



EcoLeaf

EcoLeaf Environmental Labeling Program

Type III Environmental Declaration (EPD)

Sustainable Management Promotion Organization

2-1, Kaji-cho 2 chome, Chiyoda-ku, Tokyo Japan

Registration number : JR-AJ-19010E

<https://ecoleaf-label.jp>

NIPPON STEEL | NIPPON STEEL CORPORATION

NS Fire resistant steel



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 Kimitsu Works

Main standards :

SM400A, SM490A

Type : H-shape

Sizes(unit:mm,t:thickness)

- (Please contact us.)

Company Information

NIPPON STEEL CORPORATION

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

Registration#	JR-AJ-19010E
PCR number	PA-180000-AJ-02
PCR name	Steel products for construction
Publication date	12/6/2019
Verification date	11/29/2019
Verification method	Product-by-product
Verification#	JV-AJ-19010
Expiration date	11/28/2019
PCR review was conducted by:	
Approval date	8/13/2019
PCR review	Yasunari Matsuno
panel chair	(Chiba University)

Third party verifier*

Katsuyuki Nakano

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		690	1900	kg-CO ₂ eq
Acidification		0.084	2.0	kg-SO ₂ eq
Photochemical ozone		-0.25	0.018	kg-C ₂ H ₄ eq

Parameter	stage	Unit	[A1~A3]	[A1]	[A2]	[A3]	[D]
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	1.9E+03	5.7E+02	1.0E+02	1.3E+03	-1.2E+03
Ozone layer destruction		kg-CFC-11eq	5.4E-07	3.5E-07	6.9E-10	1.9E-07	-2.2E-07
Acidification		kg-SO ₂ eq	2.0E+00	4.5E-01	6.2E-02	1.5E+00	-1.9E+00
Photochemical ozone		kg-C ₂ H ₄ eq	1.8E-02	4.4E-03	1.1E-03	1.2E-02	-2.7E-01
Eutrophication		kg-PO ₄ ³⁻ eq	1.7E-02	1.5E-05	6.2E-13	1.7E-02	-2.3E-02

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	7.6E+02	kg
Non-renewable energy resources	2.7E+04	MJ
Renewable material resources	9.1E+02	kg
Renewable primary energy	-2.4E-02	MJ
Consumption of freshwater	3.9E-01	m ³

3. Material composition

Material		Unit
iron [Fe]	≥96.0	%
carbon [C]	≤0.15	%
silicon [Si]	≤0.55	%
manganese [Mn]	≤1.65	%
phosphorus [P]	≤0.04	%
sulfur [S]	≤0.04	%
chromium [Cr]	≤0.70	%
molybdenum [Mo]	≤0.90	%

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.00E+00	kg
Non-hazardous waste.	1.83E+00	kg

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

5. Additional explanation

- ①Each LCI figure includes allocation for scrup recycling as a optional supplementary information[D].Recycling rate(RR) of this EPD is 93.1%(the average of Japan in 2014).
 - ②Transport to site scienario is based on PCR.
 - ③Each material figure(except iron) is the maximum value of these product standers.
 - ④The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
- The folowing standards are also available for this product as a custom-order.

・SN400C,SN490C



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6-1. Supplementary environmental information

Kashima and Kimitsu 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
chromium [Cr]	7440-47-3	Industrial Safety and Health Act
molybdenum [Mo]	7439-98-7	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

- 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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