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

High Frequency Welded / Butt Welded Pipe

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:

East Japan Works (Keihin), Chita Works

Representative Standards:

Listed on Page 3 (8. Remarks)

Shape: High Frequency Welded Pipe

Butt Welded Pipe

Size range:

OD; 21.7mm(0.85inch) - 700mm(27.6inch)

WT; 2.8mm(0.11inch) - 28.0mm(1.10inch)

Length; 5.0m(16.4ft) - 20m(65.6ft)

Registration#	JR-AW-23016E-A
PCR number	PA-180000-AW-05
PCR name	Steel products (except for construction use)
Publication date	26 December 2023
Verification date	12 February 2025
Verification method	Product-by-product
Verification#	JV-AW-24043
Expiration date	15 October 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

☐internal ■external

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

Company Information

JFE Steel Corporation Tubular Business Planning & Marketing Dept.

https://www.jfe-steel.co.jp

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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	1.9E+03	3.0E+03	kg-CO_2eq
Acidification	-9.1E-01	7.6E-01	kg-SO_2eq
Photochemical ozone	3.5E-02	5.5E-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	3.0E+03	6.4E+02	2.4E+03	-1.1E+03
Ozone layer destruction	kg-CFC-11eq	1.3E-06	1.9E-07	1.1E-06	-2.0E-07
Acidification	kg-SO_2eq	7.6E-01	5.2E-01	2.4E-01	-1.7E+00
Photochemical ozone	kg-C_2H_4eq	1.4E-02	9.5E-03	4.1E-03	-2.3E-01
Eutrophication	kg-PO_4^{3-}eq	5.5E-02	4.8E-06	5.5E-02	-2.0E-02

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	1.4E+03	kg
Non-renewable energy resources	3.6E+04	MJ
Renewable material resources	1.0E+03	kg
Renewable primary energy	1.4E+02	MJ
Consumption of freshwater	3.9E+00	m^3

3. Material composition

Material		Unit
iron [Fe]	≧96.5	wt%
carbon [C]	≦0.55	wt%
manganese [Mn]	≦2.0	wt%
silicon [Si]	≦0.55	wt%
phosphorus [P]	≦0.05	wt%
sulfur [S]	≦0.05	wt%

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.0E+00	kg
Non-hazardous waste.	8.1E-01	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
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
copper [Cu]	7440-50-8	・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:
JIS; G 3452(SGP), G 3454(STPG), G 3444(STK), G 3445(STKM), G 3475(STKN)
ASTM A53
API 5CT and 5L grades, ISO 11960 and 3183, JFE-Series(OCGT), DNV-ST-F101, JMERW, STPY-EQ
Including others requested by customers based on these standards

・ March, 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/)