SuMPO EPD
Type III Environmental Declaration (EPD)
Registration number： JR-AJ-23017E

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

Bar and Bar in Coil for Construction (Products in Sendai)

Functional unit

1 metric ton

System boundary

☐ final products ■intermediate products

Production stage (Raw material supply, Transport to factory, Manufacturing) and Recycling potential

Main specifications of the product

Production Site:
Sendai works

Representative Standards:
SS, SWRM, SWRCH

Shape:
Bar, Bar in Coil

Size range (mm):
Bar: φ17 - φ120
Bar in Coil: φ16.7 - φ52

Registration#	JR-AJ-23017E
PCR number	PA-180000-AJ-06
PCR name	Steel products for construction
Publication date	15 January 2024
Verification date	21 November 2023
Verification method	Product-by-product
Verification#	JV-AJ-23017
Expiration date	20 November 2028

PCR review was conducted by:

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

Third party verifier*

Takahiro Atoh

Independent verification of data & declaration in accordance with ISO14025 and ISO21930

☐internal ■external

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

Company Information

JFE Steel Corporation Planning & Marketing Dept., Steel Bar & Wire Rod Division
https://www.jfe-steel.co.jp/en/index.html

1. Results of life cycle impact assessment (LCIA)

Parameter \ Stage	Production stage (cradle to gate) [A1],[A2] and [A3]	Unit
Global warming IPCC2013 GWP100a	9.9E+02	kg-CO_2eq
Acidification	5.8E-01	kg-SO_2eq
Photochemical ozone	3.3E-03	kg-PO_4^{3-}eq

Parameter \ Stage	Unit	Total	[A1] Raw material supply	[A2] Transport to factory	[A3] Manufacturing	[D] Recycling potential
Global warming IPCC2013 GWP100a	kg-CO_2eq	9.9E+02	2.0E+02	3.6E+01	7.5E+02	3.4E+02
Ozone layer destruction	kg-CFC-11eq	2.2E-07	1.6E-07	2.9E-10	5.7E-08	6.1E-08
Acidification	kg-SO_2eq	5.8E-01	1.4E-01	1.2E-01	3.2E-01	5.2E-01
Photochemical ozone	kg-C_2H_4eq	1.6E-02	1.3E-03	3.5E-04	1.4E-02	7.3E-02
Eutrophication	kg-PO_4^{3-}eq	3.3E-03	4.9E-06	2.5E-13	3.3E-03	6.2E-03

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	2.1E+01	kg
Non-renewable energy resources	1.6E+04	MJ
Renewable material resources	1.3E+01	kg
Renewable primary energy	2.8E+02	MJ
Consumption of freshwater	1.7E+00	m^3

3. Material composition

Material		Unit
iron [Fe]	≧84.2	wt%
carbon [C]	≦1.10	wt%
silicon [Si]	≦3.00	wt%
manganese [Mn]	≦3.00	wt%
phosphorus [P]	≦0.15	wt%
sulfur [S]	≦0.45	wt%
copper [Cu]	≦0.60	wt%
nickel [Ni]	≦4.00	wt%
chromium [Cr]	≦2.50	wt%
molybdenum [Mo]	≦1.00	wt%

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.0E+00	kg
Non-hazardous waste.	8.4E-01	kg

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

5. Additional explanation

- 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 basic unit data of 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
lead [Pb]	7439-92-1	・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

・ March, 2025; Change from the EcoLeaf mark to the SuMPO EPD mark.

- 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/)