岸和田製鋼株式会社
KISHIWADA STEEL CO.,LTD.

Deformed steel bar

KISI-CON

JIS

KH685・785

ASTM

KS

Functional unit

1 t

System boundary

☐ final products ☑intermediate products

Manufacturing stage (raw material procurement, raw material transportation, product manufacturing) and indirect effects

Main specifications of the product

Main standards: JIS G 3112 (SD295, SD345, SD390,SD490)

・ Other standards

Minister-approved product Reinforcing bar steel for high-strength shear reinforcement KH685, KH785

ASTM AX615 (GR40, GR60), AX706 (GR60)

KS D 3504 (SD300, 400)

Dimensions: D10 ~ D41

Contact details

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https://kishi-seiko.jp/

Registration#	JR-AJ-22012E
PCR number	PA-180000-AJ-03
PCR name	Steel products for construction
Publication date	5/24/2022
Verification date	4/1/2022
Verification method	Product-by-product
Verification#	JV-AJ-22012
Expiration date	3/31/2027

PCR review was conducted by:

Approval date	10/1/2019
PCR review panel chairperson	Yasunari Matsuno (Affiliation Chiba Univ.)

Third party verifier*

Kengo Minamiyama、Ken Yamagishi

Independent verification of data & declaration in accordance with ISO14025

☐internal ■external

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

EcoLeaf

Type III Environmental Declaration (EPD)

Registration number： JR-AJ-22012E

Japan EPD Program by SuMPO

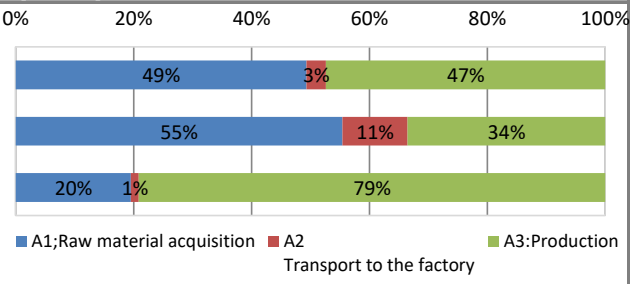
Sustainable Management Promotion Organization

2-1, Kaji-cho 2 chome, Chiyoda-ku, Tokyo Japan

https://ecoleaf-label.jp/

1. Results of life cycle impact assessment (LCIA)

Global warming IPCC2013 GWP100a	760	kg-CO2eq
Acidification	0.70	kg-SO2eq
Photochemical ozone	0.011	kg-C2H4eq



Parameter \ stage	Unit	Total	A1;Raw material acquisition	A2 Transport to the factory	A3:Production		D:Indirect effects
Global warming IPCC2013 GWP100a	kg-CO_2eq	7.6E+02	3.7E+02	2.5E+01	3.6E+02		2.2E+02
Ozone layer destruction	kg-CFC-11eq	1.5E-06	1.4E-06	2.1E-10	1.1E-08		4.0E-08
Acidification	kg-SO_2eq	7.0E-01	3.9E-01	7.8E-02	2.3E-01		3.4E-01
Photochemical ozone	kg-C_2H_4eq	1.1E-02	2.1E-03	1.4E-04	8.5E-03		4.7E-02
Eutrophication	kg-PO_4^{3-}eq	5.4E-06	5.2E-06	1.8E-13	1.7E-07		4.0E-03

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	-4.0E+01	kg
Non-renewable energy resources	2.7E+02	MJ
Renewable material resources	1.1E+04	kg
Renewable primary energy	2.2E+02	MJ
Consumption of freshwater	8.4E-02	m^3

3. Material composition

Parameter		Unit
Iron [Fe]	≧96.58	%
carbon [C]	≦0.50	%
silicon [Si]	≦1.00	%
manganese [Mn]	≦1.80	%
phosphorus [P]	≦0.06	%
sulfur [S]	≦0.06	%

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.00E+00	kg
Non-hazardous waste.	9.2E-01	kg

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

5. Additional explanation

① As an indirect effect, the recycling effect of steel materials based on JIS20915 was evaluated and the values are shown in column D above. The indirect effect is added to the total value in column A1 ～ A3 above. The recycling rate of iron used in the calculation was 93.1% (exhibitor: Japan Iron and Steel Federation, Steel Can Recycling Association used)

② The transport scenario was based on PCR.

③ CO_2 emission factor is based on "average value of 10 general power companies".

④ Acquisition of primary data is in 2020.

⑤ Elements shown in ”3. Material composition” are iron and primary elements containing steel material.

6-1. Supplementary environmental information

ISO14001 certified factory

6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
manganese	7439-96-5	Industrial Safety and Health Act
chromium	7440-47-3	Industrial Safety and Health Act
copper	7440-50-8	Industrial Safety and Health Act
nickel	7440-02-0	Industrial Safety and Health Act

7. Assumptions of secondary data used

I used IDEA v2.1.3. The recycling rate of iron used in the calculation was 93.1% (exhibitor: Japan Iron and Steel Federation, Steel Can Recycling Association 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/)