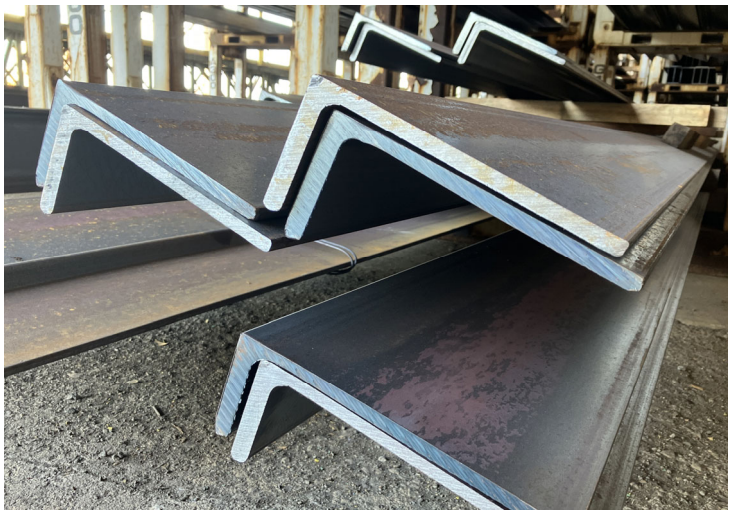
SuMPO EPD
Type III Environmental Declaration (EPD)
Registration number： JR-AW-24051E

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

JFE Steel Corporation

NAB (Unequal leg and thickness angles)



Functional unit

1 metric ton

System boundary

☐ final products ■intermediate products

Production stage (Raw material acquisition, Manufacturing) and Recycling potential

Main specifications of the product

Production Site: West Japan Works (Fukuyama)

Representative Standards:

Ship classification society standards

JIS G 3101, G 3106, G 3114, G 3136

Shape: Unequal leg and thickness angles

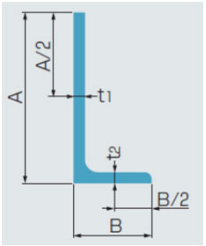
Representative Size:

A; 200～450mm

B; 90～125mm

t1; 8～13mm

t2; 14～18mm



Registration#	JR-AW-24051E
PCR number	PA-180000-AW-05
PCR name	Steel products (except for construction use)
Publication date	21 March 2025
Verification date	13 February 2025
Verification method	Product-by-product
Verification#	JV-AW-24051
Expiration date	12 February 2030

PCR review was conducted by:

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

Third party verifier*

Yuki Sakamoto

Independent verification of data & declaration in accordance with ISO14025

☐internal ■external

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

Company Information

JFE Steel Corporation Planning＆Marketing Dept., Construction Materials & Services Business Division

https://www.jfe-steel.co.jp/en/index.html

1. Results of life cycle impact assessment (LCIA)

Parameter \ Stage	Production stage and Recycling potential [A1],[A2],[A3] and [D]	Production stage (cradle to gate) [A1],[A2] and [A3]	Unit
Global warming IPCC2013 GWP100a	1.5E+03	2.6E+03	kg-CO_2eq
Acidification	-1.0E+00	6.2E-01	kg-SO_2eq
Photochemical ozone	2.9E-02	4.8E-02	kg-PO_4^{3-}eq

Parameter \ Stage	Unit	Total	[A1][A2] Raw material acquisition	[A3] Manufacturing	[D] Recycling potential
Global warming IPCC2013 GWP100a	kg-CO_2eq	2.6E+03	6.6E+02	1.9E+03	-1.1E+03
Ozone layer destruction	kg-CFC-11eq	1.3E-06	1.4E-07	1.1E-06	-1.9E-07
Acidification	kg-SO_2eq	6.2E-01	3.4E-01	2.8E-01	-1.6E+00
Photochemical ozone	kg-C_2H_4eq	7.5E-03	6.4E-03	1.1E-03	-2.3E-01
Eutrophication	kg-PO_4^{3-}eq	4.8E-02	9.0E-06	4.8E-02	-1.9E-02

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	1.3E+03	kg
Non-renewable energy resources	3.2E+04	MJ
Renewable material resources	1.0E+03	kg
Renewable primary energy	9.5E+01	MJ
Consumption of freshwater	2.1E+00	m^3

3. Material composition

Material		Unit
iron [Fe]	≧96.3	wt%
carbon [C]	≦0.23	wt%
silicon [Si]	≦0.50	wt%
manganese [Mn]	≦1.60	wt%
phosphorus [P]	≦0.04	wt%
sulfur [S]	≦0.04	wt%
aluminum [Al]	≦0.06	wt%
vanadium [V]	≦0.10	wt%
niobium [Nb]	≦0.05	wt%
titanium [Ti]	≦0.02	wt%
copper [Cu]	≦0.35	wt%
chromium [Cr]	≦0.20	wt%
nickel [Ni]	≦0.40	wt%
molybdenum [Mo]	≦0.08	wt%

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.0E+00	kg
Non-hazardous waste.	1.6E+00	kg

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

5. Additional explanation

- This EPD shows the results calculated without applying system extensions.
- Scrap recycling potential is calculated based on ISO 20915/JIS Q 20915 and shown as [D] in table 1. Recycling ratio used in this calculation is 93.0%. (Using data is 2018FY from The Japan Iron and Steel Federation, The Japan ferrous raw materials association and The Japan Steel Can recycling Association).
- The environmental impact of self-generated electricity was calculated as primary data of fuel and the basic unit data of grid power consumption is the average of 10 electric power suppliers of Japan in 2014FY.
- Each item (except iron) in table 3 is the maximum value of all product standards covered by this EPD.
- Primary data in 2021 is used.

6-1. Supplementary environmental information

The production site is certified to ISO 14001.

6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
manganese[Mn]	7349-96-5	・Industrial Safety and Health Act
nickel [Ni]	7440-02-0	・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
copper [Cu]	7440-50-8	・Industrial Safety and Health Act
cobalt [Co]	7440-48-4	・Industrial Safety and Health Act

7. Assumptions of secondary data used

IDEA v2.1.3 database is used. Steel scrap data (JP-AJ-0001) from the Japan Iron and Steel Federation are used.

8. Remarks

Representative manufactured produts complying to ships classification societies:
NK; Mild steels (A,B,D,E), High tension steels (32A,32D,32E,36A,36D,36E,40A,40D,40E), Steels for low temperature use
ABS; Mild steels (A,B,D,E), High tension steels (32A,32D,32E,36A,36D,36E,40A,40D,40E), Steels for low temperature use
LR; Mild steels (A,B,D,E), High tension steels (32A,32D,32E,36A,36D,36E,40A,40D,40E), Steels for low temperature use
DNV; Mild Steels（A,B,D,E), High tension steels (27A,32A,32D,32E,36A,36D,36E,40A,40D,40E), Steels for low temperature use
BV; Mild steels (A,B,D,E), High tension steels (32A,32D,32E,36A,36D,36E,40A,40D,40E), Steels for low temperature use
KR; Mild steels (A,B,D,E), High tension steels (32A,32D,32E,36A,36D,36E,40A,40D,40E), Steels for low temperature use
CR; Mild steels (A,B,D,E), High tension steels(32A,32D,32E,36A,36D,36E,40A,40D,40E)
CCS; Mild steels(A,B,D), High tension steels(32A,32D,36A,36D）
RINA; Mild steels (A,B), High tension steels (32A,36A)
RMR; Mild steels (A,B,D,E), High tension steels (32A,32D,32E,36A,36D,36E,40A,40D,40E)

- 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/）