

Environmental Product Declaration

In accordance with 14025 and EN15804 +A2

NATURAL WOODEN MOULDINGS FROM BIRCH



Owner of the declaration:
SIA "Latvia Timber International"

Product name:
Natural wooden mouldings from birch

Declared unit:
1 m

This declaration is based on Product Category Rules:
CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 015 Part B for wood and wood-based products 4.0

Program holder and publisher:
The Norwegian EPD foundation

Declaration number:
NEPD-4372-3600-EN

Registration number:
NEPD-4372-3600-EN

Issue date: 20.04.2023

Valid to: 20.04.2028

General information

Product:

Natural wooden mouldings from birch

Program Operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
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Declaration number:

NEPD-4372-3600-EN

This declaration is based on Product

Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR;
NPCR 015 Part B for wood and wood-based products 4.0

Statements:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer, life cycle assessment data and evidence.

Declared unit:

1 m of standard dimensions 28x99 mm natural wooden mouldings from birch

Verification:

Independent verification of the declaration and data, according to ISO14025:2010

Internal

External



Silvia Vilčeková

Independent verifier approved by EPD Norway

Owner of the declaration:

SIA "Latvia Timber International"

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Manufacturer:

SIA "Latvia Timber International"
Meža 2, LV-4001, Limbaži

Place of production:

Limbaži, Latvia

Management system:

FSC-C020480, valid 17.03.2019-16.03.2024
ISO 50001:2011
CE 2358-CPR-0246

Organisation no:

40003057834

Issue date:

20.04.2023

Valid to:

20.04.2028

Year of study:

2021

Comparability:

EPD of construction products may not be comparable if they do not comply with EN 15804:A2 and seen in a building context.

The EPD has been worked out by:

Sigita Židonienė from Vesta Consulting

Approved:



Håkon Hauan
Manager of EPD Norway

Product

Product description:

Mouldings from birch are used for interior purposes. The mouldings are produced from solid and glued birch wood. All raw wood material is cut into planks before arrival to the factory. At the factory, the mouldings are cut and shaped into the desired shapes. Mouldings are used for industrial, commercial, and private buildings, sports arenas, warehouses and other structures for interior wall cladding, ceilings, doors, floors and staircase.

All product raw material – wood comes from sustainable managed wood forests, product itself has CE and FSC certification (Licence code – FSC-C020480). Production follows ISO 50001:2011 standard.

Product specification:

Materials	KG	%
Wood, dry mater	1,579	91,9
Water in wood	0,137	8,0
Glue	0,003	0,2
Total	1,719	100

Packaging	KG
Packaging - wood	0,040
Packaging - Steel	0,003
Packaging - Plastic	0,018
Total with packaging	1,764

Technical data:

Wood density: 620 kg/m³; standard dimensions: 28x99 mm. Wood moisture ±8%. More information about the product <https://www.latviatimber.lv/>.

Market: Europe

Reference service life, product:

The reference service life of the mouldings is 60 years.

LCA: Calculation rules

Declared unit:

1 m of standard dimensions 28x99 mm natural wooden mouldings from birch.

Data quality:

All data represents the applicable geography, time and technology for the specific and generic data, generally assessed as good and very good. Primary data are collected from the specific production sites,

in the reference year 2021 and represent stabilized production. Generic data is from Ecoinvent v3.6 database, for calculations is used One Click LCA Software operated by One Click LCA Ltd.

Allocation:

The allocation is made in accordance with the provisions of EN 15804+A2. Production activities, electricity and energy consumption and waste generation are allocated equally among all products from the production site through mass allocation.

System boundary:

The LCA is performed as a ‘cradle-to-grave with modules C-D and optional modules A4-A5 ’ study, addressing all life cycle stages identified in the EN 15804+A2. All major raw materials, energy, electricity use and waste are included for all life cycle modules, see picture below. Use stage B1-7 modules are not considered.

Product stage			Installation stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X	X	X
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demo.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND.

Technical flowchart:

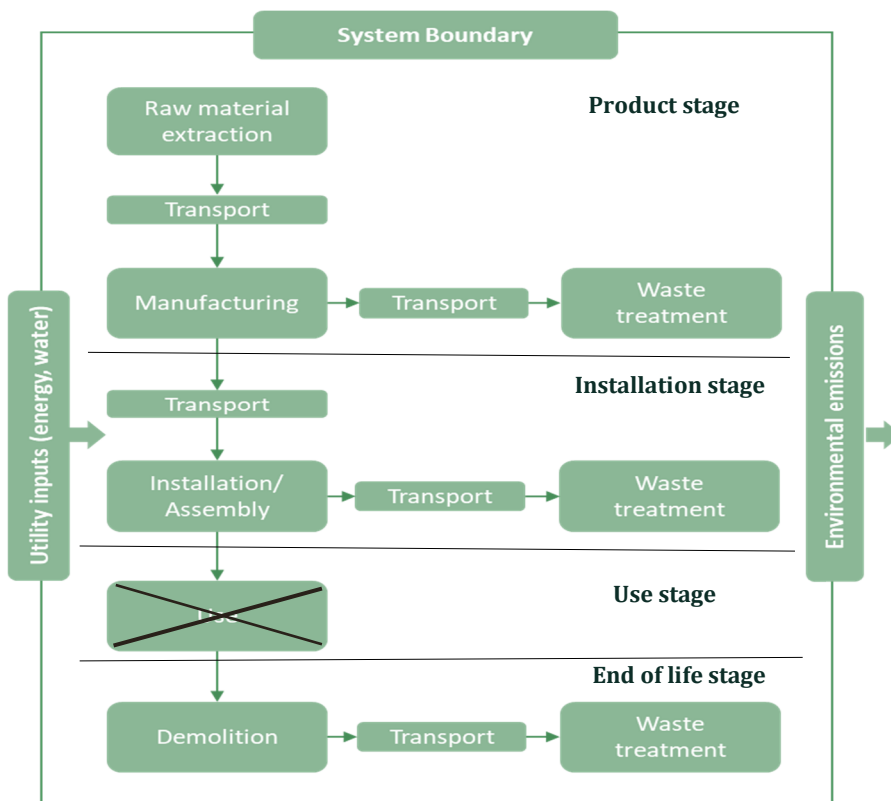


Figure 1. Process flow diagram

Cut-off criteria:

All major raw materials and all the essential energy are included. All hazardous materials and substances are considered in the inventory. Data sets within the system boundary are complete and fulfil criteria for the exclusion of inputs and output criteria. All data, materials and energy consumptions, have been specified according to the production data and have been considered within the inventory analysis.

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Product stage (A1, A2, A3):

A1- Raw material supply

The main raw materials are FSC certificated birch side boards and some glue. The one-component adhesive based on water dispersion of polyvinyl acetate dispersion is used in the production but has not been included in the calculation because there were no suitable datapoint for this material in used database and its quantity is less than 1% in mass.

A2 - Transport of raw materials

Assumptions for transportation distances are based on manufacturers' data: wood is transported on average for 190 km, glue for 310 km, packaging materials on average for 158 km.

A3 - Manufacturing

This product stage includes energy consumption (electricity), fuels for forklifts (diesel and petrol), use of water, as well as waste and emissions produced within the manufacturing stage.

Assembly stage (A4, A5):

A4 -Transport from production place to assembly/user

The transportation from production to construction site is based on a scenario where the main share of manufactured product is transported on a large lorry from Limbaži, Latvia (90 km) to Riga port, then production is transported by ferry to a port of Sweden (476 km). From there, 50 % of production is transported to a construction site to users in Sweden (on average 210 km) and 50% of production to Norway (on average 810 km). Vehicle capacity utilization volume factor is assumed to be 1 which means full load. In reality, it may vary but as the role of transportation emissions in total results is small and so the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that return trip is used by transportation company to serve the needs of other clients.

Transport from production place to user (A4)	Capacity utilisation (excl. empty return)	Distance KM	Fuel/Energy consumption	Unit	value (l/t)
Truck, over 32 tonnes, Euro 5 (km) - Latvia	1	90	0,023	l/tkm	2,07
Truck, over 32 tonnes, Euro 5 (km) - Sweden	1	210	0,023	l/tkm	4,83
Truck, over 32 tonnes, Euro 5 (km) - Norway	1	810	0,023	l/tkm	18,63
Freight sea, ferry	1	476	0,039	l/tkm	18,56

A5-Assembly

The product is assembled manually, there is no need for any additional materials, but up to user choice the mouldings can be fixed with screw or nails. In this stage only packaging waste was considered.

	Unit	Value
Waste packaging	kg	0,015

End of Life (C1, C3, C4):

C1 – Demolition

Disassembling the mouldings from the building wall requires minimal energy and could be done manually, therefore no energy consumption for demolition is declared.

C2 – Transport to waste processing

It is assumed that the average distance to nearest waste processing point is 60 km. The mouldings are assumed to be transported by truck.

Transport to waste processing (C2)	Capacity utilisation (excl. return)	Distance KM	Fuel/Energy consumption	Unit	value (l/t)
Truck, over 32 tonnes, Euro 5 (km)	1	60	0,023	l/tkm	1,38

C3 – Waste processing

Wood is highly recyclable and reusable material. Therefore, it is assumed that 100% of collected product at the end of life, will be incinerated with energy recovery.

	Unit	Value
Hazardous waste disposed	kg	0
Collected as wood waste	kg	1,719
Reuse	kg	0
Recycling	kg	0
Energy recovery	kg	1,719
To landfill	kg	0

C4 – Disposal

As all product at the end of life is collected for incineration with energy recovery, no material for final disposal is declared.

Benefits and loads beyond the system boundaries (D)

Benefits of recycling waste generated in module C3 are taken into account in module D. Wood waste is incinerated and the generated energy can replace the need for heat energy in district heating. Energy content of wood waste is 19,42 MJ/kg. The incineration efficiency is considered 62%.

	Unit	Value
Energy recovered - heat	MJ	20,697

LCA: Results

Core environmental impact indicators 15804+A2

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP – total	kg CO ₂ e	-4,43E0	3,79E-4	2,44E0	-1,99E0	1,87E-1	6,77E-2	MND	0E0	9,38E-3	5,43E0	0E0	-5,54E-1
GWP – fossil	kg CO ₂ e	3,46E-1	3,79E-4	5,57E-1	9,03E-1	1,88E-1	9,83E-4	MND	0E0	9,37E-3	2,5E-2	0E0	-5,54E-1
GWP – biogenic	kg CO ₂ e	-4,78E0	2,75E-7	1,88E0	-2,9E0	4,91E-5	6,67E-2	MND	0E0	6,81E-6	5,41E0	0E0	-9,35E-5
GWP – LULUC	kg CO ₂ e	5,85E-3	1,14E-7	1,3E-4	5,98E-3	8,58E-5	8,93E-7	MND	0E0	2,82E-6	4,84E-6	0E0	-1,26E-5
Ozone depletion pot.	kg CFC ₁₁ e	4,34E-8	8,9E-11	5,4E-8	9,75E-8	4,12E-8	1,51E-10	MND	0E0	2,2E-9	2,01E-9	0E0	-8,14E-8
Acidification potential	mol H ⁺ e	2,75E-3	1,59E-6	2,13E-3	4,89E-3	3,43E-3	5,26E-6	MND	0E0	3,94E-5	2,82E-4	0E0	-5,07E-4
EP-freshwater	kg Pe	5,67E-5	3,08E-9	8,6E-6	6,53E-5	1,17E-6	2,55E-8	MND	0E0	7,63E-8	3,34E-7	0E0	-4,39E-7
EP-marine	kg Ne	9,56E-4	4,79E-7	5,83E-4	1,54E-3	8,76E-4	1,63E-6	MND	0E0	1,19E-5	1,33E-4	0E0	-1,55E-4
EP-terrestrial	mol Ne	1,05E-2	5,29E-6	7,29E-3	1,77E-2	9,72E-3	1,56E-5	MND	0E0	1,31E-4	1,42E-3	0E0	-1,7E-3
POCP (“smog”)	kg NMVOCe	3,99E-3	1,7E-6	1,82E-3	5,81E-3	2,59E-3	4,97E-6	MND	0E0	4,21E-5	3,48E-4	0E0	-5,65E-4
ADP-minerals & metals	kg Sbe	6,08E-6	6,46E-9	1,15E-6	7,24E-6	2,26E-6	2,16E-8	MND	0E0	1,6E-7	3,29E-7	0E0	-1,44E-7
ADP-fossil resources	MJ	4,67E0	5,89E-3	9,61E0	1,43E1	2,68E0	1,57E-2	MND	0E0	1,46E-1	2,19E-1	0E0	-9,2E0
Water use ²⁾	m ³ e depr.	7,17E-2	2,19E-5	5,76E1	5,77E1	7,82E-3	2,5E-4	MND	0E0	5,42E-4	-1,94E-2	0E0	-8,08E-2

GWP-total: Global Warming Potential; **GWP-fossil:** Global Warming Potential fossil fuels; **GWP-biogenic:** Global Warming Potential biogenic; **GWP-LULUC:** Global Warming Potential land use and land use change; **ODP:** Depletion potential of the stratospheric ozone layer; **AP:** Acidification potential, Accumulated Exceedance; **EP-freshwater:** Eutrophication potential, fraction of nutrients reaching freshwater end compartment; See “additional requirements” for indicator given as PO4 eq. **EP-marine:** Eutrophication potential, fraction of nutrients reaching freshwater end compartment; **EP-terrestrial:** Eutrophication potential, Accumulated Exceedance; **POCP:** Formation potential of tropospheric ozone; **ADP-M&M:** Abiotic depletion potential for non-fossil resources (minerals and metals); **ADP-fossil:** Abiotic depletion potential for fossil resources; **WDP:** Water deprivation potential, deprivation weighted water consumption

Resource use

Parameter	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
RPEE	MJ	3,5E1	7,41E-5	2,63E0	3,76E1	2,63E-2	9,07E-4	MND	0E0	1,84E-3	5E-3	0E0	-1,37E-2
RPEM	MJ	5,17E1	0E0	2,05E1	7,11E1	0E0	0E0	MND	0E0	0E0	3,12E1	0E0	-3,12E1
TPE	MJ	8,79E1	7,41E-5	2,31E1	1,11E2	2,63E-2	9,07E-4	MND	0E0	1,84E-3	3,12E1	0E0	-3,12E1
NRPE	MJ	4,67E0	5,89E-3	8,76E0	1,34E1	2,68E0	3,19E-2	MND	0E0	1,46E-1	2,19E-1	0E0	-9,2E0
NRPM	MJ	0E0	0E0	8,51E-1	8,51E-1	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
TRPE	MJ	4,67E0	5,89E-3	9,61E0	1,43E1	2,68E0	3,19E-2	MND	0E0	1,46E-1	2,19E-1	0E0	-9,2E0
SM	kg	0E0	0E0	1,79E-3	1,79E-3	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
RSF	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
NRSF	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
W	m ³	2,9E-3	1,23E-6	1,18E-3	0,00408	4,18E-4	1,44E-5	MND	0E0	3,04E-5	4,39E-4	0E0	-1,94E-3

RPEE Renewable primary energy resources used as energy carrier; **RPEM** Renewable primary energy resources used as raw materials; **TPE** Total use of renewable primary energy resources; **NRPE** Non renewable primary energy resources used as energy carrier; **NRPM** Non renewable primary energy resources used as materials; **TRPE** Total use of non renewable primary energy resources; **SM** Use of secondary materials; **RSF** Use of renewable secondary fuels; **NRSF** Use of non renewable secondary fuels; **W** Use of net fresh water

End of life – Waste

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Hazardous waste	kg	2E-2	5,72E-6	8,71E-3	2,87E-2	2,73E-3	6,44E-5	MND	0E0	1,42E-4	0E0	0E0	-2,68E-3
Non-hazardous waste	kg	5,88E-1	6,33E-4	2,3E-1	8,19E-1	1,77E-1	2,05E-3	MND	0E0	1,57E-2	0E0	0E0	-1,89E-2
Radioactive waste	kg	2,27E-5	4,04E-8	1,41E-5	3,69E-5	1,86E-5	6,96E-8	MND	0E0	1E-6	0E0	0E0	-5,28E-6

End of life – output flow

Parameter	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
Components for reuse	kg	0E0	0E0	0E0	0E0	0E0	8,06E-2	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	8E-4	8E-4	0E0	1,11E-2	MND	0E0	0E0	0E0	0E0	0E0
Materials for energy recovery	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	1,72E0	0E0	0E0
Exported electric energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0
Exported thermal energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	0E0	0E0	0E0	0E0	0E0

Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009

Information describing the biogenic carbon content at the factory gate

Biogenic carbon content	Unit	Value
Biogenic carbon content in product	kg C	0,789
Biogenic carbon content in the accompanying packaging	kg C	0,018

Additional requirements

Greenhouse gas emission from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

National electricity grid	Unit	Value
Latvian electricity, residual mix (from Ecoinvent 3.6.)	kg CO2 -eq/kWh	0,42

Additional environmental impact indicators required in NPCR Part A for construction products

In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Parameter	Unit	A1	A2	A3	A1-A3	A4	A5	B1-B7	C1	C2	C3	C4	D
GWP	kg CO _{2e}	3,43E-1	3,75E-4	5,42E-1	8,86E-1	1,87E-1	1,05E-3	MND	0E0	9,29E-3	2,44E-2	0E0	-5,4E-1
ODP	kg CFC _{11e}	3,61E-8	7,08E-11	4,22E-8	7,84E-8	3,27E-8	1,22E-10	MND	0E0	1,75E-9	1,69E-9	0E0	-6,07E-8
POCP	kg SO _{2e}	1,78E-3	7,71E-7	1,5E-3	3,28E-3	2,61E-3	3,54E-6	MND	0E0	1,91E-5	1,95E-4	0E0	-4E-4
AP	kg PO ₄ ^{3e}	7,71E-4	1,56E-7	3,87E-4	1,16E-3	3,11E-4	2,84E-6	MND	0E0	3,85E-6	2,19E-4	0E0	-6,61E-5
EP	kg C ₂ H _{4e}	2,96E-4	4,88E-8	9,66E-5	3,93E-4	7,44E-5	2,68E-7	MND	0E0	1,21E-6	4,06E-6	0E0	-3,57E-5
ADPM	kg Sbe	6,08E-6	6,46E-9	1,17E-6	7,26E-6	2,26E-6	2,16E-8	MND	0E0	1,6E-7	3,29E-7	0E0	-1,44E-7
ADPE	MJ	4,67E0	5,89E-3	9,62E0	1,43E1	2,68E0	1,57E-2	MND	0E0	1,46E-1	2,19E-1	0E0	-9,2E0
GWP-IOBC	kg CO _{2e}	3,46E-1	3,79E-4	5,57E-1	9,03E-1	1,88E-1	9,83E-4	MND	0E0	9,37E-3	2,5E-2	0E0	-5,54E-1

GWP Global warming potential; **ODP** Depletion potential of the stratospheric ozone layer; **POCP** Formation potential of tropospheric photochemical oxidants; **AP** Acidification potential of land and water; **EP** Eutrophication potential; **ADPM** Abiotic depletion potential for non fossil resources; **ADPE** Abiotic depletion potential for fossil resources; **GWP-IOBC** Global warming potential calculated according to the principle of instantaneous oxidation.

Hazardous substances

The declaration is based upon reference to threshold values and/or test results and/or material safety data sheets provided to EPD verifiers. Documentation available upon request to EPD owner.

- The product contains no substances given by the REACH Candidate list or the Norwegian priority list.
- The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by weight.
- The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.
- The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforskiften, Annex III), see table.

Indoor environment

The product meets the requirements for low emissions.

Carbon footprint

Carbon footprint has not been worked out for the product.

Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declaration. Principles and procedures

ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines

EN 15804:2012+A2:2019 Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products

ISO 21930:2007 Sustainability in building construction - Environmental declaration of building products

The Norwegian EPD Foundation/EPD-Norge, General Programme Instructions 2019. Version 3.0 dated 2019.04.24.

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