EcoLeaf
Type III Environmental Declaration (EPD)
Registration number： JR-AW-23003E

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 Offshore Structures and Wind Turbine Support Structures

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)

Representive Standards:

Listed on Page 3 (5. Additional Information)

Shape: Steel Plate (e.g. J-TerraPlate™)

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-23003E
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-23003
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	830	1900	kg-CO_2eq
Acidification	0.29	0.29	kg-SO_2eq
Eutrophication	0.045	0.045	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] Manufacturing			[D] Indirect effect
Global warming IPCC2013 GWP100a	kg-CO_2eq	1.9E+03	8.5E+02	1.0E+03			-1.1E+03
Ozone layer destruction	kg-CFC-11eq	-1.3E-07	1.1E-07	-2.4E-07			-1.9E-07
Acidification	kg-SO_2eq	2.9E-01	4.5E-01	-1.6E-01			-1.6E+00
Photochemical ozone	kg-C_2H_4eq	1.2E-02	7.8E-03	4.5E-03			-2.3E-01
Eutrophication	kg-PO_4^{3-}eq	4.5E-02	1.1E-05	4.5E-02			-1.9E-02

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	8.5E+02	kg
Non-renewable energy resources	1.0E+03	MJ
Renewable material resources	1.0E+03	kg
Renewable primary energy	1.9E+02	MJ
Consumption of freshwater	2.0E+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]	0.60	wt%
copper[Cu]	0.50	wt%
phosphorous[P]	0.05	wt%
sulfur[S]	0.05	wt%

4. Waste to disposal

Parameter		Unit
Hazardous waste	-	kg
Non-hazardous waste.	1.6E+00	kg
Treated MSW for landfill	0.0E+00	kg
Treated industrial waste for landfill	1.6E+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]Iindirect 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 (e.g. J-TerraPlateTM)
Representive Applicattions: Offshore Structures and Wind Turbine Support Structures
Representive Standards:
JIS; G3101,G3106,G3114,G3125,G3128,G3129,G3131,G3136,G3140
ASTM; A36,A131,A283,A529,A573,A633,A709,A678,A514
API; 2H,2W
EN; 10025,10113,10225,10137
NORSK; M-120
Ship building grades; ClassNK; KA,KB,KD,KE,KF,KL
and ABS, BV, CCS, CR, DNV, KR, LR, RS, RINA, ZC etc.
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. ・Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof
nickel [Ni]	7440-02-0	
chromiume [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/)