



SuMPO EPD

Type III Environmental Declaration (EPD)

Registration number : JR-AX-23002E-A

Japan EPD Program by SuMPO

Sustainable Management Promotion Organization

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

KANDA SQUARE GATE

<https://ecoleaf-label.jp>



NIPPON STEEL METAL PRODUCTS CO.,LTD.

Cold-pressed Steel Square and Rectangular Tubes



Functional unit

1 t

System boundary

final products intermediate products

Production Stage and optional supplementary information

Main specifications of the product

Production sites : Kimitsu Mill

Main standards :

JISF standards, The Minister Certified steels for

Constructions

Type : Square and Rectangular

Main sizes(unit:mm,t:thickness) : t=16~40

Company Information

NIPPON STEEL METAL PRODUCTS CO.,LTD.

<https://www.ns-kenzai.co.jp/english/index.html>

Registration#	JR-AX-23002E-A
PCR number	PA-180000-AX-05
PCR name	Steel products with secondary processing for construction
Publication date	04/01/23
Verification date	03/14/23
Verification method	Product-by-product
Verification#	JV-AX-24012
Expiration date	03/13/28
PCR review was conducted by:	
Approval date	01/06/23
PCR review panel chair	Yasunari Matsuno (Chiba University)

Third party verifier*

Hiroyuki Uchida

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
Global warming IPCC2013 GWP100a		1600	3200	kg-CO ₂ eq
Acidification		-0.33	2.10	kg-SO ₂ eq
Eutrophication		0.0022	0.031	kg-PO ₄ ³⁻ eq

Parameter	stage	Unit	[A1~A3]	[A1]	[A2]	[A3]	[D]
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	3.2E+03	3.1E+03	0.0E+00	7.8E+01	-1.6E+03
Ozone layer destruction		kg-CFC-11eq	2.5E-06	2.0E-06	0.0E+00	5.4E-07	-2.9E-07
Acidification		kg-SO ₂ eq	2.1E+00	2.1E+00	0.0E+00	3.8E-02	-2.4E+00
Photochemical ozone		kg-C ₂ H ₄ eq	2.2E-02	2.0E-02	0.0E+00	1.5E-03	-3.4E-01
Eutrophication		kg-PO ₄ ³⁻ eq	3.1E-02	3.1E-02	0.0E+00	3.1E-05	-2.9E-02

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	1.0E+03	kg
Non-renewable energy resources	3.4E+04	MJ
Renewable material resources	1.4E+03	kg
Renewable primary energy	-7.8E+02	MJ
Consumption of freshwater	4.6E+00	m ³

3. Material composition

Material		Unit
iron [Fe]	96.9	%
carbon [C]	0.25	%
silicon [Si]	0.55	%
manganese [Mn]	2.00	%
phosphorus [P]	0.03	%
sulfur [S]	0.02	%
Others	0.25	%

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.00E+00	kg
Non-hazardous waste.	6.2E+00	kg

5. Additional explanation

- 1) This base material is High Tensile Steel Plates for Building Structures: BT-HT™ Series made by Nippon Steel (Ecoleaf registration No.: JR-AJ-21007E-A).
- 2) Because this product is secondary processing product, the indirect effect is evaluated about the base material. Each LCI includes allocation for scrap recycling as an optional supplementary information [D] at table.1. Recycling rate (RR) used in this calculation is 93.0% (calculated based on ISO 20915/JIS Q20915 and using Japan data in 2018 from Japan Iron and Steel Federation and Japan Steel Can Recycling Association).
- 3) Transport distance is zero because Nippon Steel site and Nippon Steel metal products site are located at same place.
- 4) 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 96.90%, and the contents of other components are adjusted.
- 5) Primary data collected in 2021. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.

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



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6-1. Supplementary environmental information

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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 IDEA2.1.3 data and scrap iron data from the Japan Iron and Steel Federation(J.I.S.F).

8. Remarks

Updated on July 30, 2024 -> The latest registered data of intensity (JR-AJ-21007E-A) are applied.

Changed from Ecoleaf Mark to SuMPO EPD Mark on January 31, 2025.

- 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/>)

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