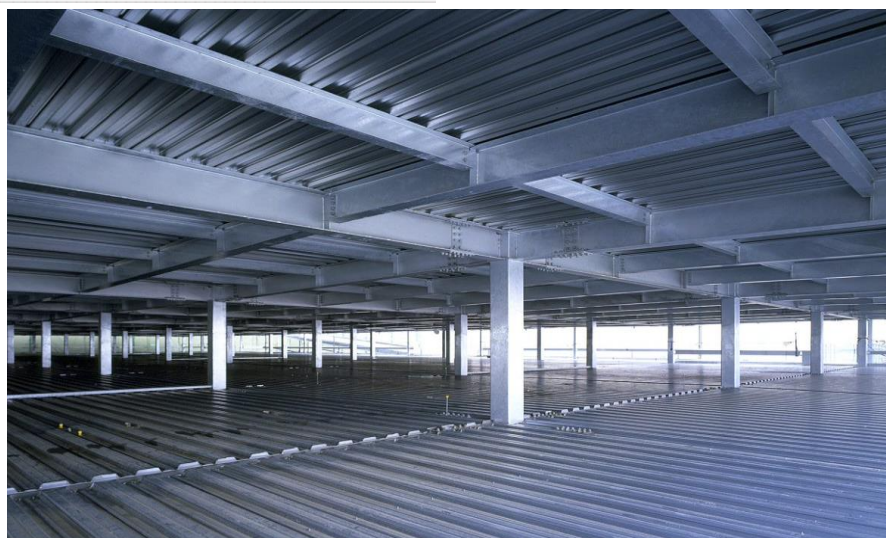


Steel Decks



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-A |
| PCR number | PA-180000-AX-05 |
| 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-24011 |
| 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.

1. Results of life cycle impact assessment (LCIA)

| Parameter | Stage | 【A1~A3】 + 【D】 | 【A1~A3】 | Unit |
|---------------------------------|-------|------------------|---------|-------------------------------------|
| Global warming IPCC2013 GWP100a | | 1800 | 3200 | kg-CO ₂ eq |
| Acidification | | 0.76 | 2.8 | 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 | 3.2E+03 | 3.1E+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 | 2.8E+00 | 2.5E+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 | Unit |
|----------------------------------|---------|----------------|
| Non-renewable material resources | 7.2E+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 | Unit |
|----------------|--------|------|
| iron [Fe] | ≥84.0 | % |
| 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 | Unit |
|----------------------|----------|------|
| Hazardous waste | 0.00E+00 | kg |
| Non-hazardous waste. | 1.9E+00 | kg |

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-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 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.

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



SuMPO EPD

Type III Environmental Declaration (EPD)

Registration number : JR-AX-23001E-A

Japan EPD Program by SuMPO

Sustainable Management Promotion Organization

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

KANDA SQUARE GATE

<https://ecoleaf-label.jp>

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

Updated on July 30, 2024 -> The latest registered data of intensity (JR-AJ-22006E-A) are applied.

Changed from Ecoleaf Mark to SuMPO EPD Mark on January 31, 2025.

- 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-23001E-A