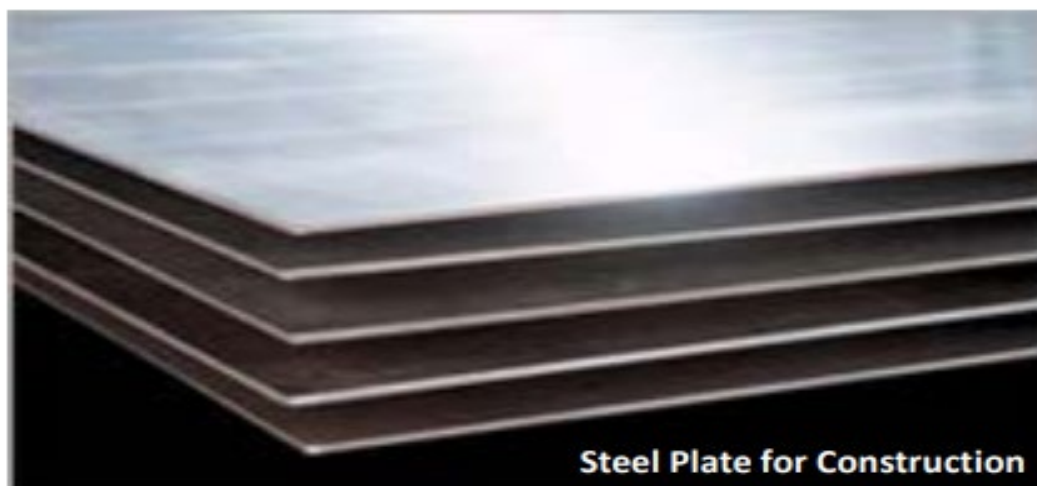


 **NIPPON STEEL | NIPPON STEEL CORPORATION**

Steel Plate for Construction



Functional unit

1 t

System boundary

final products intermediate products

Production Stage and optional supplementary information

Main specifications of the product

Production sites : East Nippon Works (Kashima Area)
 East Nippon Works (Kimitsu Area)
 Nagoya Works
 Kyushu Works (Oita Area)

Main standards : Standards for products used in fields such as shipbuilding, machinery, offshore structures, windpower, line pipes, boiler, pressure vessels, penstock, bridge, etc.

Type: Steel Plate

Company Information

NIPPON STEEL CORPORATION
<https://www.nipponsteel.com/>

Registration#	JR-AJ-22001E-B
PCR number	PA-180000-AJ-06
PCR name	Steel products for construction use
Publication date	02/14/2022
Verification date	01/16/2024
Verification method	Product-by-product
Verification#	JV-AJ-24011
Expiration date	1/6/2027
PCR review was conducted by:	
Approval date	05/10/2023
PCR review panel chair	Yasunari Matsuno (Chiba University)

Third party verifier*

Takahiro Atoh

Independent verification of data & declaration in accordance with ISO14025

internal external

*Auditor's name is stated if system certification has been performed.

Registration number : JR-AJ-22001E-B

1. Results of life cycle impact assessment (LCIA)

Parameter	Stage	[A1~A3] + [D]	[A1~A3]	Unit
Global warming IPCC2013 GWP100a		1300	2500	kg-CO ₂ eq
Acidification		0.035	1.9	kg-SO ₂ eq
Eutrophication		0.025	0.046	kg-PO ₄ ³⁻ eq

Be sure to refer to "6-1. Supplementary environmental information" for Scope 3 and carbon footprint calculations.

Table Legend

【A1】: Raw material supply

【A2】: Transport to factory

【A3】: Manufacturing

【D】: Recycling potential

【A1~A3】: sum of 【A1】、【A2】and【A3】 (cradle to gate)

【A1~A3】+【D】: sum of 【A1】、【A2】、【A3】 and 【D】

Parameter	stage	Unit	[A1~A3]	[A1]	[A2]	[A3]	[D]
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	2.5E+03	4.7E+02	1.2E+02	1.9E+03	-1.2E+03
Ozone layer destruction		kg-CFC-11eq	6.8E-05	6.9E-05	7.9E-10	-4.3E-07	-2.1E-07
Acidification		kg-SO ₂ eq	1.9E+00	4.9E-01	6.6E-02	1.3E+00	-1.8E+00
Photochemical ozone		kg-C ₂ H ₄ eq	1.3E-02	4.9E-03	1.1E-03	7.5E-03	-2.6E-01
Eutrophication		kg-PO ₄ ³⁻ eq	4.6E-02	3.6E-03	7.1E-13	4.3E-02	-2.2E-02

2. Life cycle inventory analysis (LCI)

Parameter	Unit
Non-renewable material resources	7.0E+02 kg
Renewable material resources	1.0E+03 kg
Non-renewable energy resources	2.6E+04 MJ
Renewable primary energy	-4.0E+02 MJ
Consumption of freshwater	5.0E+02 m ³

3. Material composition

Material	Unit
iron [Fe]	≥96.9 %
carbon [C]	≤0.45 %
silicon [Si]	≤0.70 %
manganese [Mn]	≤2.00 %
phosphorus [P]	≤0.035 %
sulfur [S]	≤0.035 %

4. Waste to disposal

Parameter	Unit
Hazardous waste	0.0E+00 kg
Non-hazardous waste.	1.7E+00 kg
Industrial waste(landfill)	1.7E+00 kg

*Data derived from LCA and not assigned to the impact categories of LCIA

5. Additional explanation

①Each LCI includes allocation for scrap recycling as an optional supplementary information [D]. Recycling rate (RR) used in this calculation is 93.0% (calculated based on ISO 20915/JIS Q 20915 standards and using FY 2018 data from Japan Steel Can Recycling Association and Tetsugen Association).

②Material transport scenario is based on PCR.

③Each item (except iron) in table 3 is the maximum value of all product standards covered by this EPD.

④The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.

⑤Typical Standards:

•Offshore Structure: EN10225, API2W50&60

•Shipbuilding: Each ship class

•Machinery: ABREX®, WEL-TEN®, S-TEN®

•Wind Power: SM, EN10025

•Line Pipe: API 5L(base material)

•Boiler & Pressure Vessel: SPV, (S)A516, (S)A387, (S)A537, (S)A553, (S)A841

•Penstock: WEL-TEN®

•Brigde: COR-TEN®, NAW-TEN®,

COR-SPACE®, SBHS, (S)A709

LCI

6-1. Supplementary environmental information

East Nippon Works (Kashima Area), East Nippon Works (Kimitsu Area).Nagoya Works and Kyushu Works (Oita Area) have ISO 14001 certificates

Note on Global warming IPCC2013 GWP100a: When purchasers of this product calculate GHG emissions under GHG Protocol Scope 3, Category 1 for their organization, or when calculating the carbon footprint of products manufactured using this product, they must check the following URL:

<https://www.nipponsteel.com/en/product/cfp/certificate.html>

(The content of the above URL is not subject to EPD verification.)

6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
Manganese [Mn]	7439-96-5	Industrial Safety and Health Act

7. Assumptions of secondary data used

The IDEA2.1.3 data and steel scrap data(JP-AJ-0001) from the Japan Iron and Steel Federation are used.

8. Remarks

January 2024; Modification about allocation method of by-product gases

April 2026; Additional explanatory notes added to "6-1. Supplementary environmental information".

- For data quantification, please refer to PCR and Rules on quantification and declaration.
- Comparative assertion is permitted only when Rules on quantification and declaration are satisfied.
(Reference URL : <https://ecoleaf-label.jp/regulation/>)