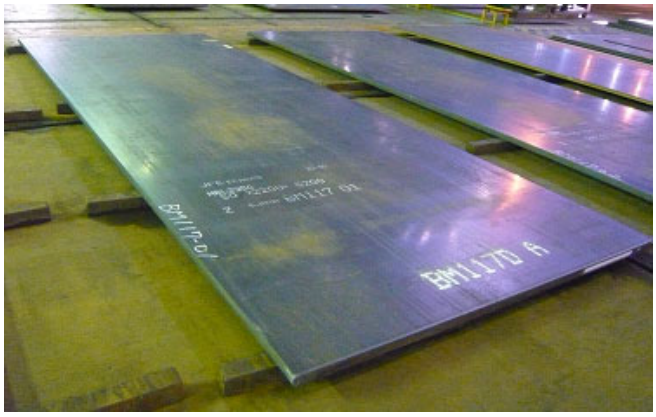
SuMPO EPD
Type III Environmental Declaration (EPD)
Registration number： JR-AJ-23013E-B

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

Steel Plates for Building Structures



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:

West Japan Works (Fukuyama, Kurashiki)
East Japan Works (Keihin),

Representative Standards:

Listed on Page 3 (8. Remarks)

Shape: Steel Plate

Registration#	JR-AJ-23013E-B
PCR number	PA-180000-AJ-06
PCR name	Steel products for construction
Publication date	1 August 2022
Verification date	14 February 2025
Verification method	Product-by-product
Verification#	JV-AJ-24051
Expiration date	19 July 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., 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	1.8E+03	2.9E+03	kg-CO_2eq
Acidification	-8.7E-01	7.8E-01	kg-SO_2eq
Photochemical ozone	3.0E-02	5.0E-02	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	2.9E+03	6.8E+02	2.3E+01	2.2E+03	-1.1E+03
Ozone layer destruction	kg-CFC-11eq	1.5E-06	1.6E-07	1.5E-10	1.3E-06	-1.9E-07
Acidification	kg-SO_2eq	7.8E-01	3.3E-01	1.5E-01	3.0E-01	-1.6E+00
Photochemical ozone	kg-C_2H_4eq	1.0E-02	5.6E-03	3.0E-03	1.7E-03	-2.3E-01
Eutrophication	kg-PO_4^{3-}eq	5.0E-02	6.8E-06	1.3E-13	5.0E-02	-2.0E-02

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	1.4E+03	kg
Non-renewable energy resources	3.4E+04	MJ
Renewable material resources	1.0E+03	kg
Renewable primary energy	1.0E+02	MJ
Consumption of freshwater	1.8E+00	m^3

3. Material composition

Material		Unit
iron [Fe]	≧95.8	wt%
carbon [C]	≦0.25	wt%
silicon [Si]	≦0.65	wt%
manganese [Mn]	≦2.50	wt%
phosphorus [P]	≦0.050	wt%
sulfur [S]	≦0.050	wt%

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.0E+00	kg
Non-hazardous waste.	1.1E+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 2018 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
copper [Cu]	7440-50-8	・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
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 standards:
【Minister-approved products】
HBL®325B, HBL®325C, HBL®355B, HBL®355C,
HBL®385B-L, HBL®385B, HBL®385C, HBL®440B, HBL®440C,
SA440B, SA440C, JFE-LY100, JFE-LY225, H-SA700A, H-SA700B,
HBL®630B-L, HBL®630C-L, HBL®630B, HBL®630C and othres
【JIS】
SS400, SM400A, SM400B, SM400C, SN400A, SN400B, SN400C,
SM490A, SM490B, SM490C, SM490YA, SM490YB, SN490B, SN490C, SM520B, SM520C, SM570 and others
【EN】
EN10025 S235, S275, S355, S420, S450, S460, S500, S550, S620, S690, S890, S960 and others
【ASTM】
A36, A572, A913, A1043, A1066, A1077 and others

・ July, 2023; Correction of double counting on upstream and modification of allocation method of by-product gases
・ February, 2025; Modification about system boundary and allocation 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/)