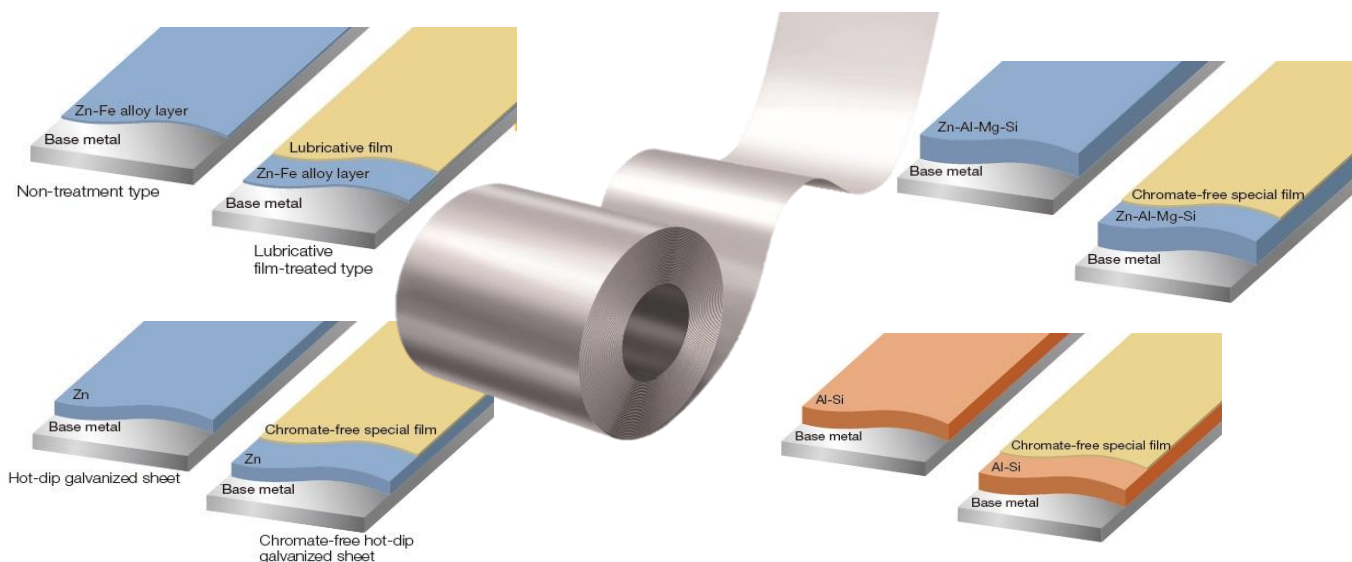




Hot-dip galvanized and aluminium alloy coated sheets



Functional unit

1 t

System boundary

final products intermediate products

Main specifications of the product

Production sites:

East Nippon Works, Nagoya Works

Setouchi Works, Kyushu 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 =0.27~9.0

Company Information

NIPPON STEEL CORPORATION

Flat Products Unit Flat Products Planning Dept.

<https://www.nipponsteel.com/>

Registration#	JR-AW-22004E-B
PCR number	PA-180000-AW-05
PCR name	Steel products (except for construction use)
Publication date	4/21/2022
Verification date	1/19/2024
Verification method	Product-by-product
Verification#	JV-AW-24013
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

internal external

*Auditor's name is stated if system certification has been performed.

1. Results of life cycle impact assessment (LCIA)

Domain of influence	Manufacturing + Indirect impact*1	Manufacturing only*2	Unit
Global warming IPCC2013 GWP100a	1500	2700	kg-CO ₂ eq
Acidification	-0.064	1.8	kg-SO ₂ eq
Eutrophication	0.020	0.043	kg-PO ₄ ³⁻ eq

Be sure to refer to "6-1. Supplementary environmental information" for Scope 3 and carbon footprint calculations.

*1:the total of (1) to (3), *2:the total of (1) to (2)

Parameter	stage	Unit	the total of (1)to (2)	(1)raw material procurement	(2)product manufacture	(3)indirect impacts
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	2.7E+03	6.2E+02	2.1E+03	-1.2E+03
Ozone layer destruction		kg-CFC-11eq	2.8E-07	1.3E-07	1.5E-07	-2.2E-07
Acidification		kg-SO ₂ eq	1.8E+00	6.2E-01	1.2E+00	-1.9E+00
Photochemical ozone		kg-C ₂ H ₄ eq	1.8E-02	5.9E-03	1.2E-02	-2.6E-01
Eutrophication		kg-PO ₄ ³⁻ eq	4.3E-02	4.9E-03	3.8E-02	-2.2E-02

2. Life cycle inventory analysis (LCI)

Item	Unit
Non-renewable material resources	7.5E+02 kg
Non-renewable energy resources	3.1E+04 MJ
Renewable material resources	1.1E+03 kg
Renewable primary energy	3.4E+02 MJ
Consumption of freshwater	3.7E+00 m ³

3. Material composition

Material	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]	≤15.00 %
aluminum [Al]	≤4.00 %

4. Waste to disposal

Parameter	Unit
Hazardous waste	- kg
Non-hazardous waste.	2.3E+00 kg
Treated MSW for landfill	0.0E+00 kg
Treated industrial waste for landfill	2.3E+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 scenarios based on PCR.

③ Each item (except 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 84%, 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 Hot-dip Galvanized and Aluminized Steel Sheets.

6-1. Supplementary environmental information

East Nippon Works, Nagoya Works, Setouchi Works, Kyushu Works have ISO 14001 certificates.

Note on Global warming IPCC2013 GWP100a: When purchasers of this product calculate GHG emissions under GHG Protocol Scope 3, Category 1 for their organization, or when calculating the carbon footprint of products manufactured using this product, they must check the following URL:

<https://www.nipponsteel.com/en/product/cfp/certificate.html>

(The content of the above URL is not subject to EPD verification.)

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

Typical Type of JIS :

- JIS G 3302 Hot-dip galvanized steel sheet and strip/Hot-dip galvanized steel sheet and strip : Commercial (e.g.:SGCC,SGHC) , Drawing(e.g.:SGCD1),Structural(e.g.:SGC340,SGH340) , Commercial,Hard (e.g.:SGCH), Deep drawing(e.g.:SPCE)
- JIS G 3323 Hot-dip zinc-aluminum-magnesium-silicon alloy-coated steel sheet and strip : For general use (e.g.:SGMCC,SGMHC), For hard class general use (e.g.:SGMCH) , For drawing use (e.g.:SGMCD1) ,For high-strength general use (e.g.:SGMC340,SGMH340)
- JIS G 3314 Hot-dip aluminum-coated steel sheet and strip : Heat resistance (e.g.:SA1C)

Typical Type of NIPPON STEEL standards :

- Hot-dip galvanized steel sheet and strip/Hot-dip galvanized steel sheet and strip : Commercial (e.g.:NSGCC,NSACC,NSGHC,NSAHC), Commercial automotive use (e.g.:NSAH270C), Drawing (e.g.:NSGC270D, NSAC270E,NSGH270D, NSAH270D),Structural (e.g.:NSGC340,NSGH340) Drawing,high-strength (e.g.:NSGC340R , NSAC340R) ,Deep drawing,high-strength (e.g.:NSGC340E, NSAC340E), Commercial,Hard (e.g.:NSAC340, NSAH340),Automotive,high strength (e.g.:NSAC590N) High burring,high strength (e.g.:NSAC440B,NSAH440B) ,Low yield ratio,high strength (e.g.:NSAC590D) , High formability high strength (e.g.:NSAC590T) ,Hot Stamping (e.g.:NSSQA1500) , For use in steel pipes (e.g.:NSGHT270,NSAHT270) ,Commercial automotive,high strength (e.g.:NSAH310N) ,Automotive,drawing,high strength (e.g.:NSAH490R)
- Hot-dip zinc-aluminum-magnesium-silicon alloy-coated steel sheet and strip : For general uses (e.g.:NSDCC,NSDHC,MSMCC,MSMHC) ,For drawing use (e.g.:NSDCD 1 , NSDHP1, MSMCD,MSMHD) ,For structural use (e.g.:NSDC340, NSDH340, MSMCK370, MSMHK370) , For architecture structural use (e.g.:MSMCK400K,MSMHK400K)
- Hot-dip aluminum-coated steel sheet and strip : Heat resistance (e.g.:NSA1C) , Colorfastness at high temperature (e.g.:NSA1D-P),High strength(TS=440 class) (e.g.:NSA440R), Hot stamp (e.g.:NSSQAS1500)

- January 2024; Modification about allocation method of by-product gases
- April 2026; Additional explanatory notes added to "6-1. Supplementary environmental information".

- 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/>)