



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AJ-21003E

Ecoleaf Environmental Labeling Program

Sustainable Management Promotion Organization

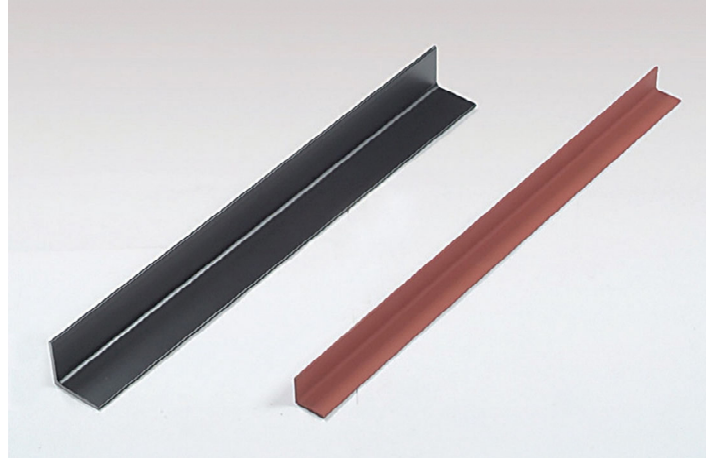
2-1, Kaji-cho 2 chome, Chiyoda-ku, Tokyo Japan

<https://ecoleaf-label.jp/>

KYOEI STEEL

(KYOEI STEEL LTD.)

Equal-angle bar of steel



Functional unit

1t

System boundary

final products intermediate products

Production Stage and optional supplementary information

Main specifications of the product

Production sites: Yamaguchi Works

Main standards: JIS G 3101(SS400)

JIS G 3136(SN400A, SN400B, SN490B)

Type: Equal-angle

Size: 3×20×20~9×75×75mm

Company Information

KYOEI STEEL LTD.

<http://www.kyoeisteel.co.jp>

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|------------------------------|--|
| Registration# | JR-AJ-21003E |
| PCR number | PA-180000-AJ-03 |
| PCR name | Steel products for construction |
| Publication date | 4/20/2021 |
| Verification date | 4/8/2021 |
| Verification method | Product-by-product |
| Verification# | JV-AJ-21003 |
| Expiration date | 4/7/2026 |
| PCR review was conducted by: | |
| Approval date | 10/1/2019 |
| PCR review panel chair | Yasunari Matsuno (Chiba University) |

Third party verifier*

Hiroyuki Uchida

Independent verification of data & declaration in accordance with ISO14025 and ISO21930.

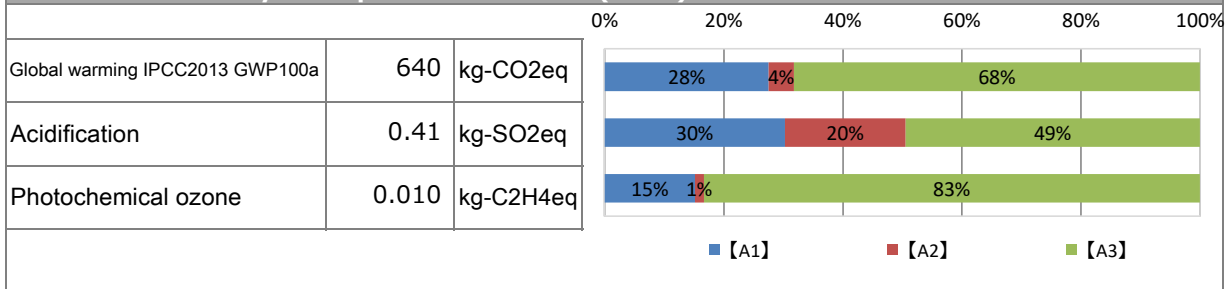
internal external

*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 | Unit | [A1-A3] | [A1] | [A2] | [A3] | [D] |
|---------------------------------|-------|-------------------------------------|---------|---------|---------|---------|---------|
| Global warming IPCC2013 GWP100a | | kg-CO ₂ eq | 6.4E+02 | 1.8E+02 | 2.7E+01 | 4.3E+02 | 1.6E+02 |
| Ozone layer destruction | | kg-CFC-11eq | 1.9E-07 | 1.8E-07 | 2.2E-10 | 1.2E-08 | 2.9E-08 |
| Acidification | | kg-SO ₂ eq | 4.1E-01 | 1.3E-01 | 8.4E-02 | 2.0E-01 | 2.4E-01 |
| Photochemical ozone | | kg-C ₂ H ₄ eq | 1.0E-02 | 1.6E-03 | 1.5E-04 | 8.7E-03 | 3.4E-02 |
| Eutrophication | | kg-PO ₄ ³⁻ eq | 1.9E-04 | 5.0E-06 | 1.9E-13 | 1.8E-04 | 2.9E-03 |

2. Life cycle inventory analysis (LCI)

| Parameter | Value | Unit |
|----------------------------------|----------|----------------|
| Non-renewable material resources | -6.8E+01 | kg |
| Non-renewable energy resources | 9.2E+03 | MJ |
| Renewable material resources | 2.8E+02 | kg |
| Renewable primary energy | 2.1E+02 | MJ |
| Consumption of freshwater | 7.2E-02 | m ³ |

3. Material composition

| Material | Value | Unit |
|----------------|--------|------|
| Iron [Fe] | ≥96.72 | % |
| Carbon [C] | ≤0.58 | % |
| Silicon [Si] | ≤0.6 | % |
| Manganese [Mn] | ≤2 | % |
| Phosphorus [P] | ≤0.05 | % |
| sulfur [S] | ≤0.05 | % |

4. Waste to disposal

| Parameter | Value | Unit |
|----------------------|----------|------|
| Hazardous waste | 0.00E+00 | kg |
| Non-hazardous waste. | 3.3E+01 | kg |

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

5. Additional explanation

- ① Each LCI figure includes allocation for scrap recycling as an optional supplementary information [D]. Recycling rate (RR) of this EPD is 93.1% (the average of Japan in 2014).
- ② Transport to site scenario is based on PCR.
- ③ The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
- ④ The first data was acquired from 2019.
- ⑤ Each material figure (except iron) is the maximum value of these product standards.
- ⑥ Electric furnace slag is sold to the outside as products.



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6-1. Supplementary environmental information

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6-2. Regulated hazardous substances

| Substance | CAS No. | Reference to standards or regulations |
|----------------|-----------|---------------------------------------|
| Manganese [Mn] | 7439-96-5 | Industrial Safety and Health Act |
| Copper [Cu] | 7440-50-8 | Industrial Safety and Health Act |
| Chrome [Cr] | 7440-47-3 | Industrial Safety and Health Act |
| Nickel [Ni] | 7440-02-0 | Industrial Safety and Health Act |

7. Assumptions of secondary data used

We use the IDEA2.1.3 data and scrap iron data from the Japan Iron and Steel Federation(J.I.S.F).

8. Remarks

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- 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/>)

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