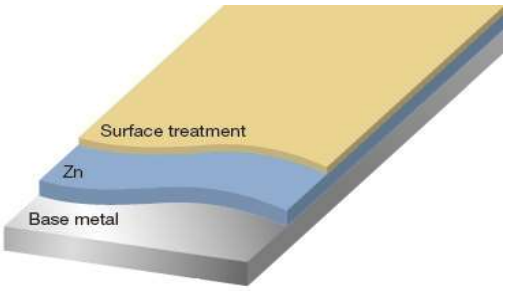
EcoLeaf
Type III Environmental Declaration (EPD)
Registration number： JR-AJ-22004E-A

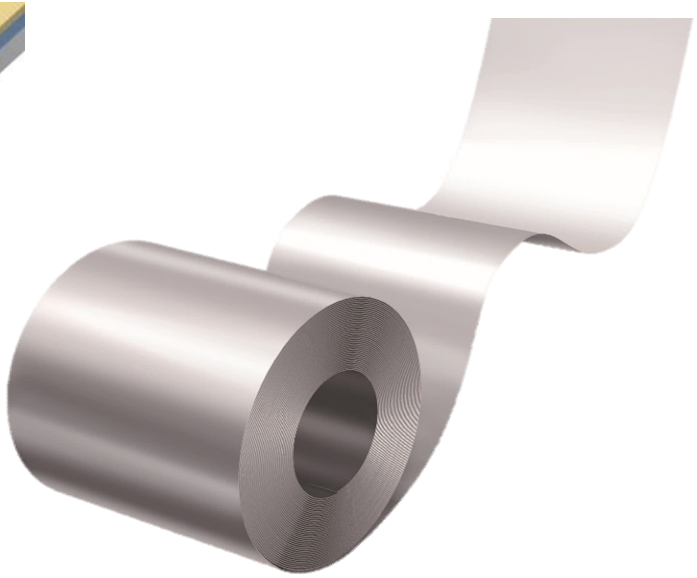
Japan EPD Program by SuMPO
Sustainable Management Promotion Organization
14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan
https://ecoleaf-label.jp/

NIPPON STEEL

Electrogalvanized Steel Sheets (for construction)



Coating Structure
(representative example)



Functional unit

1 t

System boundary

☐ final products ■intermediate products

Main specifications of the product

Production sites:

East Nippon Works, Setouchi Works

Main standards:

JIS(Japanese Industrial Standards),

NIPPON STEEL standards

For details, please refer to "8. Remarks" in EL sheet 2.

Shape: Coil and sheet

Main thickness (unit: mm, t:=thickness) :

t =0.4～3.2

Company Information

NIPPON STEEL CORPORATION

Flat Products Unit Flat Products Planning Dept.

https://www.nipponsteel.com/

Registration#	JR-AJ-22004E-A
PCR number	PA-180000-AJ-06
PCR name	Steel products for construction
Publication date	4/21/2022
Verification date	1/19/2024
Verification method	Product-by-product
Verification#	JV-AJ-24018
Expiration date	3/17/2027

PCR review was conducted by:

Approval date	5/10/2023
PCR review panel chair	Yasunari Matsuno (Chiba University)

Third party verifier*

Tomoko Fuchigami

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	1500	2700	kg-CO2eq
Acidification	-0.06	1.8	kg-SO2eq
Eutrophication	0.011	0.034	kg-PO43-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 to gate with allocation for scrap recycling)

Parameter \ stage	Unit	【A1~A3】	【A1】	【A2】	【A3】		【D】
Global warming IPCC2013 GWP100a	kg-CO_2eq	2.7E+03	4.3E+02	1.2E+02	2.2E+03		-1.2E+03
Ozone layer destruction	kg-CFC-11eq	-2.7E-07	1.1E-07	8.1E-10	-3.9E-07		-2.2E-07
Acidification	kg-SO_2eq	1.8E+00	5.0E-01	6.6E-02	1.2E+00		-1.9E+00
Photochemical ozone	kg-C_2H_4eq	1.9E-02	4.8E-03	1.1E-03	1.3E-02		-2.6E-01
Eutrophication	kg-PO_4^{3-}eq	3.4E-02	5.3E-03	7.3E-13	2.8E-02		-2.2E-02

2. Life cycle inventory analysis (LCI)

項目		単位
Non-renewable material resources	7.2E+02	kg
Non-renewable energy resources	3.0E+04	MJ
Renewable material resources	1.1E+03	kg
Renewable primary energy	-7.6E+01	MJ
Consumption of freshwater	4.7E+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]	≦2.00	%

4. Waste to disposal

Parameter		Unit
Hazardous waste	-	kg
Non-hazardous waste.	1.7E+00	kg

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

5. Additional explanation

① Each LCI includes allocation for scrap recycling as an optional supplementary information [End-of-Life].
The indirect effect is added to the total value in Tables [Raw material acquisition], [Production] and [Distribution].
Recyclingrate (RR) used in this calculation is 93.0%
(calculated based on ISO 20915/JIS Q 20915 standards and using FY 2018 data from Japan Steel Can Recycling Association and Tetsugen Association).
② Material transport scenariois based on PCR.
③ 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%, and the contents of other components are adjusted.
④ Primary data collected in 2018. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
⑤ For the transport of metallurgical coal, the amount is double counted in Tables [Raw material acquisition] and [Distribution] due to the characteristics of the consumption rate database on which this estimation is based.
⑥ Each value of the results shown in this sheet is the mean value for Electrogalvanized Steel Sheets.

6-1. Supplementary environmental information

East Nippon Works and Setouchi 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 IDEA v2.1.3 data and steel scrap data(JP-AJ-0001) from the Japan Iron and Steel Federation.

8. Remarks

<The details about Main standards>

Typical Type of JIS (JIS G 3313):

・Commercial quality (e.g.:SECC,SECCT,SEHC)

・Drawing quality (e.g.:SECD,SEHD)

・Deep Drawing quality (e.g.:SECE,SEHE)

・High-Strength quality for drawing (e.g.:SEFC340,SEPH400)

Typical Type of NIPPON STEEL standards :

・Commercial quality (e.g.:NSECC,NSEHC)

・Drawing quality (e.g.:NSEC270D,NSEH270D)

・Deep drawing (e.g.:NSEC270E,NSEH270E)

・Extra deep drawin (e.g.:NSEC270F)

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

- 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/)