



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AJ-19003E-C

Japan EPD Program by SuMPO

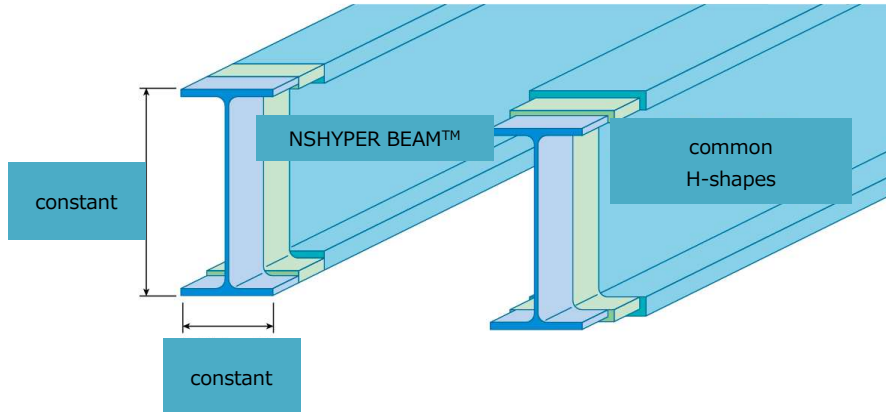
Sustainable Management Promotion Organization

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

<https://ecoleaf-label.jp>

NIPPON STEEL | NIPPON STEEL CORPORATION

## NSHYPER BEAM™



## Functional unit

1 t

## System boundary

 final products       intermediate products

Production Stage and optional supplementary information

## Main specifications of the product

Production sites : Kashima and Wakayama Works

Main standards :

SN400A, SN400B, SN490B, SM400A, SM400B, SM490A, SM490B,

SM490YA, SM490YB, SS400, NSYP345B

Type : H-shape

Main sizes(unit:mm,t:thickness)

H400(t 9) × B200(t12)~H1,200(t22) × B500(t40)

## Company Information

NIPPON STEEL CORPORATION

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

Registration#	JR-AJ-19003E-C
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-24002
Expiration date	01/11/2029
PCR review was conducted by:	
Approval date	05/10/2023
PCR review panel chair	Yasunari Matsuno Chiba University

## Third party verifier\*

Yasuo Koseki

Independent verification of data &amp; 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		1400	2600	kg-CO2eq
Acidification		0.10	1.8	kg-SO2eq
Photochemical ozone		0.65	0.89	kg-C2H4eq

**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】 (cradle to gate with allocation for scrap recycling)

Parameter	stage	Unit	[A1~A3]	[A1]	[A2]	[A3]	[D]
Global warming IPCC2013 GWP100a		kg-CO <sub>2</sub> eq	2.6E+03	6.3E+02	1.2E+02	1.8E+03	-1.1E+03
Ozone layer destruction		kg-CFC-11eq	2.3E-06	1.7E-07	7.9E-10	2.2E-06	-2.0E-07
Acidification		kg-SO <sub>2</sub> eq	1.8E+00	5.3E-01	6.7E-02	1.2E+00	-1.7E+00
Photochemical ozone		kg-C <sub>2</sub> H <sub>4</sub> eq	8.9E-01	4.8E-03	1.0E-03	8.8E+00	-2.4E-01
Eutrophication		kg-PO <sub>4</sub> <sup>3-</sup> eq	4.1E-02	3.7E-05	7.1E-13	4.1E-02	-2.1E-02

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

Parameter	Unit	Unit
Non-renewable material resources	9.0E+02	kg
Non-renewable energy resources	3.0E+04	MJ
Renewable material resources	8.9E+02	kg
Renewable primary energy	9.7E+02	MJ
Consumption of freshwater	3.9E+00	m <sup>3</sup>

### 3. Material composition

Material	Unit	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	Unit
Hazardous waste	0.00E+00	kg
Non-hazardous waste.	2.03E+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:  
 • SN400C, SN490C, SMA400AW, SMA400BW, SMA490AW, SMA490BW

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



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### 6-1. Supplementary environmental information

Kashima Works and Wakayama Works are 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

6/12/2021 Table Legend and 5. Additional explanation added and amended in accordance with the declaration published in Japanese.

3/17/2020 The spec of main sizes has been changed by adding larger sizes(MEGA NSHYPER BEAMTM ).

- 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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