Japan EPD Program by SuMPO

Sustainable Management Promotion Organization 14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo, Japan https://ecoleaf-label.jp

NIPPON STEEL

NIPPON STEEL METAL PRODUCTS CO.,LTD.

Cold-pressed Steel Square and Rectangular Tubes





Functional unit

1 t

System boundary

 \square final products

■intermediate products

Production Stage and optional supplementary infomation

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) : $t=16\sim40$

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

Third party verifier*

Hiroyuki Uchida

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

□internal ■ external

Registration number: JR-AX-23002E-A

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

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1. Results of life cycle impact assessment (LCIA)

Stage Parameter	[A1~A3] + [D]	[A1~A3]	Unit
Global warming IPCC2013 GWP100a	1600	3200	kg-CO₂eq
Acidification	-0.33	2.10	kg-SO₂eq
Eutrophication	0.0022	0.031	kg-PO ₄ ³ -eq

stage						
Parameter	Unit	[A1~A3]	[A1]	[A2]	[A3]	[D]
Global warming IPCC2013 GWP100a	kg-CO₂eq	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-SO₂eq	2.1E+00	2.1E+00	0.0E+00	3.8E-02	-2.4E+00
Photochemical ozone	kg-C₂H₄eq	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

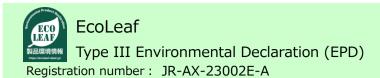
3. Material composition			
Material		Unit	
iron [Fe]	96.9	%	
carbon [C]	0.25	%	
silicon [Si]	0.55	%	
manganese [Mn]	2.00	%	
phosphorus [P]	0.03	%	
sulfur [S]	0.02	%	
Others	0.25	%	

4. Waste to disposal		
Parameter		Unit
Hazardous waste	0.00E+00	kg
Non-hazardous waste.	6.2E+00	kg

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

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 SteelFederation 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 (expect 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.



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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 scrup 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.

- 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/)

Registration number: JR-AX-23002E-A