



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AJ-22003E-A

Japan EPD Program by SuMPO

Sustainable Management Promotion Organization

14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan

<https://ecoleaf-label.jp/>



## Pickled Steel Sheets and Coils (for construction)



### Functional unit

1 t

### System boundary

final products     intermediate products

### Main specifications of the product

Production sites:

East Nippon Works, Nagoya Works,

Setouchi Works, Kyushu Works

Main standards:

JIS(Japanese Industrial Standards),

NIPPON STEEL standards

For details, please refer to "8. Remarks" in EL sheet 2.

Shape: Coil and sheet

Main thickness (unit: mm, t:=thickness) : t =1.2~9.0

### Company Information

**NIPPON STEEL CORPORATION**

Flat Products Unit Flat Products Planning Dept.

<https://www.nipponsteel.com/>

<b>Registration#</b>	JR-AJ-22003E-A
<b>PCR number</b>	PA-180000-AJ-06
<b>PCR name</b>	Steel products for construction
<b>Publication date</b>	4/21/2022
<b>Verification date</b>	1/19/2024
<b>Verification method</b>	Product-by-product
<b>Verification#</b>	JV-AJ-24017
<b>Expiration date</b>	3/17/2027
<b>PCR review was conducted by:</b>	
<b>Approval date</b>	5/10/2023
<b>PCR review panel chair</b>	Yasunari Matsuno (Chiba University)

### Third party verifier\*

Tomoko Fuchigami

Independent verification of data & declaration in accordance with ISO14025 and ISO21930

internal     external

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

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**1. Results of life cycle impact assessment (LCIA)**

Parameter	Stage	[A1~A3] + [D]	[A1~A3]	Unit	Table Legend			
Global warming IPCC2013 GWP100a		1200	2400	kg-CO <sub>2</sub> eq	【A1】: Raw mterial 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】 (cradle to gate with allocation for scrap recycling)			
Acidification		-0.060	1.8	kg-SO <sub>2</sub> eq				
Eutrophication		0.0094	0.032	kg-PO <sub>4</sub> -eq				

  

Parameter	stage	Unit	[A1~A3]	[A1]	[A2]	[A3]	[D]
Global warming IPCC2013 GWP100a		kg-CO <sub>2</sub> eq	2.4E+03	5.0E+02	1.1E+02	1.8E+03	-1.2E+03
Ozone layer destruction		kg-CFC-11eq	-2.4E-07	1.0E-07	6.9E-10	-3.4E-07	-2.2E-07
Acidification		kg-SO <sub>2</sub> eq	1.8E+00	4.3E-01	5.9E-02	1.3E+00	-1.9E+00
Photochemical ozone		kg-C <sub>2</sub> H <sub>4</sub> eq	1.2E-02	4.3E-03	9.8E-04	6.9E-03	-2.6E-01
Eutrophication		kg-PO <sub>4</sub> <sup>3-</sup> eq	3.2E-02	2.2E-03	6.2E-13	2.9E-02	-2.2E-02

**2. Life cycle inventory analysis (LCI)**

項目		単位
Non-renewable material resources	6.4E+02	kg
Non-renewable energy resources	2.6E+04	MJ
Renewable material resources	9.0E+02	kg
Renewable primary energy	1.5E+02	MJ
Consumption of freshwater	1.1E+00	m <sup>3</sup>

**3. Material composition**

Material		Unit
iron [Fe]	≥95.0	%
carbon [C]	≤1.10	%
silicon [Si]	≤3.00	%
manganese [Mn]	≤3.00	%
phosphorus [P]	≤0.050	%
sulfur [S]	≤0.050	%

**4. Waste to disposal**

Parameter		Unit
Hazardous waste	-	kg
Non-hazardous waste.	1.7E+00	kg

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

**5. Additional explanation**

① Each LCI includes allocation for scrap recycling as an optional supplementary information [End-of-Life].

The indirect effect is added to the total value in Tables [Raw material acquisition], [Production] and [Distribution].

Recyclingrate (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).

② Material transport scenarios based on PCR.

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

However, the iron content in each product is never less than 95%, and the contents of other components are adjusted.

④ Primary data collected in 2018. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.

⑤ For the transport of metallurgical coal, the amount is double counted in Tables [Raw material acquisition] and [Distribution] due to the characteristics of the consumption rate database on which this estimation is based.

**6-1. Supplementary environmental information**

East Nippon Works, Nagoya Works, Setouchi Works and Kyushu Works have ISO 14001 certificates.

**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**

We use the IDEA v2.1.3 data and steel scrap data(JP-AJ-0001) from the Japan Iron and Steel Federation.

**8. Remarks**

<The details about Main standards>

Typical Standards of JIS :

- JIS G 3101 Hot Rolled Steel Sheets and Coils for General Structures (e.g.:SS330,SS400)
- JIS G 3106 Hot Rolled Steel Sheets and Coils for Welded Structures (e.g.:SM400A)
- JIS G 3125 Corrosion Resistant Rolled Steel Sheets and Coils (e.g.: SPA-H)
- JIS G 3116 Hot Rolled Steel Sheets and Coils for Gas Cylinders (e.g.:SG255)
- JIS G 3131 Hot Rolled Mild Steel Sheets and Coils (e.g.:SPHC)
- JIS G 3132 Hot Rolled Carbon Steel Sheets and Coils for Pipes and Tubes (e.g.:SPHT1)

Typical Standards of NIPPON STEEL standards :

- Flooring Sheets and Coils (e.g.:NFP)
- Longitudinally Striped Steel Sheets and Coils (e.g.:NFPA1)

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

- 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/>)