



✓ Third party verified

Environmental Product Declaration

In conformance with
ISO14025 | ISO14040 | ISO14044



NICHIAS Corporation

Wrap-type fire-proofing covering materials (MAKIBEE™)



Registration number

SuMPO-EPD-2605-137-1

Verification date

2026/5/15

Publication date

2026/6/29

Expiration date

2031/5/14

EPD type

Multiple Products EPD

* First publication date

Additional standards in conformance

ISO21930:2007

EPD can be updated or withdrawn during the validity period. To confirm the validity of this EPD, check the following website:
<https://ecoleaf-label.jp/epd/search>

● General Information

> Programme

Programme name	SuMPO EPD Japan
Programme operator	Sustainable Management Promotion Organization (SuMPO)
Address	KANDA SQUARE GATE 4F, 14-8, Uchikanda 1-chome, Chiyoda-ku, Tokyo, 101-0047, Japan
Website	https://ecoleaf-label.jp

> GPI and PCR

GPI	SuMPO EPD Japan General Program Instructions v.2.1.1
PCR name	Rock wool fireproof covering material
PCR registration number	PA-177100-CO-01
PCR publication date	2025/1/29
PCR review panel chair	Tetsuya Okuyama(Mie University)
PCR valid until	2030/1/28
PCR issuer	Sustainable Management Promotion Organization (SuMPO)

> Verification

Verification Type	Third-party verification in conformance with ISO14025		
	☐ Internal	☒ External	
	☒ Third-party verification by individual verifier	☐ Third-party verification by verification body	☐ Third-party verification by system certification
Verifier	Tomoko Fuchigami(EFPRO LLC)		

> Standards

Standards in conformance with;	☒ ISO14040:2006	☒ ISO14044:2006	☐ ISO14067:2018
	☒ ISO14025:2006	☒ ISO21930:2007	☐ ISO21930:2017
	☐ EN15804+A2	☐ EN50693:2019	☐ ISO/IEC63366:2025

EPD owner is responsible for the information contained in the EPD and for environmental claims related to the information. For any inquiries or requests regarding the content of the EPD, please contact the EPD owner.

EPDs are comparable only if they comply with the same standards, use the same sub-PCR where applicable, include all relevant information modules and are based on equivalent scenarios with respect to the context of construction works. Comparability of EPDs is limited to those applying a functional unit.

The LCIA results are relative expressions and do not predict impacts on category endpoints, the exceedance of thresholds, safety margins or risks.

When using weighted averages for calculation, the life cycle impact assessment results, life cycle inventory analysis-related information, waste-related information, and environmental information on output flows do not correspond to information about a specific product.

● EPD Owner's Information

Name of company and dept.	Building Materials Division, NICHIAS Corporation
Address	6-1, Hatchobori 1-chome, Chuo-ku, Tokyo, 104-8555, Japan
Contact	+81 03-4413-1161
LCA practitioner	Yuka Tamaoki(Technical Development Department, Building Materials Division)
Company description	Under its corporate philosophy of contributing to the Earth's bright future through its TATSU-TAMOTSU™ (Insulation and Protection) technologies, NICHIAS provides its flagship thermal insulation and sealing material products to customers across a wide range of industries.

●Product Information

Product name		Wrap-type fire-proofing covering materials (MAKIBEETM)	
Product /model number		MAKIBEE™ (20mm) ※Color lineup includes BL and WGR	
Product sepcification	Function	Non-combustible,Fire-resistant	
	Mass	2.0 kg/m ²	Conversion factor –
	Applications	Fireproofing covering materials for the main structural parts of a steel-frame construction	
	TS*	Noncombustible certification, fire resistance certification, heat resistance	
Service life	Service life	Designed to match the service life of the building	
	In-use conditions	Designed to match the service life of the building	
	reference	–	
Manufacturing site(s)		NICHIAS CERATECH CO.,LTD , PT.NICHIAS ROCKWOOL INDONESIA(NRI)	
Product description		A wrap-type fireproofing covering material that is made by turning heat-resistant rock wool into a felt-like mat and finishing it with a facing material such as non-woven fabric.	
Website		https://www.nichias.co.jp/en	

* TS: technical specifications,

●Product Content

Product components	Proportion (%)	Mass (unit)	
Rock wools	96.8	1.94	kg
Plastics	1.0	0.02	kg
Others	2.2	0.04	kg
Packaging materials	Proportion (%)	Mass (unit)	
Plastics	79.4	0.03	kg
Others	20.6	0.01	kg

●Biogenic Carbon Content

Item	Content (kg-C)	Content (kg-CO ₂ eq)
Biogenic carbon content per product	-	-
Biogenic carbon content in packaging	-	-

● LCA-related Information

> EPD Type Information

EPD type	Product type	☐ Single product EPD	☒ Multiple products EPD	☐ Industry-wide EPD
	Site type	☐ Single site	☒ Multiple sites	
	Value	☐ Specific	☒ Average	☐ Representative ☐ Worst case
Geographical coverage		Global		
Description of representativeness for multiple-products/sites EPD		This document shows the calculation results according to the weighted average value per square meter (m ²) of MAKIBEE and High-Density MAKIBEE. While primary data has been collected from multiple sites, the material composition and production process are more or less the same for each product. For electric power, data from the electrical grids of Japan and Indonesia has been used.		
Description of variation for multiple-products/sites EPD		Primary data has been collected from both sites where the products are manufactured.		
Description of products covered in the multiple products EPD		—		

> LCA Information

Functional unit		m ²
Mass per declared unit (Conversion factor to mass)		2.0 kg/m ²
Reference flow (number of products required to fulfil the function)		—
System boundary		☐ Cradle-to-Gate ☒ Cradle-to-Gate with options ☐ Cradle-to-Grave
LCA software		MiLCA v.3 Standalone version
LCI database		IDEA v3.1
Characterization model		Climate change: IPCC Fifth Assessment Report (IPCC 2013), Other areas of impact: LIME2
Use of other background data		—
Secondary data quality		—
Primary data collection sites		NICHIAS CERATECH CO.,LTD , PT.NICHIAS ROCKWOOL INDONESIA(NRI)
Primary data collection period		2024/10/1~2025/3/31
Biogenic carbon		☒ 0/0 approach ☐ -1/+1 approach
Information about electricity	Use	☒ Average consumption mix ☐ Others
	Type	—
	Purchase date	—
	Issuing body	—

> Modules

Production stage			Construction stage		Use stage							End-of-life stage				Suppl. info
A1	A2	A3			Use					Operation						
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Extraction and upstream production	Transport to factory	Manufacturing	Transport to site	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction / Demolition	Transport to waste processing or disposal	Waste processing	Disposal of waste	Potential net benefits
■	■	■	■	■	—	—	—	—	—	—	—	■	■	—	■	—

■ : declared module — : module not declared

> Allocation

For this calculation, process subdivision and application were assessed in accordance with the procedures defined in the GPI.

Multiple other products are also produced in the MAKIBEE production process.

A physical allocation was applied because avoiding allocation through process subdivision is difficult, and the economic values of MAKIBEE, High-Density MAKIBEE, and other products produced from this process are equivalent.

> Cut-off rules

For processes where the environmental impact is minimal and data collection is difficult, a cut-off was applied in accordance with the 5% cut-off criteria specified in the PCR.

> System Boundary

This was set in accordance with the PCR. The usage stage, which is defined as an out-of-scope process in the PCR, and the intermediate waste treatment within the waste and recycling stage are outside the scope. The temporal system boundary is 100 years.

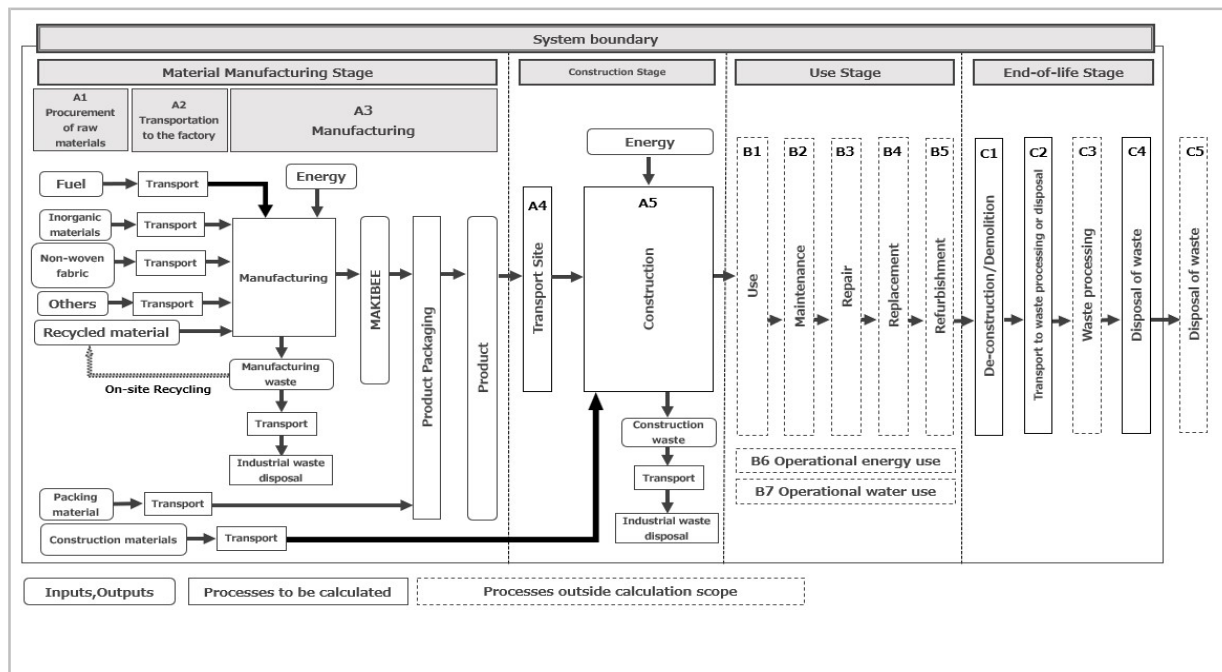
> Scenario

Modules	Description
A2	Where the means of transportation was not certain in the procurement and transportation of raw materials, the Sub-PCR Annex B: Transportation Scenarios of "Rock Wool Fire-proofing Covering Materials" was used.
A3	Where the means of transportation was not certain in the procurement and transportation of waste, the Sub-PCR Annex B: Transportation Scenarios of "Rock Wool Fire-proofing Covering Materials" was used.
A4	With regard to the transportation of products, for products shipped from an overseas factory, the Sub-PCR Annex B: Transportation Scenarios of "Rock Wool Fire-proofing Covering Materials" was used.
A5	With regard to installation, the Sub-PCR Annex C: Installation Scenarios of "Rock Wool Fire-proofing Covering Materials" was used.
C2	Where the means of transportation was not certain in the procurement and transportation of waste, the Sub-PCR Annex B: Transportation Scenarios of "Rock Wool Fire-proofing Covering Materials" was used.

> Electricity Modelling

For all the lifecycle stages at NICHIA CERATECH, data on Japan's average grid electricity for 2018 was used. For all the lifecycle stages at NICHIA ROCKWOOL INDONESIA, data on Indonesia's public electricity for 2015 was used.

> Life Cycle System Diagram



● LCA Result

> LCIA Indicators

		【A1】【A2】	【A3】	【A4】【A5】	【C1】【C2】【C4】	—	D suppl. Info
GWP	kg-CO ₂ eq	8.17E-01	3.23E+00	2.43E-01	2.47E-01	—	—
Ozone layer depletion	kg-CFC-11eq	6.55E-08	1.14E-07	1.15E-08	3.45E-09	—	—
Acidification	kg-SO ₂ eq	1.62E-03	5.76E-03	3.03E-04	2.41E-04	—	—
Photochemical oxidants	kg-C ₂ H ₄ eq	2.69E-05	1.32E-05	1.69E-06	1.21E-06	—	—
Eutrophication	kg-PO ₄ ³⁻ eq	8.20E-05	2.68E-06	3.11E-09	2.79E-07	—	—

> LCI

		【A1】【A2】	【A3】	【A4】【A5】	【C1】【C2】【C4】	—	D suppl. Info
Use of non-renewable resources	kg	1.78E+00	9.11E-03	6.31E-04	1.25E-03	—	—
Use of non-renewable energy	kg	3.12E-01	1.19E+00	7.82E-02	4.24E-02	—	—
Use of non-renewable energy	MJ	1.25E+01	4.06E+01	3.44E+00	1.88E+00	—	—
Use of renewable resources	kg	1.18E+00	1.36E-03	5.14E-05	3.66E-05	—	—
Use of renewable energy	MJ	9.12E-01	3.93E+00	3.03E-01	8.74E-02	—	—
Consumption of freshwater resources	m ³	1.23E-02	7.01E-03	1.10E-05	2.43E-05	—	—

> Waste Indicators

		【A1】【A2】	【A3】	【A4】【A5】	【C1】【C2】【C4】	—	D suppl. Info
hazardous waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	—	—
non-hazardous waste disposed	kg	1.28E-03	8.68E-02	1.00E-01	2.37E+00	—	—
Municipal waste, landfill	kg	2.43E-06	6.67E-14	2.62E-15	1.14E-14	—	—
Industrial waste, landfill	kg	1.28E-03	8.68E-02	1.00E-01	2.37E+00	—	—

*It indicates the amount of waste generated throughout the lifecycle.

> Output Flow Indicators

		【A1】【A2】	【A3】	【A4】【A5】	【C1】【C2】【C4】	—	D suppl. Info
Components for reuse	kg	—	—	—	—	—	—
Materials for recycling	kg	—	—	—	—	—	—
Material for energy recovery	kg	—	—	—	—	—	—
Exported energy from waste (energy recovery efficiency ≥ 60%)	MJ	—	—	—	—	—	—
Incineration of waste (energy recovery efficiency < 60%)	Waste disposed	kg	—	—	—	—	—
	Recovered energy	MJ	—	—	—	—	—
Waste disposed in landfill and energy recovered from landfill gas	Waste disposed	kg	—	—	—	—	—
	Recovered energy	MJ	—	—	—	—	—

> Description of LCA Results

The calculated values for each product thickness were obtained using the calculation method of each PCR Annex D: Construction Thickness (product Thickness), and are as follows.

■ LCIA results for the construction thickness per square meter

LCIA Indicators /Per 1m ² of construction area		Construction thickness (mm)				
		MAKIBEE			MAKIBEE High density	
		20	40	65	25	40
GWP	kg-CO ₂ eq	4.53.E+00	9.07.E+00	1.62.E+01	6.80.E+00	1.09.E+01
Ozone layer depletion	kg-CFC-11eq	1.95.E-07	3.90.E-07	6.96.E-07	2.92.E-07	4.67.E-07
Eutrophication	kg-PO ₄ ³⁻ eq	8.49.E-05	1.70.E-04	3.04.E-04	1.27.E-04	2.04.E-04
Acidification	kg-SO ₂ eq	7.93.E-03	1.59.E-02	2.84.E-02	1.19.E-02	1.90.E-02
Photochemical oxidants	kg-C ₂ H ₄ eq	4.30.E-05	8.60.E-05	1.54.E-04	6.45.E-05	1.03.E-04

■ Construction mass, area, and volume correlation table

Construction mass,volume /Per 1m ² of construction area		Construction thickness (mm)				
		MAKIBEE			MAKIBEE High density	
		20	40	65	25	40
Construction mass	kg	2.00	4.00	7.15	3.00	4.80
Construction volume	m ³	0.02	0.04	0.065	0.025	0.04

● Additional Environmental Information

> Additional Environmental Information not related to LCA

NICHIAS CERATECH CO., LTD. holds ISO 9001 and ISO 14001 certification, and PT.NICHIAS ROCKWOOL INDONESIA holds ISO 9001 certification.

> Information on Hazardous Substances

Hazardous materials name	CAS No.	Standards or regulations
Heat Resistant Rockwool	—	Industrial Safety and Health Act (included in the final product)
Mineral oil	—	Industrial Safety and Health Act (included in the final product)

Release of dangerous substances from construction products

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● Definitions of Terms

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●References

- ISO14025:2006 Environmental labels and declarations — Type III environmental declarations — Principles and procedures
- ISO14040:2006 Environmental management - Life Cycle Assessment - Principles and framework
- ISO14044:2006 Environmental management - Life Cycle Assessment - Requirements and guidelines
- ISO 21930:2007 Sustainability in building construction — Environmental declaration of building products

●Version History

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