Environmental Product Declaration

EPD®
THE INTERNATIONAL EPD® SYSTEM

ECO PLATFORM EPD VERIFIED

EPD of multiple products, based on the average results of the product group.
In Accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

Birch Plywood

from

Stiga RM

STIGA RM

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	EPD-IES- 0017548:001
Publication date:	2025-03-11
Valid until:	2030-03-11

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

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Birch Plywood Mill

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General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
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Accountabilities for PCR, LCA and independent, third-party verification

Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): *PCR 2019:PCR 2019:14 Construction products (EN 15804:A2) (1.3.4) C-PCR-006 Wood and wood-based products for use in construction (EN 16485:2014) (2021-11-08) and UN CPC 3143 Particle board and similar board of wood or other ligneous materials*

PCR review was conducted by: *IVL Swedish Environmental Research Institute Secretariat of the International EPD® System*

Life Cycle Assessment (LCA)

LCA accountability: *Dr. Ing. Kaspars Zudrags, SIA BM Certification*

Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

☒ EPD verification by individual verifier

Third-party verifier: *Sonia Valdivia*

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD: Stiga RM SIA
Adress: Meistaru street 1, Kuldiga, LV-3301, Latvia.
Contact: sales@stigarm.lv

Description of the organisation: Stiga RM is one of the leading timber companies in Latvia, uniting six group companies under a single brand, successfully operating in several areas – logging, woodworking, metalworking, as well as timber transportation, and real estate development. By implementing targeted investments in development and high-value-added products, we have made it one of our priorities to modernize production and introduce new technologies at all levels of the group, which will guarantee also future growth. Continuous improvement and automation of production processes also ensure better working conditions and a modern working environment for factory workers.

For additional information about Stiga RM please visit the company web site at https://stigarm.lv/.
Product-related or management system-related certifications: Stiga RM manufacturing processes comply with international standards – ISO 50001:2018. Company have implemented and maintains the Chain of Custody management system in accordance with the requirements of the standards FSC (TT-COC-005316) and PEFC (BMCERT-PEFC-COC-00176).
Name and location of production site(s): Stiga RM SIA, Meistaru street 1, Kuldīga, LV-3301, Latvia.

Product information

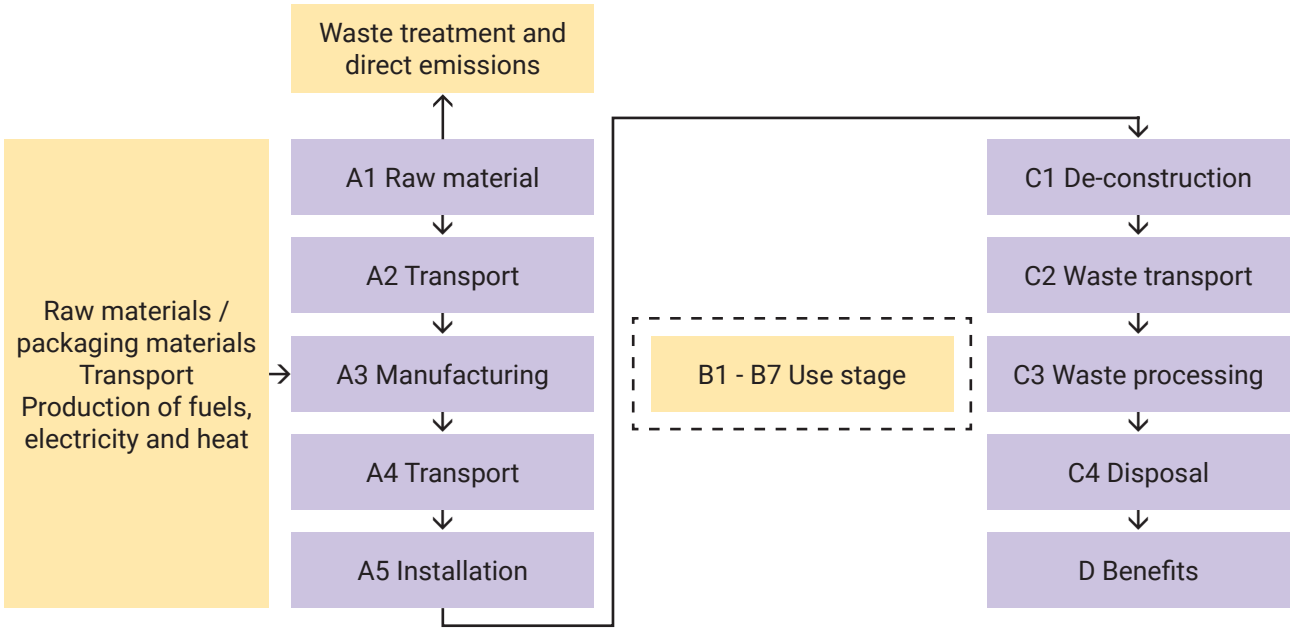
Product name: Birch plywood uncoated grade S, BB, CP, C.
Product description: Sanded on both faces, 100% birch plywood, durable and easy to work with. Plywood is composed of 1.5 mm thick birch veneers. Waterproof glue (WBP) is used in production. Grain direction of adjacent plies is perpendicular.

UN CPC code: 314 Boards and panels.
Geographical scope: Stiga RM selling of its products worldwide.

LCA information

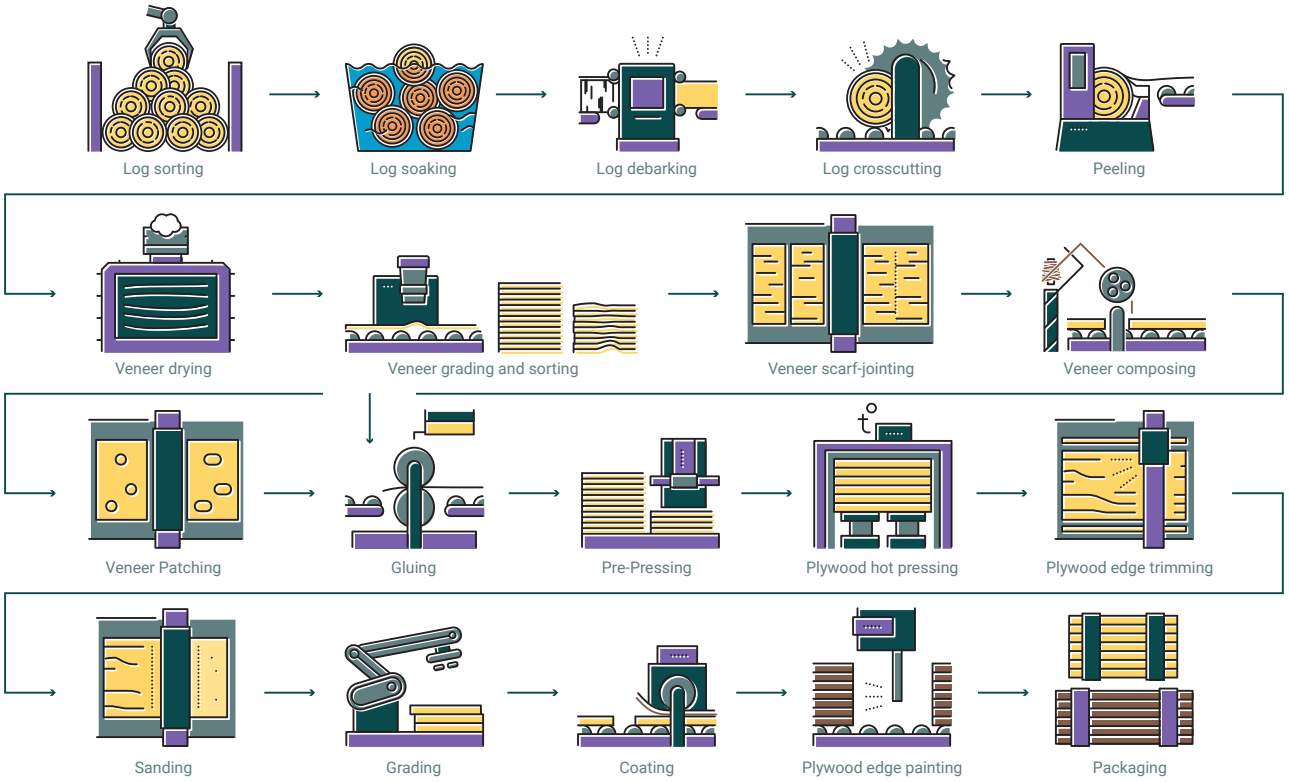
Declared unit: 1m^3 of birch plywood with density 678 kg/m^3 (conversion factor to mass – 678).
Reference service life: >10 years.
Time representativeness: 2023.01.01 – 2023.12.31.
Database(s) and LCA software used: One Click LCA version: 0.36.0, database version: 7.6, Ecoinvent 3.10
Description of system boundaries: EPD type B. Cradle to gate with options, modules A4, A5, C1–C4, module D
Climate impact of the electricity used in the manufacturing process: 0.38 kg CO_2 eq./kWh (using the GWP-GHG indicator).

System diagram:



More information: All relevant inputs and outputs from each unit process that have available data are considered in the calculation. No single unit process is disregarded if it accounts for more than 1% of the total mass or energy flows. Additionally, the total neglected input and output flows for each module do not surpass 5% of the energy usage or mass.
EN 15804 reference package EF 3.1.
Target group: business to business.
Cut-off criteria: the <1% due difficulties to attributing and minor environmental impacts.
A1: Raw materials, birch wood, phenol formaldehyde resin glue and coating
A2: Raw material transport
A3: Electricity climate impact 0.38 kg CO2 eq./kWh.
A4: Transport scenarios include EURO 5 truck transport for 100km.
A5: The energy consumption of A5 and C1 model is considered negligible and module A5 includes only packaging utilization.
B1-B7 are not part of the system
C1: Deconstruction (building machine 6.8 kWh assumed).
C2: Transport to waste treatment site after dismantling using EURO 5 truck average (50 km assumed).
C3: Assumed as 90% of plywood is incinerating with energy recovery.
C4: Assumed as 10% of plywood goes to landfill.
D: Modelled as 90% of plywood is incinerating with energy recovery.

Plywood Manufacturing Process



The birch logs are debarked and cut into shorter lengths. Then, they are rotated on a lathe, and a sharp blade peels 1.5mm veneers. The veneers are then dried in a kiln to reduce their moisture content, preventing warping and ensuring proper bonding in later stages.

The dried veneers are sorted, and defects are removed or patched. Next, the veneers are coated with phenol formaldehyde resin adhesive. The coated veneers are then laid up in alternating grain directions, which gives the plywood its strength and dimensional stability. This stack of veneers is then pressed together under high pressure and temperature in a hydraulic hot press. This process cures the adhesive and bonds the veneers together, creating a solid sheet of plywood.

The pressed plywood sheets are then trimmed to the desired dimensions and sanded to achieve a smooth surface and laminating with phenol formaldehyde coating. Finally, the finished plywood sheets are inspected for any defects or inconsistencies, ensuring they meet the required standards.

Infrastructure/capital goods are not included.

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X
Geography	EU												EU				EU
Specific data used	96.4%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

MND – modulus not declared

Content information

Product components	Weight, kg	Post-consumer material, weight–%	Biogenic material, weight–% and kg C/kg
Birch roundwood	582	0	100%, 0.5
Glue	96	0	0
TOTAL	678		
Packaging materials	**Weight, kg**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Plastic	0.04	>0.01	0
Corrugated board	2.8	0.41	0.43
Particleboard	2.3	0.34	0.46
Metal	0.5	0.07	0
TOTAL	5.64	0.83%	

The product does not contain substances that can be included in the “Candidate List of Substances of Very High Concern for Authorisation”.

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804:2012 +A2:2019

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	-7.50E+02	7.41E+00	4.23E+00	2.45E+00	7.34E+00	9.78E+02	1.08E+02	-5.26E+02
GWP-fossil	kg CO_2 eq.	3.64E+02	7.41E+00	1.01E-01	2.45E+00	7.33E+00	4.70E+00	1.04E+00	-5.24E+02
GWP-biogenic	kg CO_2 eq.	-1.12E+03	1.18E-03	4.13E+00	1.95E-04	1.17E-03	9.73E+02	1.07E+02	-1.19E+00
GWP-luluc	kg CO_2 eq.	3.24E+00	2.97E-03	1.01E-04	2.13E-04	2.94E-03	1.38E-02	5.47E-04	-3.40E-01
ODP	kg CFC 11 eq.	2.49E-05	1.09E-07	7.07E-10	3.75E-08	1.08E-07	7.81E-08	2.59E-08	-4.53E-06
AP	mol H^+ eq.	1.79E+00	2.53E-02	3.70E-04	2.21E-02	2.50E-02	2.37E-02	6.81E-03	-3.77E+00
EP-freshwater	kg P eq.	4.00E-02	6.77E-05	3.81E-06	8.62E-06	6.70E-05	4.33E-04	2.06E-05	-3.07E-02
EP-marine	kg N eq.	4.34E-01	8.19E-03	8.84E-05	1.03E-02	8.10E-03	3.27E-03	3.93E-03	-4.45E-01
EP-terrestrial	mol N eq.	4.59E+00	9.03E-02	8.43E-04	1.12E-01	8.93E-02	3.70E-02	2.80E-02	-5.20E+00
POCP	kg NMVOC eq.	2.12E+00	3.72E-02	2.53E-04	3.35E-02	3.68E-02	1.23E-02	1.11E-02	-1.64E+00
ADP-minerals&metals*	kg Sb eq.	3.52E-03	2.06E-05	9.23E-07	8.79E-07	2.04E-05	1.15E-05	2.48E-06	-2.95E-04
ADP-fossil*	MJ	7.67E+03	1.07E+02	9.31E-01	3.21E+01	1.06E+02	1.07E+02	2.18E+01	-6.42E+03
WDP*	m^3	2.87E+02	5.16E-01	2.74E-02	7.85E-02	5.11E-01	2.80E+00	1.03E-01	-8.13E+01
Acronyms	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; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption								

** Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*
The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Additional mandatory and voluntary impact category indicators

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG[1]	kg CO_2 eq.	3.64E+02	7.41E+00	1.01E-01	2.45E+00	7.33E+00	4.70E+00	1.04E+00	-5.24E+02

[1] This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero.

Resource use indicators

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	1.90E+04	1.41E+00	-3.94E+01	1.96E-01	1.40E+00	2.46E+01	-1.15E+03	-1.27E+03
PERM	MJ	1.53E+04	0.00E+00	3.96E+01	0.00E+00	0.00E+00	0.00E+00	1.15E+03	-5.30E-01
PERT	MJ	3.43E+04	1.41E+00	1.72E-01	1.96E-01	1.40E+00	2.46E+01	3.27E-01	-1.27E+03
PENRE	MJ	6.20E+03	1.07E+02	-6.83E-01	3.21E+01	1.06E+02	1.06E+02	2.17E+01	-6.42E+03
PENRM	MJ	1.47E+03	0.00E+00	1.61E+00	0.00E+00	0.00E+00	8.28E-01	6.90E-02	2.06E+00
PENRT	MJ	7.67E+03	1.07E+02	9.31E-01	3.21E+01	1.06E+02	1.07E+02	2.18E+01	-6.42E+03
SM	kg	5.75E+00	4.57E-02	1.95E-03	1.33E-02	4.52E-02	4.66E-02	7.86E-03	1.32E+00
RSF	MJ	1.38E-02	5.80E-04	2.09E-05	3.48E-05	5.74E-04	7.31E-05	2.46E-04	-3.25E-03
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	5.24E+00	1.55E-02	6.67E-04	2.08E-03	1.54E-02	8.84E-02	-2.48E-01	-4.56E+00
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water								

Waste indicators

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
HW	kg	2.12E+01	1.83E-01	9.40E-03	3.58E-02	1.81E-01	3.21E-01	3.65E-02	-4.47E+01
NHW	kg	5.01E+02	3.39E+00	3.63E-01	4.90E-01	3.36E+00	2.03E+01	3.65E+02	-1.27E+03
RW	kg	9.62E-03	2.32E-05	4.51E-06	3.52E-06	2.30E-05	7.50E-04	5.45E-06	-1.73E-02
Acronyms	HW = Hazardous waste disposed; NHW = Non-hazardous waste disposed; RW = Radioactive waste disposed								

Output flow indicators

Results per functional or declared unit									
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**C1**	**C2**	**C3**	**C4**	**D**
Material for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery	kg	0,00E+00	0,00E+00	3,39E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	2,30E+00	0,00E+00	0,00E+00	6,10E+02	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	4,00E+00	0,00E+00	0,00E+00	1,08E+03	0,00E+00	0,00E+00
Components for re-use	kg	0,00E+00	0,00E+00	2,30E+01	0,00E+00	0,00E+00	6,11E+03	0,00E+00	0,00E+00

References

General Programme Instructions of the International EPD® System. Version 5.0.
PCR 2019:14 Construction products (EN 15804:A2) (1.3.4).
C-PCR-006 Wood and wood-based products for use in construction (EN 16485:2014) (2021-11-08).
ISO 14020:2023 Environmental statements and programmes for products.
Principles and general requirements.
ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations.
Principles and procedures.
ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.
ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.
EN 15804:2012+A2:2019 Sustainability of construction works – Environmental product declarations –
Core rules for the product category of construction products.
EN 16449:2014 Wood and wood-based products – Calculation of the biogenic carbon content of wood
and conversion to carbon dioxide.
EN 16485:2014 Round and sawn timber. Environmental Product Declarations. Product category rules
for wood and wood-based products for use in construction.
LCA background report 31.10.2024.

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