



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AW-23004E

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 Shipbuilding



Functional unit

1 metric ton

System boundary

- final products intermediate products
 Production Stage (Raw material acquisition, manufacturing) and Indirect effect

Main specifications of the product

Production Site:
 West Japan Works (Fukuyama, Kurashiki)
 East Japan Works (Keihin)
 Representative Standards:
 Listed on Page 3 (5. Additional Information)
 Shape: Steel Plate

Company Information

JFE Steel Corporation

About us; <https://www.jfe-steel.co.jp/en/index.html>

Contact us;

<https://www.jfe-steel.co.jp/en/contact.html>

Registration#	JR-AW-23004E
PCR number	PA-180000-AW-03
PCR name	Steel products (except for construction use)
Publication date	9/15/2023
Verification date	6/30/2023
Verification method	Product-by-product
Verification#	JV-AW-23004
Expiration date	6/29/2028
PCR review was conducted by:	
Approval date	4/1/2022
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.

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1. Results of life cycle impact assessment (LCIA)

Parameter	stage	[A1,A3] +[D] ¹⁾	[A1,A3] ²⁾	Unit
Global warming IPCC2013 GWP100a		800	1900	kg-CO ₂ eq
Acidification		0.16	0.16	kg-SO ₂ eq
Eutrophication		0.046	0.046	kg-PO ₄ ³⁻ eq

1)[A1,A3]+[D]:sum of [A1],[A3] and [D]

2)[A1,A3]:sum of [A1] and [A3]

Parameter	stage	Unit	Total	[A1] Raw material acquisition	[A3] Manufacturin g	[D] Indirect effect
Global warming IPCC2013 GWP100a		kg-CO ₂ eq	1.9E+03	8.1E+02	1.1E+03	-1.1E+03
Ozone layer destruction		kg-CFC-11eq	-7.5E-08	1.2E-07	-2.0E-07	-1.9E-07
Acidification		kg-SO ₂ eq	1.6E-01	4.7E-01	-3.1E-01	-1.6E+00
Photochemical ozone		kg-C ₂ H ₄ eq	1.2E-02	8.2E-03	3.8E-03	-2.3E-01
Eutrophication		kg-PO ₄ ³⁻ eq	4.6E-02	9.9E-06	4.6E-02	-2.0E-02

2. Life cycle inventory analysis (LCI)

Parameter	Unit
Non-renewable material resources	8.5E+02 kg
Non-renewable energy resources	9.9E+02 MJ
Renewable material resources	1.0E+03 kg
Renewable primary energy	1.8E+02 MJ
Consumption of freshwater	1.6E+00 m ³

3. Material composition

Material	Unit
iron[Fe]	90.2 wt%
carbon[C]	0.6 wt%
silicon[Si]	1.0 wt%
manganese[Mn]	2.0 wt%
nickel[Ni]	4.0 wt%
chromium[Cr]	1.0 wt%
molybdenum[Mo]	0.6 wt%
copper[Cu]	0.5 wt%
phosphorous[P]	0.05 wt%
sulfur[S]	0.05 wt%

4. Waste to disposal

Parameter	Unit
Hazardous waste	- kg
Non-hazardous waste.	1.5E+00 kg
Treated MSW for landfill	0.0E+00 kg
Treated industrial waste for landfill	1.5E+00 kg

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



5. Additional explanation

- The indirect effect (scrap recycling potential) is calculated based on ISO 20915/JIS Q 20915 and shown as [D]indirect effect in table "1. Results of life cycle impact assessment (LCIA)" .
The indirect effect is added to the total value (sum of [A1], [A3]) in tables.
- Recycling ratio used in this calculation is 93.0% (calculated based on ISO 20915/JIS Q 20915 and using FY 2018 data from The Japan Iron and Steel Federatin, The Japan Steel Can recycling Association and The Japan ferrous raw materials association).
- The source of unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
- Primary data collected in 2018.

Products Shape: Steel Plates

Representive Applicattions: Structures (e.g ships)

Representive Standards:

Shipbuilding grades: ClassNK KA, KB, KD, KE, KF, KL

and ABS, BV, CCS, CR, DNV, KR, LR, RS, RINA, ZC etc.

JIS; G3101, G3106, G3131, G3136, G3140, G3128, G3127, G3126, G3114, G3140

G3103, G3115, G3118, G3124, G3119, G3120, G4109

ASTM; A36, A131, A283, A529, A573, A633, A709, A841, A678, A514

A285, A515, A516, A299, A455, A537, A841, A612, A738, A543, A517, A203, A302, A533, A542,

A387

API; 2H,2W EN ; 10025, 10113, 10225, 10137, 10028, 10113

JFES standard; JFE ASA400, ASA440

Including others requested by customers based on these standards

6-1. Supplementary environmental information

The Products are manufactured in ISO14000 certified factories.

West Japan Works (Fukuyama , Certified data 1998/3/2 ,Certification Number E026)

West Japan Works (Kurashiki , Certified data 1997/10/2 ,Certification Number E012)

East Japan Works (Keihin ,Certified data 1997/5/27 , Certification Number E010)

6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
copper [Cu]	7440-50-8	• Industrial Safety and Health Act.
manganese [Mn]	7439-96-5	• Industrial Safety and Health Act.
nickel [Ni]	7440-02-0	• Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof
chromium [Cr]	7440-47-3	
molybdenum [Mo]	7439-98-7	
cobalt [Co]	7440-48-4	

7. Assumptions of secondary data used

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

8. Remarks

- 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/>)