



EcoLeaf

Type III Environmental Declaration (EPD)

Registration number : JR-AJ-23002E-A

Japan EPD Program by SuMPO

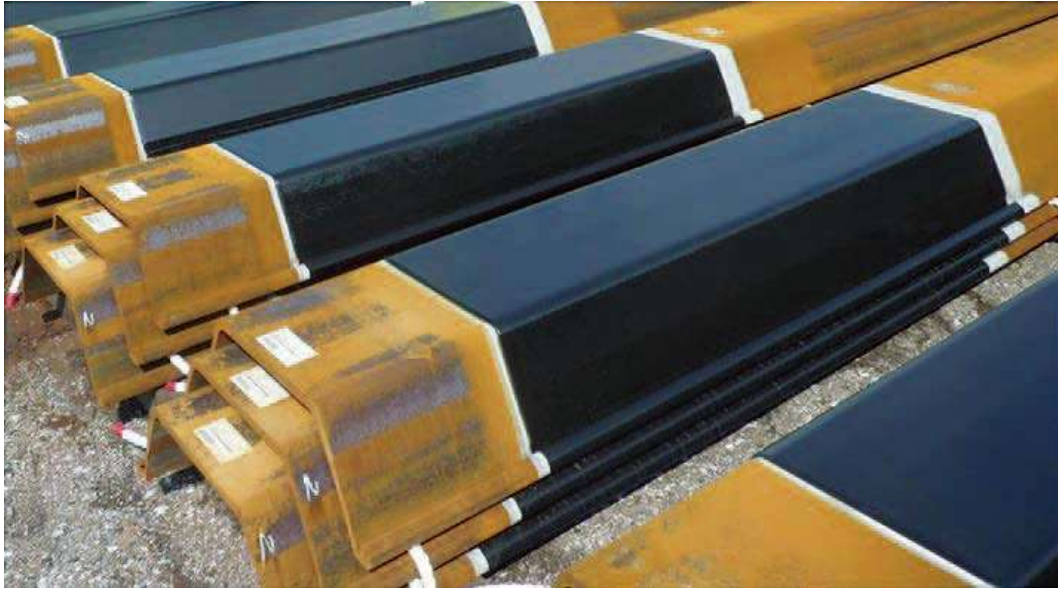
Sustainable Management Promotion Organization

14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo Japan

https://ecoleaf-label.jp

NIPPON STEEL | NIPPON STEEL CORPORATION

NS-PAC® Sheet Piles



Functional unit

1 t

System boundary

final products intermediate products

Production Stage and optional supplementary information

Main specifications of the product

Production Site: East Nippon Works_Kashima Area,
Kansai Works_Wakayama Area(Sakai), Kyushu
Works_Yawata Area

Main product models: NS-PAC® Sheet Piles

Main standards: JIS A 5523, JIS A 5528

※The other available product models and standards are listed on
page 3(8.Remarks).

Type: Steel sheet piles

Registration#	JR-AJ-23002E-A
PCR number	PA-180000-AJ-05
PCR name	Steel products for construction
Publication date	4/7/2023
Verification date	1/19/2024
Verification method	Product-by-product
Verification#	JV-AJ-24022
Expiration date	1/18/2029
PCR review was conducted by:	
Approval date	5/10/2023
PCR review panel chair	Yasunari Matsuno (Chiba University)

Third party verifier*

Tomoko Fuchigami

Independent verification of data & declaration in accordance
with ISO14025 and ISO 21930.

internal external

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

Company Information

NIPPON STEEL CORPORATION

About Us:

<https://www.nipponsteel.com/en/index.html>

Contact Us:

<https://www.nipponsteel.com/en/product/contact/structuralsteel.html>

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1. Results of life cycle impact assessment (LCIA)

Parameter	Stage	【A1~A3】 + 【D】	【A1~A3】	Unit
Global warming IPCC2013 GWP100a		1200	2400	kg-CO ₂ eq
Acidification		-0.48	1.4	kg-SO ₂ eq
Photochemical ozone		-0.25	0.014	kg-C ₂ H ₄ 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 ₂ eq	2.4E+03	6.2E+02	1.2E+02	1.6E+03	-1.2E+03
Ozone layer destruction		kg-CFC-11eq	3.6E-05	2.0E-07	7.8E-10	3.5E-05	-2.2E-07
Acidification		kg-SO ₂ eq	1.4E+00	6.5E-01	6.2E-02	6.7E-01	-1.9E+00
Photochemical ozone		kg-C ₂ H ₄ eq	1.4E-02	5.1E-03	1.0E-03	8.1E-03	-2.6E-01
Eutrophication		kg-PO ₄ ³⁻ eq	4.3E-02	3.6E-03	7.0E-13	3.9E-02	-2.2E-02

2. Life cycle inventory analysis (LCI)

Parameter	Unit
Non-renewable material resources	7.9E+02 kg
Non-renewable energy resources	2.9E+04 MJ
Renewable material resources	8.9E+02 kg
Renewable primary energy	5.0E+01 MJ
Consumption of freshwater	3.9E+00 m ³

3. Material composition

Material	Unit
Hot-Rolled Steel	≥80 %
Urethane elastomer	<20 %

4. Waste to disposal

Parameter	Unit
Hazardous waste	0.0E+00 kg
Non-hazardous waste.	2.1E+00 kg

5. Additional explanation

- 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 JIS Q 20915 and using Japan data in 2018 from Japan Iron and Steel Federation and Japan Steel Can Recycling Association).
- Scenarios of transport to site follow the PCR.
- Primary data collected in 2018. The source of the unit power consumption is the average of 10 electric power suppliers of Japan in 2014.
- For the transport of metallurgical coal, the amount is double counted due to the characteristics of the inventory database on which this estimation is based.

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



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6-1. Supplementary environmental information

Each production site is certified to ISO 14001.

6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
manganese [Mn]	7439-96-5	Industrial Safety and Health Act
nitrogen [N]	7727-37-9	Industrial Safety and Health Act
Urethane	51-79-6	Industrial Safety and Health Act

7. Assumptions of secondary data used

We use the IDEA2.1.3 database.

8. Remarks

Additional information

NS-PAC® Sheet Piles are steel sheet pile products of the following models and standards that have undergone heavy anti-corrosion treatment with urethane elastomer.

1. Product models: ※Examples are shown in ()

- Hat-type sheet piles (NS-SP-10H,NS-SP-25H,NS-SP-45H,NS-SP-50H)
- U-type sheet piles (NS-SP-Ⅱ,NS-SP-Ⅲ,NS-SP-Ⅳ,NS-SP-V L,NS-SP-VIL,NS-SP-Ⅱ w,NS-SP-Ⅲ w,NS-SP-Ⅳ w)
- NS-SP-J (NS-SP-J)

2. Steel grade standards: ※Examples are shown in ()

- JIS A 5523 (SYW295,SYW390,SYW430)
- JIS A 5528 (SY295,SY390)

- January 2024; Modification about allocation method of by-product gases

- For data quantification, please refer to the PCR and the Rules on Quantification and Declaration.
- Comparative assertion is permitted only when the Rules on Quantification and Declaration are satisfied.
(Reference URL : <https://ecoleaf-label.jp/regulation/>)

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