



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AX-23001E

Japan EPD Program by SuMPO

Sustainable Management Promotion Organization

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

<https://ecoleaf-label.jp>



NIPPON STEEL METAL PRODUCTS CO.,LTD.

Steel Decks



Functional unit

1 t

System boundary

final products intermediate products

Production Stage and optional supplementary information

Main specifications of the product

Production sites : Nogi Works,Osaka Works,Tobata Forming Mill

Main standards :

JIS,The Minister Certified steels for Constructions

Type : Steel Decks

Main sizes(unit mm,t thickness) :t=0.8 ~ 1.6

Company Information

NIPPON STEEL METAL PRODUCTS CO.,LTD.

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

Registration#	JR-AX-23001E
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	Product-by-product
Verification#	JV-AX-23001
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		1100	2500	kg-CO ₂ eq
Acidification		1.2	3.3	kg-SO ₂ eq
Eutrophication		0.016	0.041	kg-PO ₄ ³⁻ -eq

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 togate with allocation for scrap recycling)

Parameter	stage	Unit	【A1~A3】	【A1】	【A2】	【A3】	【D】
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	2.5E+03	2.4E+03	3.3E+01	4.7E+01	-1.3E+03
Ozone layer destruction		kg-CFC-11eq	-1.8E-07	-2.1E-07	2.4E-10	2.3E-08	-2.4E-07
Acidification		kg-SO ₂ eq	3.3E+00	2.9E+00	3.6E-01	2.0E-02	-2.1E+00
Photochemical ozone		kg-C ₂ H ₄ eq	3.0E-02	2.2E-02	6.6E-03	1.3E-03	-2.9E-01
Eutrophication		kg-PO ₄ ³⁻ -eq	4.1E-02	4.1E-02	2.1E-13	1.7E-07	-2.5E-02

2. Life cycle inventory analysis (LCI)

Parameter	Unit
Non-renewable material resources	7.3E+02 kg
Non-renewable energy resources	3.7E+04 MJ
Renewable material resources	1.2E+03 kg
Renewable primary energy	7.4E+02 MJ
Consumption of freshwater	2.7E+00 m ³

3. Material composition

Material	Unit
iron [Fe]	95.0 %
carbon [C]	1.10 %
silicon [Si]	3.00 %
manganese [Mn]	3.00 %
phosphorus [P]	0.050 %
sulfur [S]	0.050 %
zinc [Zn]	5.00 %
aluminium [Al]	4.00 %

4. Waste to disposal

Parameter	Unit
Hazardous waste	0.00E+00 kg
Non-hazardous waste.	1.9E+00 kg

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

5. Additional explanation

- 1) This base material is Hot-dip galvanized and aluminium alloy coated sheet for construction made by Nippon Steel(Ecoleaf registration No.:JR-AJ-22006E).
- 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 between Nippon Steel and Nippon Steel metal products is measured by geographic software.
- 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 95.0%, 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

Nogi Works, Osaka Works and Tobata 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

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

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- 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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