



✓ Third party verified

Environmental Product Declaration

In conformance with

ISO14025

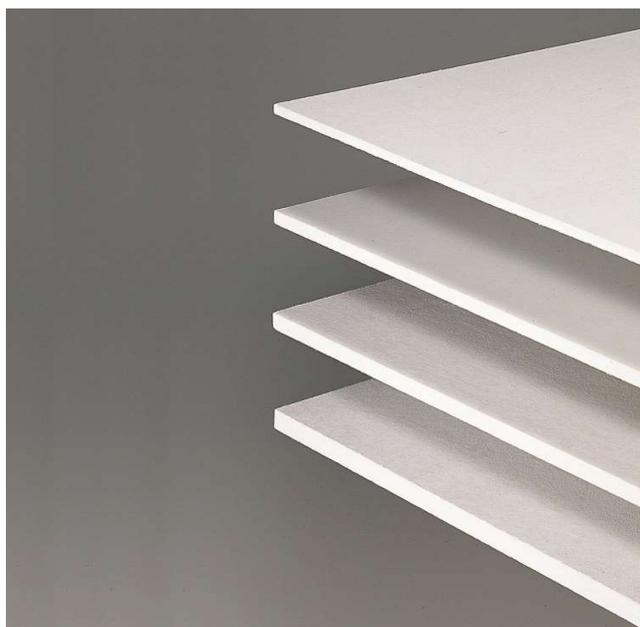
ISO14040

ISO14044



NICHIAS Corporation

Calcium silicate board (ECOLUX™)



Registration number

SuMPO-EPD-2510-9-1

Verification date

2025/10/17

Publication date

2025/11/28

Expiration date

2030/10/16

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EPD can be updated or withdrawn during the validity period.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 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	Core PCR for Construction products
PCR registration number	SuMPO-PCR-01000-2-0-0
PCR publication date	2025/3/31
PCR review panel chair	Toshiharu Ikaga
PCR valid until	2030/3/30
PCR issuer	Sustainable Management Promotion Organization (SuMPO)

> Verification

Verification Type	Third-party verification in conformance with ISO14025 and ISO21930:2007		
	<input type="checkbox"/> Internal	<input checked="" type="checkbox"/> External	
	<input checked="" type="checkbox"/> Third-party verification by individual verifier	<input type="checkbox"/> Third-party verification by verification body	<input type="checkbox"/> Third-party verification by system certification
Verifier	Kengo Minamiyama(k's business factory)		

> Standards

Standards in conformance with;	<input checked="" type="checkbox"/> ISO14040:2006	<input checked="" type="checkbox"/> ISO14044:2006	<input type="checkbox"/> ISO14067:2018
	<input checked="" type="checkbox"/> ISO14025:2006	<input checked="" type="checkbox"/> ISO21930:2007	<input type="checkbox"/> ISO21930:2017
	<input type="checkbox"/> EN15804+A2	<input type="checkbox"/> EN50693:2019	<input type="checkbox"/> 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	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.

Environmental Product Declaration for Calcium silicate board (ECOLUX™)

● Product Information

Product name	Calcium silicate board (ECOLUX™)	
Product /model number	ECOLUX™(6,8,10,12mm), ECOLUX™ Embossed Boards(6mm)	
Product specification	Function	Non-combustible, fire-resistant (when used in combination with gypsum boards), JIS-compliant products
	Mass	1kg Conversion factor 0.8g/cm ³
	Applications	Interior ceilings and walls of buildings such as offices, commercial facilities, factories, houses, and apartment buildings, as well as the soffits of houses
	TS*	Lightweight, high strength, and low dimensional change due to temperature and humidity
Service life	Service life	Conforms to the service life of the building
	In-use conditions	Conforms to the in-use conditions of the building
	reference	-
Manufacturing site(s)	NICHIAS Corporation's Fukuroi Factory (Japan)	
Product description	A non-combustible building material that features a strong and stable calcium silicate crystal structure and shows minimal change and deformation due to temperature, humidity, and aging.	
Website	https://www.nichias.co.jp/en	

* TS: technical specifications,

● Product Content

Product components	Proportion (%)	Mass (unit)
Inorganic materials	94.0	0.94 kg
Pulp	6.0	0.06 kg
Packaging materials	Proportion (%)	Mass (unit)
Wooden pallet	100.0	0.01

※Weighted average value of ECOLUX™ and ECOLUX™ Embossed boards

● Biogenic Carbon Content

Item	Content (kg-C)	Content (kg-CO ₂ eq)
Biogenic carbon content per product	0.03	0.11
Biogenic carbon content in packaging	-	-

※Weighted average value of ECOLUX™ and ECOLUX™ Embossed boards

● LCA-related Information

> EPD Type Information

EPD type	Product type	<input type="checkbox"/> Single product EPD	<input checked="" type="checkbox"/> Multiple products EPD	<input type="checkbox"/> Industry-wide EPD
	Site type	<input checked="" type="checkbox"/> Single site		<input type="checkbox"/> Multiple sites
	Value	<input type="checkbox"/> Specific	<input checked="" type="checkbox"/> Average	<input type="checkbox"/> Representative <input type="checkbox"/> Worst case
Geographical coverage		A1-A2: Overseas A3: Japan		
Description of representativeness for multiple-products/sites EPD		The results represent calculations based on the weighted average per kilogram of the products ECOLUX and ECOLUX Embossed Boards.		
Description of variation for multiple-products/sites EPD		This EPD covers two similar products. The material composition of each product is equivalent, and it has been confirmed that the variations of each production flow are within $\pm 10\%$. Therefore, the variation in the calculation results is also within $\pm 10\%$.		
Description of products covered in the multiple products EPD		Calcium silicate boards used as interior building materials for walls and ceilings, manufactured primarily from siliceous and calcareous materials, fibers, and additives. The thickness range is 6–12 mm. The product types covered are flat boards, perforated boards, and embossed boards.		

> LCA Information

Declared unit	kg		
Mass per declared unit (Conversion factor to mass)	1kg		
Reference flow (number of products required to fulfil the function)	-		
System boundary	<input checked="" type="checkbox"/> Cradle-to-Gate	<input type="checkbox"/> Cradle-to-Gate with options	<input type="checkbox"/> Cradle-to-Grave
LCA software	MiLCA v.3 Standalone version		
LCI database	IDEA v3.1		
Characterization model	GWP IPCC2013 100a		
Use of other background data	-		
Secondary data quality	No secondary data used		
Primary data collection sites	NICHIAS Corporation Fukuroi Factory (Japan)		
Primary data collection period	2024/4/1~2025/2/28		
Biogenic carbon	<input checked="" type="checkbox"/> 0/0 approach	<input type="checkbox"/> -1/+1 approach	
Information about electricity	Use	<input checked="" type="checkbox"/> Average consumption mix	<input type="checkbox"/> Others
	Type	-	
	Purchase date	-	
	Issuing body	-	

> Modules

Production stage			Construction stage		Use stage							End-of-life stage				Suppl. info
A1	A2	A3	A4	A5	Use					Operation		End-of-life stage				
					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
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	-	-	-	-	-	-	-	-	-	-	-	-	-

■ : 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 ECOLUX production process. A physical allocation was applied because avoiding allocation through process subdivision is difficult, and the economic values of ECOLUX, ECOLUX Embossed, and other products produced from this process are equivalent.

> Cut-off rules

A cut-off was applied because the impact from the consumables of the production equipment is minor, and collecting data from them is difficult.

> System Boundary

The calculations cover material production stages A1 to A3 only.

According to the PCR used, only the scope described above is required to be calculated. Therefore, A4 and subsequent modules are optional. The temporal system boundary is 100 years.

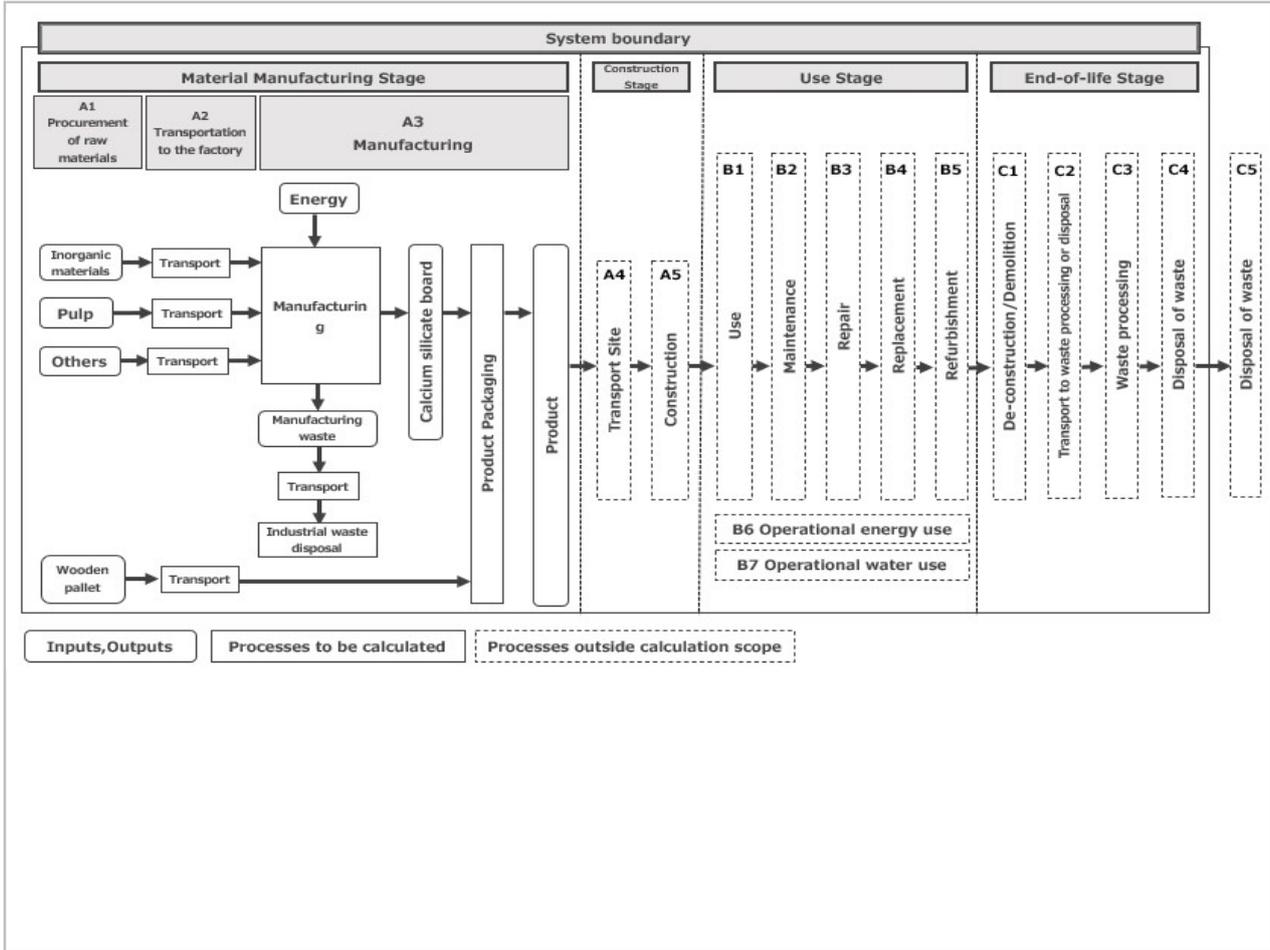
> Scenario

Modules	Description
A2	Regarding the transportation of raw materials where the mode of transport is uncertain, the mode of transport is as per the transportation scenario in Annex.B of the Core-PCR for "Construction Products and Building Materials."
A3	Regarding the transportation of waste where the mode of transport is uncertain, the mode of transport is as per the transportation scenario in Annex.B of the Core-PCR for "Construction Products and Building Materials." For the waste transportation distance, the PCR scenario with a 100 km transportation distance within a single prefecture is applied.

> Electricity Modelling

In all the lifecycle stages covered, the calculations were conducted using Japan's average grid electricity data for 2018.

> Life Cycle System Diagram



● LCA Result

> LCIA Indicators

		【A1】	【A2】	【A3】	-	-	D suppl. Info
GWP	kg-CO ₂ eq	2.88E-01	5.16E-02	5.20E-01	-	-	-
Ozone layer depletion	kg-CFC-11eq	1.69E-08	6.10E-13	1.81E-07	-	-	-
Acidification	kg-SO ₂ eq	2.25E-04	7.22E-05	3.84E-04	-	-	-
Urban air pollution	kg-SO ₂ eq	1.57E-04	2.90E-05	2.72E-04	-	-	-
Photochemical oxidants	kg-C ₂ H ₄ eq	1.05E-06	2.05E-07	4.37E-06	-	-	-

> LCI

		【A1】	【A2】	【A3】	-	-	D suppl. Info
Use of non-renewable resources	kg	2.44E+00	2.46E-07	1.18E-02	-	-	-
Use of non-renewable energy	kg	3.39E-01	8.62E-02	9.49E-01	-	-	-
Use of non-renewable energy	MJ	1.20E+01	3.87E+00	4.29E+01	-	-	-
Use of renewable resources	kg	2.92E-01	6.31E-08	9.59E-04	-	-	-
Use of renewable energy	MJ	7.07E-01	8.51E-05	5.68E+00	-	-	-
Consumption of freshwater resources	m ³	9.56E-01	4.98E-06	1.56E-04	-	-	-

> Waste Indicators

		【A1】	【A2】	【A3】	-	-	D suppl. Info
hazardous waste disposed	kg	-	-	-	-	-	-
non-hazardous waste disposed	kg	1.83E-02	2.14E-09	1.92E-02	-	-	-
Municipal waste, landfill	kg	4.39E-12	3.57E-18	4.16E-14	-	-	-
Industrial waste, landfill	kg	1.83.E-02	2.14.E-09	1.92.E-02	-	-	-

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

> Output Flow Indicators

		Raw materials acquisition stage	Production stage	Distribution stage	-	-	D suppl. Info
Components for reuse	kg	-	-	-	-	-	-
Materials for recycling	kg	-	-	-	-	-	-
Material for energy recovery	kg	-	-	-	-	-	-
Exported energy from waste (energy recovery efficiency \geq 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

For products where the transportation details were uncertain, calculations were conducted based on the PCR scenarios.

A chart indicating the weight of each product size is shown below.

<Product Weight per Square Meter by Thickness>

Thickness (mm)	Mass (kg/m ²)	
	ECOLUX	ECOLUX Embossed Boards
6	4.8	4.8
8	6.4	-
10	8	-
12	9.6	-

● Additional Environmental Information

> Additional Environmental Information not related to LCA

- The products are manufactured at an ISO 9001 and ISO 14001 certified factory.

> Information on Hazardous Substances

Hazardous materials name	CAS No.	Standards or regulations
Quartz (crystalline silica)	14808-60-7	Industrial Safety and Health Act

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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