



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AJ-19005E-A

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 CORPORATION

NS Tough & Thick Web H-shapes(NS-TWH™)



Functional unit

1 t

System boundary

final products intermediate products

Production Stage and optional supplementary information

Main specifications of the product

Production sites : Kashima Works

Main standards :

SN400A,SN400B,SN400C,SN490B,SN490C,SM400A,SM400B,

SM490A,SM490B,SS400

Type : H-shape

Main sizes(unit mm,t thickness)

H396(t25) × B315(t19) ~H414(t34) × B324(t28),

H398(t25) × B412(t20) ~H458(t55) × B442(t50)

Company Information

NIPPON STEEL CORPORATION

<https://www.nipponsteel.com/en/product/construction/>

Registration#	JR-AJ-19005E-A
PCR number	PA-180000-AJ-06
PCR name	Steel products for construction
Publication date	12/6/2019
Verification date	01/12/2024
Verification method	Product-by-product
Verification#	JV-AJ-24004
Expiration date	01/11/2029
PCR review was conducted by:	
Approval date	05/10/2023
PCR review	Yasunari Matsuno
panel chair	Chiba University

Third party verifier*

Yasuo Koseki

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		1100	2200	kg-CO2eq
Acidification		0.66	2.3	kg-SO2eq
Photochemical ozone		-0.22	0.017	kg-C2H4eq

Table Legend
 【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

Parameter	stage	Unit	【A1~A3】	【A1】	【A2】	【A3】	【D】
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	2.2E+03	4.8E+02	1.1E+02	1.6E+03	-1.1E+03
Ozone layer destruction		kg-CFC-11eq	-1.3E-07	1.4E-07	7.1E-10	-2.7E-07	-2.0E-07
Acidification		kg-SO ₂ eq	2.3E+00	7.0E-01	6.6E-02	1.6E+00	-1.7E+00
Photochemical ozone		kg-C ₂ H ₄ eq	1.7E-02	5.8E-03	1.0E-03	1.1E-02	-2.3E-01
Eutrophication		kg-PO ₄ ³⁻ eq	9.7E-02	1.4E-02	6.4E-13	8.4E-02	-2.0E-02

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	6.6E+02	kg
Non-renewable energy resources	2.3E+04	MJ
Renewable material resources	1.0E+03	kg
Renewable primary energy	-2.7E-02	MJ
Consumption of freshwater	5.6E-01	m ³

3. Material composition

Material		Unit
iron [Fe]	97.4	%
carbon [C]	0.25	%
silicon [Si]	0.55	%
manganese [Mn]	1.65	%
phosphorus [P]	0.05	%
sulfur [S]	0.05	%

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.00E+00	kg
Non-hazardous waste.	5.54E+00	kg

5. Additional explanation

- Each LCI includes allocation for scrap recycling as an optional supplementary information [D]. Recycling rate (RR) used in this calculation is 93.1% (calculated based on ISO 20915/JIS Q 20915 and using Japan data from Japan Iron and Steel Federation and Japan Steel Can Recycling Association).
- Scenarios of transport to site follow the PCR.
- Each item (except iron) in table 3 is the maximum value of the standards of the products.
- The average grid power supply of 10 electric power suppliers of Japan in 2014 is used in the LCI calculation for grid electricity.
 Following standards are available on made-to-order basis, in addition to the regular standards listed on sheet 1:
 ・SM490YA, SM490YB, SS400, NSGH325B, NSGH325C, NSGH355B, NSGH355C

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



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6-1. Supplementary environmental information

Kashima Works is certified to ISO 14001.

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 steel scrap data from The Japan Iron and Steel Federation (JISF).

8. Remarks

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

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

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