

**NIPPON STEEL | NIPPON STEEL CORPORATION**

# BLACK ZAM™ for Constructions



## Functional unit

1 t

## System boundary

final products       intermediate products

Production Stage and optional supplementary information

## Main specifications of the product

Production sites : Setouchi Works

Main standards :

NIPPON STEEL

See Table 8.Remarks for details.

Type : Coil, Sheet

Main sizes(unit:mm,t:thickness)

t=0.25~6.0

## Company Information

**NIPPON STEEL CORPORATION**

<https://www.nipponsteel.com/en/product/sheet/list/>

<b>Registration#</b>	JR-AJ-23014E-B
<b>PCR number</b>	PA-180000-AJ-06
<b>PCR name</b>	Steel products for construction use
<b>Publication date</b>	02/05/2024
<b>Verification date</b>	01/16/2024
<b>Verification method</b>	Product-by-product
<b>Verification#</b>	JV-AJ-24014
<b>Expiration date</b>	01/15/2029
<b>PCR review was conducted by:</b>	
<b>Approval date</b>	05/10/2023
PCR review	Yasunari Matsuno
panel chair	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.

Registration number : JR-AJ-23014E-B

**1. Results of life cycle impact assessment (LCIA)**

Parameter	Stage	[A1~A3] + [D]	[A1~A3]	Unit
Global warming IPCC2013 GWP100a		1600	2700	kg-CO <sub>2</sub> eq
Acidification		0.55	2.3	kg-SO <sub>2</sub> eq
Eutrophication		0.025	0.046	kg-PO <sub>4</sub> <sup>3-</sup> eq

Table Legend

【A1】: Raw material 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)

Be sure to refer to “6-1. Supplementary environmental information” for Scope 3 and carbon footprint calculations.

Parameter	stage	Unit	[A1~A3]	[A1]	[A2]	[A3]	[D]
Global warming IPCC2013 GWP100a		kg-CO <sub>2</sub> eq	2.7E+03	5.2E+02	1.5E+02	2.1E+03	-1.1E+03
Ozone layer destruction		kg-CFC-11eq	2.7E-04	2.3E-04	9.8E-10	3.8E-05	-2.1E-07
Acidification		kg-SO <sub>2</sub> eq	2.3E+00	5.3E-01	4.0E-01	1.4E+00	-1.8E+00
Photochemical ozone		kg-C <sub>2</sub> H <sub>4</sub> eq	2.4E-02	5.0E-03	7.9E-03	1.1E-02	-2.5E-01
Eutrophication		kg-PO <sub>4</sub> <sup>3-</sup> eq	4.6E-02	1.2E-03	8.8E-13	4.5E-02	-2.1E-02

**2. Life cycle inventory analysis (LCI)**

Parameter	Unit	Unit
Non-renewable material resources	6.8E+02	kg
Renewable material resources	9.6E+02	kg
Non-renewable energy resources	3.0E+04	MJ
Renewable primary energy	-6.3E+02	MJ
Consumption of freshwater	2.4E-01	m <sup>3</sup>

**3. Material composition**

Material	Unit	Unit
Fe	≥84.0	%
C	≤1.10	%
Si	≤3.00	%
Mn	≤3.00	%
P	≤0.050	%
S	≤0.050	%
Zn	≤14.00	%
Al	≤1.00	%
Mg	≤0.50	%

**4. Waste to disposal**

Parameter	Unit	Unit
Hazardous waste	0.0E+00	kg
Non-hazardous waste.	1.7E+00	kg

\*Data derived from LCA and not assigned to the impact categories of LCI.

**5. Additional explanation**

- Each LCI includes allocation for scrap recycling as an optional supplementary information(3) 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).
- Scenarios of transport to site follow the PCR.
- Each item (except 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 84%, and the contents of other components are adjusted.
- 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.

### 6-1. Supplementary environmental information

Setouchi Works has ISO 14001 certificate.

Note on Global warming IPCC2013 GWP100a: When purchasers of this product calculate GHG emissions under GHG Protocol Scope 3, Category 1 for their organization, or when calculating the carbon footprint of products manufactured using this product, they must check the following URL:

<https://www.nipponsteel.com/en/product/cfp/certificate.html>

(The content of the above URL is not subject to EPD verification.)

### 6-2. Regulated hazardous substances

Substance	CAS No.	Reference to standards or regulations
Manganese [Mn]	7439-96-5	Industrial Safety and Health Act

### 7. Assumptions of secondary data used

The IDEA2.1.3 data and steel scrap data(JP-AJ-0001) from the Japan Iron and Steel Federation are used.

### 8. Remarks

NIPPON STEEL Grade

General use (e.g.MSMCC-DZBK、MSMHC-DZBK)、Deep drawing (e.g.MSMCD-DZBK、MSMHD-DZBK)、Structures (e.g.MSMCK370-DZBK、MSMHK370-DZBK)

Constructions (e.g.MSMCK400K-DZBK、MSMHK400K-DZBK) etc.

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

\*April 2026; Additional explanatory notes added to "6-1. Supplementary environmental information".

- 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/>)