

Declared Unit:	1 metric ton with a typical density of 7700 kilograms per cubic meter
Mass:	1000 kg
Product Specificity:	 Product Average  Product Specific

Variation in GWP Result (Products): 0% to 0%
Variation in GWP Result (Facilities): 0% to 0%

Product Description

This EPD represents JSW's GreenEdge carbon steel plate produced from steel slab which is manufactured via Electric Arc Furnance (EAF) rout.

JSW Steel USA is committed to creating safe sustainable steel. Plate is rolled to order. Company procedures conform to all PED, ASTM, Eq, ASME, API, DIq, and JIS Standards. The most demanding customer requirements are met with tightly controlled and documented Quality Assurance and Preventative Maintenance programs.

Products are used in a wide range of applications, including oil and gas installations, construction, ship building, other marine vessels, storage tanks, transportation, offshore platforms, machinery and heavy equipment, general fabrication, renewable energy, utility transmission and distribution towers.

Plate products are used in a wide variety of construction, infrastructure, and transportation applications. JSW's GreenEdge Plate product is one offering within the JSW GreedEdge program, their certificate based low-carbon emission steel solution designed to offer flexible reduction in a carbon footprint.

Product Specifications

Product Classification Codes: UNSPSC - 3010330
UNSPSC - 11171500

System boundary option: Mill product (Option 1)

Options: ✓ EAF

BOF Percentage of Representation (optional): 0 %

EAF Percentage of Representation (optional): 100 %

Steel Type: Carbon/Alloy

Options: ✓ Other (Specify)

Other: Hot Rolling (Mill Process)

Options: ✓ Plate

Material Composition

Material/Component Category	Origin	% Mass	Unit	Percent
Steel Slab	US	1	tonne	99.45%
Lubricating Fluid	unknown	5.65E-04	m3	0.05%
Water Treatment Chemical - CHEM,PROC,CHEMTREAT P835E.275	unknown	1.65E-02	kg	0.002%

Material/Component Category	Origin	% Mass	Unit	Percent
Water Treatment Chemical - CHEM,PROC,SODIUM HYPOCLRITE;NAOCL;10%;GAL	unknown	4.67E-04	m3	0.05%
Water Treatment Chemical - CHEM,PROC,FLEXPRO CL5737;CHEMTREAT	unknown	6.47E-03	kg	0.001%
Water Treatment Chemical - CHEM,PROC,WTR TREATMENT CL41;CHEMTREAT	unknown	1.07E-02	kg	0.001%
Oxygen	unknown	3.00E+00	m3	0.43%
Argon	unknown	7.84E-02	m3	0.01%

Packaging Material	Origin	kg Mass
Dunnage	None	3.49E-01

Biogenic Carbon Content	kg C per metric ton
Biogenic carbon content in product	0None
Biogenic carbon content in accompanying packaging	0.64

Hazardous Materials
None

EPD Data Specificity

Primary Data Year: 2023

Manufacturing Specificity:

- ✗ Industry Average
- ✗ Manufacturer Average
- ✓ Facility Specific

Averaging:
Averaging was not conducted for this EPD.

System Boundary

Production	A1	Raw material supply	✓
	A2	Transport	✓
	A3	Manufacturing	✓
Construction	A4	Transport to site	ND
	A5	Assembly / Install	ND
Use	B1	Use	ND
	B2	Maintenance	ND
	B3	Repair	ND
	B4	Replacement	ND
	B5	Refurbishment	ND
	B6	Operational Energy Use	ND
	B7	Operational Water Use	ND
End of Life	C1	Deconstruction	ND
	C2	Transport	ND
	C3	Waste Processing	ND
	C4	Disposal	ND
Benefits & Loads Beyond System Boundary	D	Recycling, Reuse Recovery Potential	ND

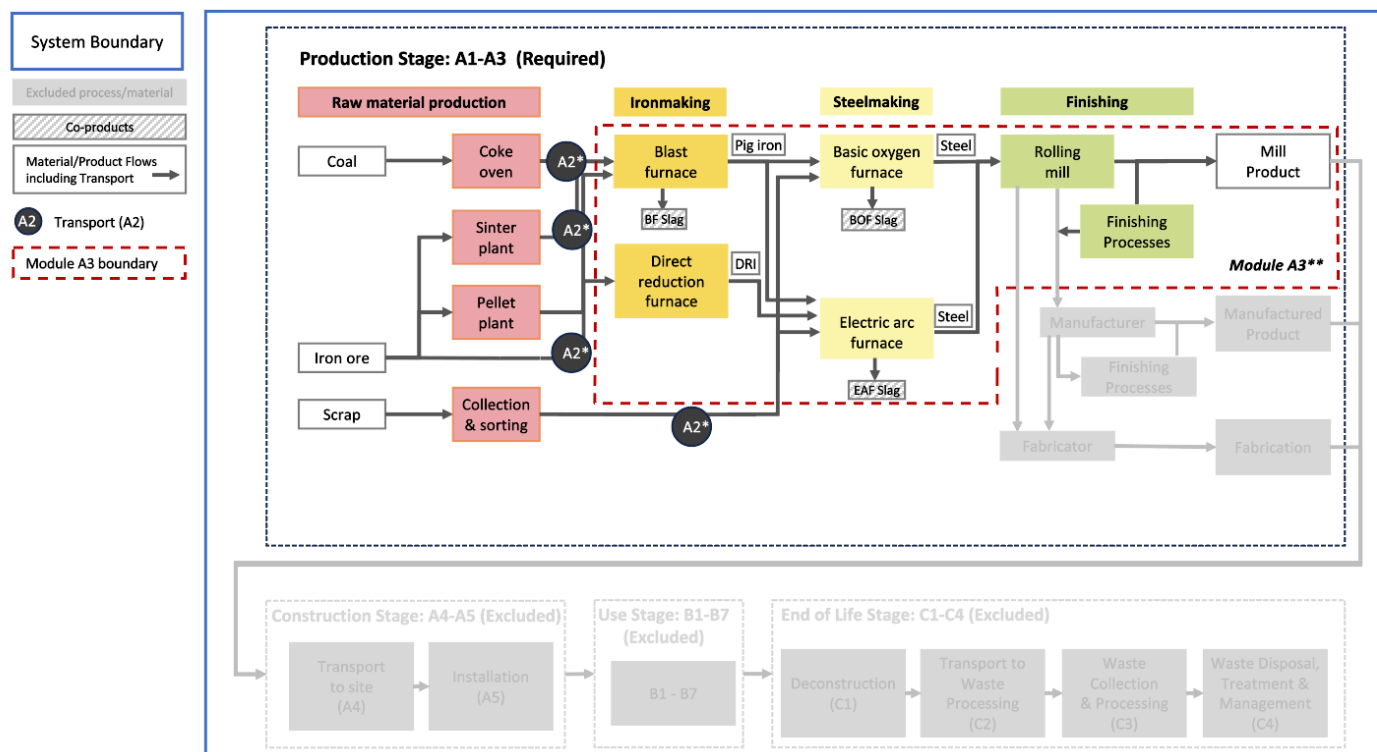
Note:

ND = Module not declared

Plants

 JSW Baytown 5200 E Mc Kinney Rd, Baytown, TX 77523, USA

Product Flow Diagram



Notes

Each unit process shall account for resource inputs (fuels, electricity, water, materials, etc) and emissions to air/land/water, wastes and co-products, if relevant

* A2 transportation is represented by any black arrow that crosses A1 / A3 boundary.

** Processes inside the red dashed line are in module A3 and should include specific data, if available.

Processes prior to the dashed red line indicate processes in module A1

Software And Database

LCA Software:

Simapro v. 9.6

LCI Foreground Database(s):

Ecoinvent v. 3.11

US LCI v.

LCI Background Database(s):

Ecoinvent v. 3.11

A foreground LCI database is the database used to model the primary, site-specific data collected for this EPD. A background LCI database is the database used to model generic or non-specific data.

Data Quality

In order to comply with the ISO 14044 (ISO, 2006) and ISO 14040 (ISO 14040, 2006) requirements, this study reports the results and conclusions of the LCA completely and accurately without bias to the intended audience. The results, data, methods, assumptions, and limitations are presented in a transparent manner and in sufficient details to allow the reader to comprehend the complexities and trade-offs inherent in the LCA. This report allows the results and interpretation to be used in a manner consistent with the goals of the study.

Life Cycle Module Description

Raw Material Supply (A1) For this JSW USA study, primary data was collected through customizable templates and reviewed internally to ensure completeness and credibility. Common practices such as mass balance, energy balance and stoichiometry were considered. Final model inputs were reviewed by the client to verify key assumptions.

Transportation to Factory (A2) Materials used in the production of steel products can be sourced from multiple suppliers. While material type is the same, transportation distance may differ drastically. In this study, a weighted average distance was estimated for each transportation mode and each material set based on primary data. The average distance per transportation mode was used for all supplied materials. Shipping distances and transportation modes between referenced JSW USA facilities were obtained from JSW USA. Weighted average shipping distances were calculated and used for all 2021 amounts within this study. Upstream transportation was modeled based on primary data using an average distance for incoming supplied ferrous scrap and pig iron. Ferrous scrap and pig iron consist of >84% of the total mass of supplied materials. The average distance is 147 km by truck and 2690 km of transport by sea. An average distance of 80.5km was used for transportation of manufacturing waste via truck.

Manufacturing (A3) The information module manufacturing includes: - A3, production of ancillary materials or pre-products - A3, generation of electricity, steam and heat from primary energy resources used in manufacturing including their extraction, refining and transport - A3, emissions from the combustion of secondary fuels and waste used in the manufacturing process - A3, manufacturing of products and co-products, including their extraction, manufacturing and transport - A3, manufacturing of packaging, including their extraction, manufacturing and transport - A3, waste management from manufacturing packaging and manufacturing wastages transport up to the recycler or disposal. **Packaging (A3)** Steel slab packaging from Mingo Junction consists of wooden cribbing and steel plate packaging from Baytown uses wooden dunnage.

LCA Discussion

Allocation Procedure

The allocations of relevance for calculation (appropriation of impacts across various products) are performed as follows:

- The use of recycled and secondary raw materials is based on the mass of the material present in a specific length of product.
- Manufacturing production is tracked by the total length of products produced, so energy, ancillary, and operating materials are allocated based on product length.

No multi-output allocation was necessary in the foreground of the study, and the secondary data that is sourced from ecoinvent v3.11 cut-off by classification has allocation applied to it.

This study uses the cut-off approach method for recycling. According to this approach, the first life of a material bears the environmental burdens of its production (e.g., raw material extraction and processing) and the second life (e.g., scrap input) bears the burdens of refurbishment (e.g., collection and refining of scrap). The burdens from recycling waste treatment are taken on by the next life of the product and are not included in this study.

Cut-off Procedure

For the processes within the system boundary, described in Study Boundaries, input and output flows of mass and energy greater than 1% (based on total mass of final product and total energy usage of the product system) or greater than 1% of environmental impacts were included within the scope of the analysis. Flows of less than 1% were included if sufficient data were available to warrant inclusion and/or the flow was thought to have significant environmental impact. Where data gaps were identified, they are filled by conservative assumptions with average, generic, or proxy data and assumptions are documented. No known flows relevant to the product system are deliberately excluded from this LCA.

All upstream activities are included using a combination of primary and secondary data. While the majority of inventory data are sourced from primary resources, representative proxies are used to close gaps in the absence of primary data.

Renewable Electricity

Energy Attribute Certificates (EACs) such as Renewable Energy Certificates (RECs) or Power Purchase Agreements (PPAs) are included in the baseline reported results:	✓ Yes
Electricity Source:	Offsite
Renewable type(s):	Wind
Commitment pledged for entire EPD validity period:	✓ Yes
Electricity accounting methodology:	Market-based

Results

Environmental Impact Assessment Results

IPCC AR6 GWP 100, TRACI 2.2

per 1 metric ton of product with a typical density of 7700 kilograms per cubic meter.

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Plate Impact Assessment Results

Impact Category	Unit	Method	A1	A2	A3	A1 - A3
GWP-total	kg CO2 eq	IPCC AR6 GWP 100	1.07e+3	2.49e+1	3.57e+2	1.45e+3
GWP-biogenic	kg CO2 eq	IPCC AR6 GWP 100	6.03e-1	0	1.21e-1	7.24e-1
GWP-fossil	kg CO2 eq	IPCC AR6 GWP 100	1.07e+3	2.49e+1	3.56e+2	1.45e+3
GWP-luluc	kg CO2 eq	IPCC AR6 GWP 100	7.11e-1	0	2.81e-2	7.39e-1
ODP	kg CFC 11 eq	TRACI 2.2	8.22e-6	9.57e-8	5.12e-6	1.34e-5
AP	kg SO2 eq	TRACI 2.2	4.44e+0	4.38e-1	3.72e-1	5.25e+0
EP-freshwater	kg P eq	TRACI 2.2	0	0	0	0
EP-marine	kg N eq	TRACI 2.2	5.83e-1	7.17e-2	6.08e-2	7.15e-1
POCP	kg O3 eq	TRACI 2.2	6.63e+1	8.83e+0	6.22e+0	8.13e+1

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particular Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product performance and

specifications have been established and serve as a functional unit for comparison. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different product category rules or are missing relevant environmental impacts. Such comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

Resource Use Indicator

per 1 metric ton of product with a typical density of 7700 kilograms per cubic meter.

Indicator	Unit	A1	A2	A3	A1 - A3
PERE	MJ, net calorific value	1.94e+3	2.39e-3	2.12e+2	2.16e+3
PERM	MJ, net calorific value	0	0	0	0
PERT	MJ, net calorific value	1.94e+3	2.39e-3	2.12e+2	2.15e+3
PENRE	MJ, net calorific value	1.38e+4	1.19e+1	6.18e+3	1.99e+4
PENRM	MJ, net calorific value	0	0	0	0
PENRT	MJ, net calorific value	1.38e+4	1.19e+1	6.18e+3	2.00e+4
SM	kg	7.29e+2	0	0	7.29e+2
RSF	MJ, net calorific value	0	0	0	0
NRSF	MJ, net calorific value	0	0	0	0
RE	MJ	0	0	0	0
FW	m3	1.22e+4	1.10e+1	5.34e+3	1.76e+4

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRM or PENRT = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

Waste and Output Flow Indicators

per 1 metric ton of product with a typical density of 7700 kilograms per cubic meter.

Indicator	Unit	A1	A2	A3	A1 - A3
HWD	kg	0	0	0	0
NHWD	kg	0	0	7.11e+0	7.11e+0
RWD	kg	0	0	0	0
CRU	kg	0	0	0	0
MFR	kg	0	0	0	0
MER	kg	0	0	1.78e+2	1.78e+2
EEE	MJ	0	0	0	0
EET	MJ	0	0	0	0

Note:

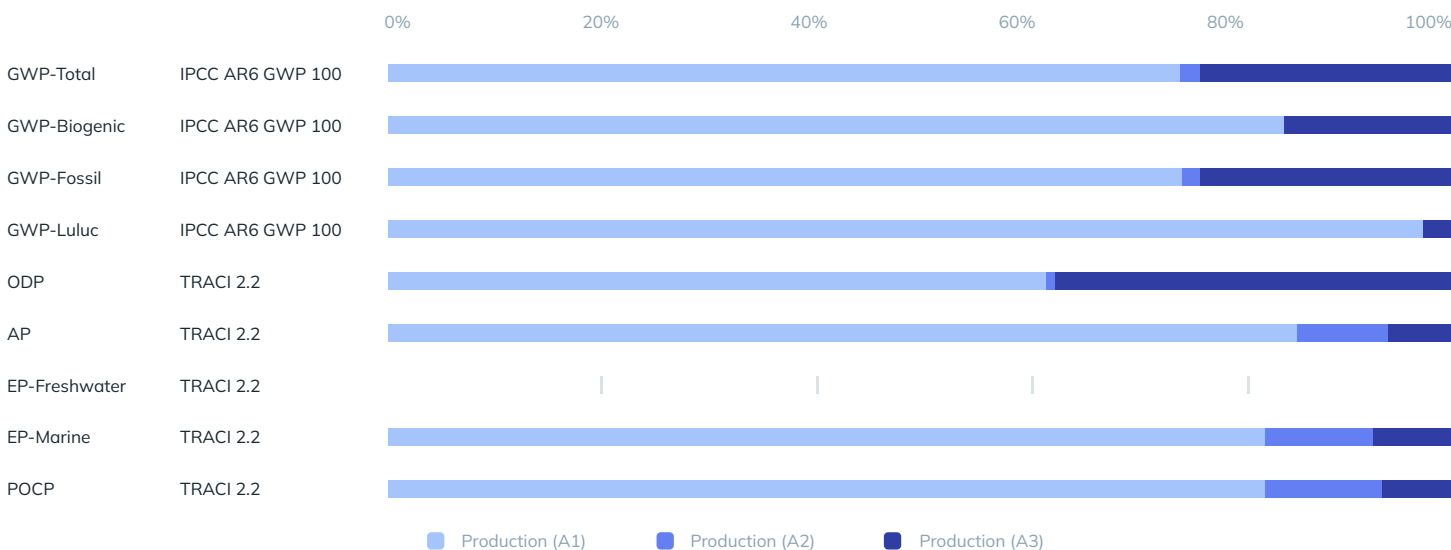
Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.

Interpretation

The analysis of JSW's Greenedge plate product and JSW slab provides useful insights regarding the cradle-to-grave environmental impacts. The LCA results also identify where substantial impacts are occurring to allow further process and materials improvements to be implemented by the reporting company. The cradle-to-grave impacts for both products are dominated by the A1 Raw Materials Extraction and Processing stage (between 60-94% for all impact categories for either slab or the final plate product). For plate, slab manufacturing is a main driver of impacts.



Modified Impact Results: Renewable Electricity

per 1 metric ton of product with a typical density of 7700 kilograms per cubic meter.

Impact Category	Unit	Method	A1	A2	A3	A1 - A3
GWP-total	kg CO2 eq	IPCC AR6 GWP 100	1.23e+3	2.49e+1	3.57e+2	1.61e+3
GWP-biogenic	kg CO2 eq	IPCC AR6 GWP 100	6.45e-1	0	1.21e-1	7.66e-1
GWP-fossil	kg CO2 eq	IPCC AR6 GWP 100	1.23e+3	2.49e+1	3.56e+2	1.61e+3
GWP-luluc	kg CO2 eq	IPCC AR6 GWP 100	7.18e-1	0	2.81e-2	7.46e-1
ODP	kg CFC 11 eq	TRACI 2.2	8.78e-6	9.57e-8	5.12e-6	1.40e-5
AP	kg SO2 eq	TRACI 2.2	4.86e+0	4.38e-1	3.72e-1	5.67e+0
EP-freshwater	kg P eq	TRACI 2.2	0	0	0	0
EP-marine	kg N eq	TRACI 2.2	6.21e-1	7.17e-2	6.08e-2	7.53e-1
POCP	kg O3 eq	TRACI 2.2	7.02e+1	8.83e+0	6.22e+0	8.53e+1

Note:

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particular Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

- GWP – Total: Reduced by 9.86%
- ODP - Reduced by 3.98%
- AP - Reduced by 7.40%
- EP - Reduced by 5.06%
- SFP - Reduced by 4.51%

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