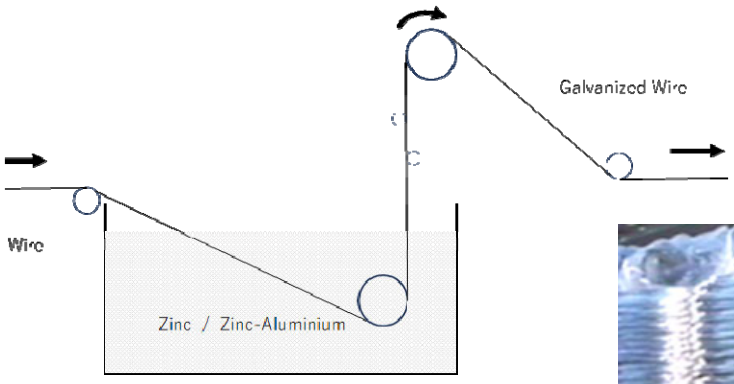
EcoLeaf
Type III Environmental Declaration (EPD)
Registration number： JR-AX-23004E-A

Japan EPD Program by SuMPO
Sustainable Management Promotion Organization
14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan
https://ecoleaf-label.jp/

TOKYO ROPE MFG. CO., LTD.
東京製綱株式會社

Hot-dip Galvanized Wire



Hot-dip Galvanizing


Hot-dip Galvanized Wire

Functional unit

1t

System boundary

☐ final products ■intermediate products

Production Stage and optional supplementary information

Main specifications of the product

Production site： Tsuchiura Plant

Main standards： JIS G3571, JSS Ⅱ
ISO 19203

Galvanized wire diameter ：
5mm （min. 4.5mm）～7mm（max. 7.5mm）

Type : Coil

Company Information

TOKYO ROPE MFG. CO., LTD.

tokyorope.co.jp

Registration#	JR-AX-23004E-A
PCR number	PA-180000-AX-05
PCR name	Steel products with secondary processing for construction
Publication date	9/19/2023
Verification date	4/15/2024
Verification method	Product-by-product
Verification#	JV-AX-24002
Expiration date	4/14/2029

PCR review was conducted by:

Approval date	5/10/2023
PCR review panel chair	Yasunari Matsuno Chiba University

Third party verifier*

Yuki Sakamoto

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	【A1~A3】+【D】	【A1~A3】	Unit
Global warming IPCC2013 GWP100a	1600	2900	kg-CO_2eq
Acidification	-0.052	1.90	kg-SO_2eq
Eutrophication	-0.0056	0.018	kg-PO_4^{3}-eq

Table Legend
【A1】: Raw mterial supply
【A2】: Transport to factory
【A3】: Manufacturing
【D】: Recycling potential
【A1～A3】:sum of【A1】,【A2】and【A3】(cradle to gate)
【A1～A3】+【D】: sum of【A1】,【A2】,【A3】and【D】(cradle to gate with allocation for scrap recycling)

Parameter \ stage	Unit	【A1~A3】	【A1】	【A2】	【A3】		【D】
Global warming IPCC2013 GWP100a	kg-CO_2eq	2.9E+03	2.5E+03	1.1E+01	4.4E+02		-1.3E+03
Ozone layer destruction	kg-CFC-11eq	3.8E-04	1.5E-07	8.8E-11	3.8E-04		-2.3E-07
Acidification	kg-SO_2eq	1.9E+00	1.5E+00	2.8E-02	3.2E-01		-2.0E+00
Photochemical ozone	kg-C_2H_4eq	3.4E-02	1.7E-02	5.1E-05	1.8E-02		-2.7E-01
Eutrophication	kg-PO_4^{3-}eq	1.8E-02	1.8E-02	7.5E-14	2.8E-05		-2.3E-02

2. Life cycle inventory analysis (LCI)

Parameter		Unit
Non-renewable material resources	7.9E+02	kg
Non-renewable energy resources	3.3E+04	MJ
Renewable material resources	1.1E+03	kg
Renewable primary energy	-5.8E+02	MJ
Consumption of freshwater	2.4E+00	m^3

3. Material composition

Material		Unit
iron [Fe]	≧93.0	%
carbon [C]	≦1.00	%
silicon [Si]	≦3.00	%
manganese [Mn]	≦3.00	%
phosphorus [P]	≦0.050	%
sulfur [S]	≦0.050	%
zinc [Zn]	≦2.50	%
aluminum [Al]	≦0.13	%

4. Waste to disposal

Parameter		Unit
Hazardous waste	0.0E+00	kg
Non-hazardous waste.	5.1E+00	kg

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

5. Additional explanation

1) This base material is Wire rod made by Nippon Steel(Ecoleaf registration No.:JR-AJ-21009E-A).
2) Because this product is secondary processing product,the indirect effect is evaluated about the base material.Each LCI includes allocation for scrap recycling as an optional supplementary information【D】at table.1 . Recycling rate (RR) used in this calculation is 93.0% (calculated based on ISO 20915/JIS Q20915 and using Japan data in 2018 from Japan Iron and Steel Federation and Japan Steel Can Recycling Association).
3) Transport distance between Nippon Steel (East Nippon Works Kimitsu Area) and Tokyo Rope Mfg. Co., Ltd. (Tsuchiura Plant) is measured by geographic software.
4) Each item (expect iron) in table 3 is the maximum value of all product standards covered by this EPD. However, the iron content in each product is never less than 93.0%, and the contents of other components are adjusted.
5) Primary data was collected for one year within 2018-2020. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.

6-1. Supplementary environmental information

Tsuchiura Plant has ISO 14001 certificate.

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

7. Assumptions of secondary data used

We use the IDEA v2.1.3 data and steel scrap data(JP-AJ-0001) from the Japan Iron and Steel Federation.

8. Remarks

4/19/2024; Modification about Ecoleaf registration No. of the base material (Wire rod made by Nippon Steel)

- 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/)