

# Environmental Product Declaration



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

**SyPly Plywood uncoated, SyPly Plywood coated  
smooth, SyPly Plywood coated meshed**

from

**SYKTYVKAR PLYWOOD MILL LTD**



Programme:

The International EPD® System, [www.environdec.com](http://www.environdec.com)

Programme operator:

EPD International AB

EPD registration number:

S-P-02302

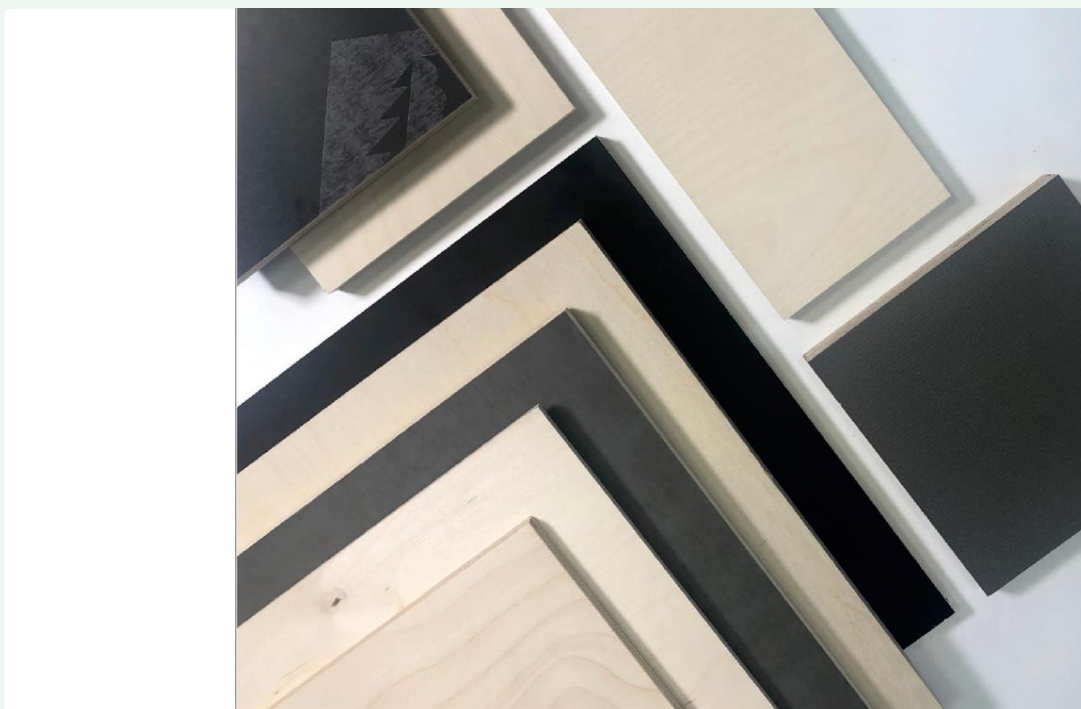
Publication date:

2023-01-09

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2028-01-08

*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](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR)</b>
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): 2019:14 Construction products, version 1.2
c-PCR-006 Wood and wood-based products for use in construction, version 2019-12-20
PCR review was conducted by: Martin Erlandsson, IVL Swedish Environmental Research Institute, <a href="mailto:martin.erlandsson@ivl.se">martin.erlandsson@ivl.se</a>
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: CIS Center LCA team
<b>Third-party verification</b>
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:
<input checked="" type="checkbox"/> EPD verification by individual verifier
Third-party verifier: Dr Hüdai Kara, Metsims Sustainability Consulting ( <a href="http://www.metsims.com">www.metsims.com</a> )
Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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:** SYKTYVKAR PLYWOOD MILL LTD

**Contact:** Russia, 167026, Komi Republic,  
Syktyvkar, Ukhtinskoe ave., 66  
+7 (8212) 29-38-45  
<https://www.plypan.com/>

### Description of the organisation:

Syktyvkar Plywood Mill LTD is one of the largest Russian manufacturers of wood based panels. It has held leading positions for over 45 years.

The mill offers consumers a large variety of high-quality plywood products, premium class laminated chipboard with unique embossing, a wide range of decors and perfectly matched edgebands.

The company's mission is to build its business based on efficient, reliable and safe production and a responsible attitude to social and environmental problems. The company follows global trends in the furniture industry and strives to be a unique product manufacturer in the global market.

### Product-related or management system-related certifications:

SYKTYVKAR PLYWOOD MILL LTD production site is certified according to the ISO 9001.

The company strives to confirm the quality and safety of its products through broad range of certification, which can be accessed at the manufacturer's website -

<https://www.syply.com/syply/certificates/>

### Name and location of production site(s):

SYKTYVKAR PLYWOOD MILL LTD production located in the most wood-bearing base, in Syktyvkar, Komi Republic, Russia. For the production, the best wood is selected from the taiga forests and birch groves of the Republic of Komi, Tatarstan and Udmurtia, the Perm Territory, the Arkhangelsk, Volgograd, Kirov and Kostroma regions.

## Product information

### Product name:

Plywood (3 types):

- Uncoated
- Coated, smooth
- Coated, meshed

Classification of the Plywood trademarks in a table below is given.

Plywood uncoated	Plywood coated, smooth	Plywood coated, meshed
SyPly BIRCH Top	SyPly REGULAR	SyPly ANTISLIP
SyPly BIRCH Middle	SyPly COLOR	SyPly ANTISLIP COLOR
SyPly BIRCH Low	SyPly LOGO	SyPly HEXA
SyPly INTERIOR	SyPly LOGO customer	SyPly DIAMOND
SyPly COMBI TWIN	SyPly PRIMER	SyPly Transport
	SyPly DESIGN	SyPly Carat
		SyPly SMART*
		SyPly ProFFit*

\*the SyPly SMART and SyPly ProFFit can be both coated, smooth and coated, meshed.

### Product identification:

Plywood produced according to international standards and specially developed specifications:

- TS 16.21.12-001-44769167-2020
- GOST 3916.1-2018

### Product description:

The Environmental Product Declaration (EPD<sup>®</sup>) describes the environmental impacts of 1m<sup>3</sup> of 100% birch plywood:

1. Uncoated plywood
2. Coated smooth plywood (plywood covered with phenolic film).
3. Coated meshed plywood (covered with a phenolic film, on which an imprint is made to give it anti-slip properties).

Plywood are commonly used in building, monolithic house building, transport machinery, in production, furniture manufacture, playground, equipment, shipbuilding, exterior design, interior design, packaging, souvenir products and other applications.

### Specification of the product

Main characteristics of the representative product SyPly BIRCH Middle, 18.0 mm in a table below are given. Specifications for all the product included in the EPD can be accessed through the SyPly web-site: <https://www.syply.com/syply/certificates/>

Essential characteristics	Performance	Harmonized technical specification
Bending strength	F 35 /35	EN 636:2012 +A:2015, Table 1
Modulus of elasticity	E 90/50	EN 636:2012 +A:2015, Table 2
Bonding quality	Class 3 (636-3S)	EN 636:2012 +A:2015, EN 314-3: 1993
Release of formaldehyde	E1	EN 636:2012 +A:2015, Table 3
Reaction to fire (the thickness > 9 mm)	D-s2,d0; Dfl-s1	EN 13986:2004+A1:2015, Table 8

Detailed description of all of the plywood under the EPD and more information about the application area of each of the trademarks see on the web site: <https://www.syply.com/syply/plywood-products/>

### Formaldehyde emissions

Formaldehyde emissions during the use of finished products are minimal and do not exceed the minimum standardized limits.

Plywood type	Formaldehyde release, mg/m <sup>2</sup> * h
Plywood uncoated	0.46
Plywood coated, smooth	0.59
Plywood coated, meshed	0.59

**UN CPC code:** 4412

**Geographical scope:** Russia

For more information about geographical scope at every stage of the Plywood lifecycle see the table on page 6 of the EPD.

### LCA information

**Functional unit / declared unit:** 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>.

**Reference service life:** According to research results and experience, glued timber products, such as plywood, will have around the same service life expectations than solid wood in dry and moderately humid conditions. If installed properly and moisture exposure is low or moderate, the service life of the plywood board is at least 100 years.

**Time representativeness:**

Primary data from the Plywood manufacturing mill is collected for 2021 year. Time representativeness of the secondary data was estimated mainly very good. In a single case, data older than 10 years was used due to lack of more updated data. It was estimated that this has no significant impact on the results.

**Database(s) and LCA software used:**

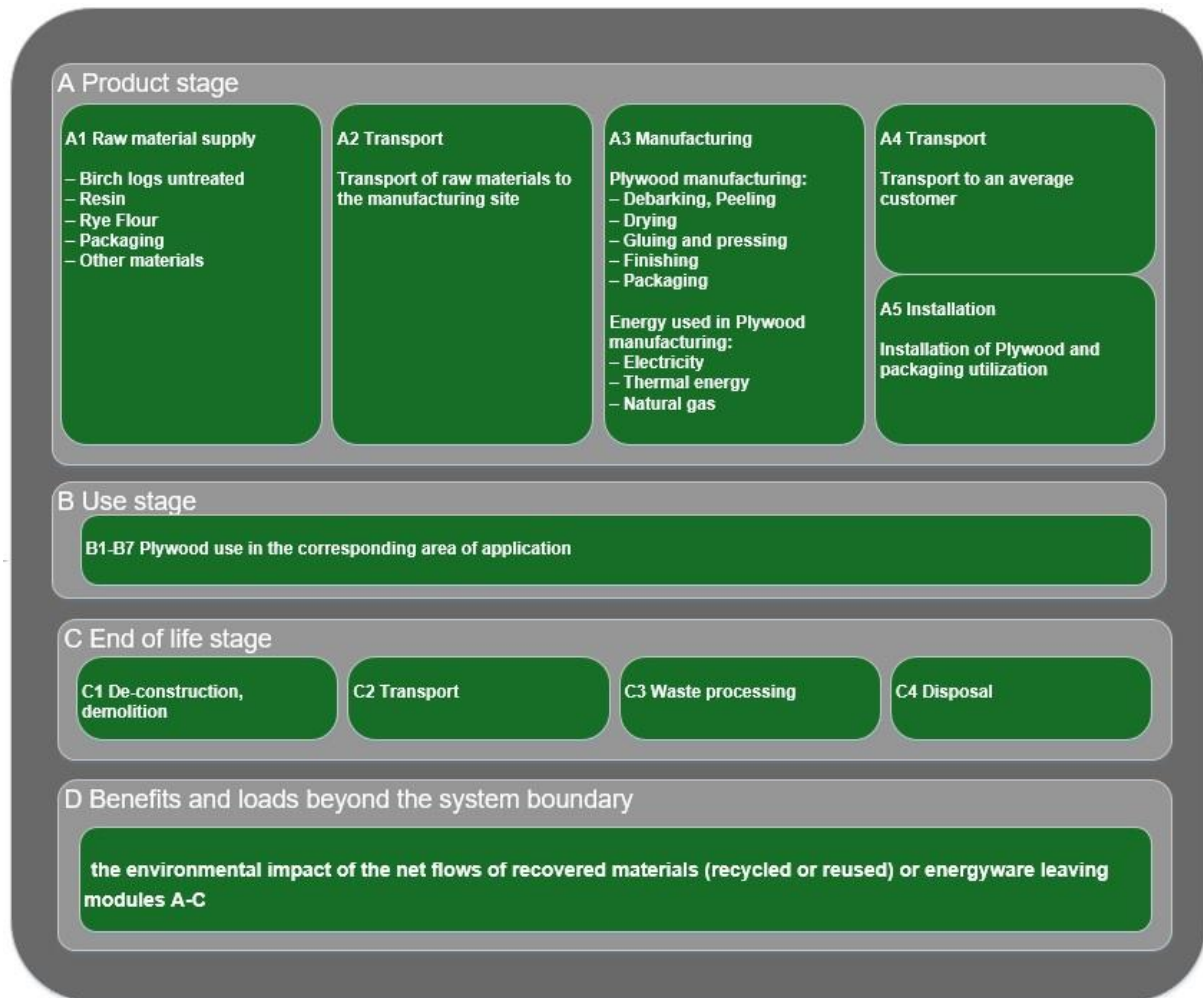
The LCA was modelled using the LCA software GaBi (version 10.6.2.9) and corresponding database (content version 2021.2) provided by Sphera.

**Description of system boundaries:**

The system boundaries is a “Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules of A4-A5)”. Thus, Plywood lifecycle stages are included in the LCA:

- Product stage (A1-A3);
- Construction process stage (A4-A5);
- End-of-life (C1-C4);
- Benefits and loads beyond the system boundaries (Module D).

**System diagram:**



### Estimates and Assumptions

In the underlying LCA study, the following assumptions were made:

- The main incoming material flows were taken for modelling the life cycle of Plywood. The mass of the flows excluded from the modelling does not exceed 1% of the total mass of the corresponding production system and 5% of the mass of the flows of the main production process. The contribution to the environmental impact of the excluded flows does not exceed 1% of the total impact of the Plywood life cycle.
- It is assumed that datasets with a representative year different from the representative year for the primary data would be appropriate for modelling the Plywood life cycle and would not significantly affect the results of the study.
- In the absence of datasets for a particular material (phenolic paper), datasets for the major active substances in the corresponding material were taken and modelled based on the content of the corresponding substances in the phenolic paper.
- Landfill disposal of the packaging (MDF) at the installation stage (A5) and the SyPly plywood at the Disposal stage (C4) was assumed as a most representative scenario.

### Allocation

To allocate raw materials consumption by each of the type of Plywood allocation by mass was applied. Allocations in the LCA datasets used are documented accordingly in the datasets themselves.

### LCA practitioner:

CIS Center LCA team



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Olga Reshetar (o.reshetar@ciscenter.org)

Alexander Derbenev (a.derbenev@ciscenter.org)

**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	RU	RU	RU	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU	EU
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	Not relevant			-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Content information

### Representative Plywood product composition by type, Weight-%

Product components	SyPly Plywood, uncoated	Weight biogenic carbon, kg C/F.U.	SyPly Plywood, coated smooth	Weight biogenic carbon, kg C/F.U.	SyPly Plywood, coated meshed	Weight biogenic carbon, kg C/F.U.
Wood (birch)	86.81	275.29	84.50	267.96	84.92	269.30
Resins	11.86	0	11.86	0	11.86	0
Overlay (phenolic film)	0	0	2.31	0	1.89	0
Others	1.33	0	1.33	0	1.33	0
TOTAL	100	275.29	100	267.96	100	269.30

Packaging materials	SyPly Plywood, uncoated	SyPly Plywood, coated smooth	SyPly Plywood, coated meshed
Fibreboard, kg per F.U.	6.42	6.76	5.53
Plastic film, kg per F.U.	0.83	1.04	0.85

No substances that appear in the REACH candidate list of SVHC (Candidate List of Substances of Very High Concern) are present or used in the product concerning this EPD.

## Environmental Information

Environmental impact results of weighted average SyPly plywood are presented below.  
Results per 3 groups of plywood - uncoated; coated smooth; coated meshed, presented in “Additional information” section.

### Plywood (weighted average)

#### Potential environmental impact – mandatory indicators according to EN 15804

Results per 1 m <sup>3</sup> of plywood with average density of 680 kg/m <sup>3</sup>									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	4.89E+02	9.70E+01	5.54E-01	0.00E+00	9.08E+00	2.90E+00	1.08E+02	-5.32E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	3.08E+01	5.62E+00	4.37E+00	0.00E+00	5.25E-01	2.29E-01	9.97E+01	-8.89E-02
GWP-luluc	kg CO <sub>2</sub> eq.	2.28E-01	3.72E-01	5.49E-04	0.00E+00	3.48E-02	8.85E-03	1.00E-01	-1.07E-03
GWP-total	kg CO <sub>2</sub> eq.	5.20E+02	1.03E+02	4.93E+00	0.00E+00	9.61E+00	3.13E+00	2.08E+02	-5.42E+00
ODP	kg CFC 11 eq.	1.73E-09	1.98E-11	1.30E-13	0.00E+00	1.85E-12	7.84E-12	2.81E-11	-8.94E-14
AP	mol H <sup>+</sup> eq.	2.86E+00	3.25E-01	2.18E-03	0.00E+00	3.04E-02	1.43E-02	4.02E-01	-2.80E-02
EP-freshwater	kg P eq.	7.59E-04	1.92E-04	3.39E-06	0.00E+00	1.81E-05	6.66E-06	7.37E-04	-2.01E-06
EP-marine	kg N eq.	7.89E-01	1.53E-01	3.42E-03	0.00E+00	1.43E-02	6.66E-03	1.10E-01	-5.65E-03
EP-terrestrial	mol N eq.	1.04E+01	1.71E+00	7.26E-03	0.00E+00	1.60E-01	7.32E-02	1.18E+00	-6.17E-02
POCP	kg NMVOC eq.	2.26E+00	2.96E-01	2.89E-03	0.00E+00	2.77E-02	1.79E-02	3.30E-01	-1.58E-02
ADP-minerals&metals*	kg Sb eq.	8.75E-05	9.68E-06	4.00E-08	0.00E+00	9.07E-07	3.29E-06	8.66E-06	-3.76E-07
ADP-fossil*	MJ	8.55E+03	1.27E+03	6.83E+00	0.00E+00	1.19E+02	5.35E+01	1.47E+03	5.96E+01
WDP*	m <sup>3</sup>	8.41E+02	4.30E+00	1.73E-01	0.00E+00	4.02E-01	1.05E+00	3.76E+01	-9.19E-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.

## Potential environmental impact – additional mandatory and voluntary indicators

### Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	4.89E+02	9.73E+01	5.52E-01	0.00E+00	9.09E+00	2.91E+00	1.08E+02	-5.33E+00

## Use of resources

### Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup> functional or declared unit

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2.93E+04	8.43E+01	4.30E-01	0.00E+00	7.89E+00	5.38E+00	9.31E+01	-6.72E+00
PERM	MJ	9.54E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	3.47E+04	8.43E+01	4.30E-01	0.00E+00	7.89E+00	5.38E+00	9.31E+01	-6.72E+00
PENRE	MJ	9.38E+03	1.28E+03	6.96E+00	0.00E+00	1.20E+02	5.50E+01	1.50E+03	-5.99E+01
PENRM	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
PENRT	MJ	9.38E+03	1.28E+03	6.96E+00	0.00E+00	1.20E+02	5.50E+01	1.50E+03	-5.99E+01
SM	kg	2.92E+02	0.00E+00	1.04E-01	0.00E+00	2.41E-01	6.29E-01	2.25E+01	-5.51E-01
RSF	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
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 <sup>3</sup>	8.42E+02	4.30E+00	1.73E-01	0.00E+00	4.02E-01	1.05E+00	3.76E+01	-9.19E-01

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

<sup>1</sup> 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<sub>2</sub> is set to zero.

## Waste production and output flows

### Waste production

Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Hazardous waste disposed	kg	2.22E-06	5.60E-09	2.51E-08	0.00E+00	5.23E-10	7.42E-10	4.54E-06	-7.89E-09	2.22E-06
Non-hazardous waste disposed	kg	4.54E+00	2.09E-01	4.90E+00	5.65E-01	1.95E-02	1.64E-02	8.55E+02	-1.53E-02	4.54E+00
Radioactive waste disposed	kg	3.02E-01	1.61E-03	4.92E-05	1.13E+00	1.51E-04	4.23E-04	1.07E-02	-7.39E-06	3.02E-01

### Output flows

Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	1.69E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	2.26E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	1.49E+03	0.00E+00	0.00E+00	2.82E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.49E+03
Exported energy, electricity	MJ	0.00E+00	0.00E+00	8.17E-01	3.39E+00	0.00E+00	0.00E+00	1.78E+01	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	4.36E-02	3.95E+00	0.00E+00	0.00E+00	9.53E-01	0.00E+00	0.00E+00

## Additional information

### Plywood, uncoated

#### Potential environmental impact – mandatory indicators according to EN 15804

Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	4.74E+02	1.05E+02	9.40E-01	0.00E+00	1.54E+01	4.92E+00	1.84E+02	-9.03E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	2.37E+01	6.10E+00	7.42E+00	0.00E+00	8.92E-01	3.89E-01	1.69E+02	-1.51E-01
GWP-luluc	kg CO <sub>2</sub> eq.	2.18E-01	4.04E-01	9.31E-04	0.00E+00	5.90E-02	1.50E-02	1.70E-01	-1.81E-03
GWP-total	kg CO <sub>2</sub> eq.	4.98E+02	1.12E+02	8.36E+00	0.00E+00	1.63E+01	5.32E+00	3.53E+02	-9.18E+00
ODP	kg CFC 11 eq.	1.65E-09	2.15E-11	2.20E-13	0.00E+00	3.14E-12	1.33E-11	4.77E-11	-1.52E-13
AP	mol H <sup>+</sup> eq.	2.70E+00	3.53E-01	3.71E-03	0.00E+00	5.15E-02	2.42E-02	6.82E-01	-4.75E-02
EP-freshwater	kg P eq.	6.52E-04	2.09E-04	5.76E-06	0.00E+00	3.06E-05	1.13E-05	1.25E-03	-3.42E-06
EP-marine	kg N eq.	7.13E-01	1.66E-01	5.81E-03	0.00E+00	2.43E-02	1.13E-02	1.86E-01	-9.59E-03
EP-terrestrial	mol N eq.	9.57E+00	1.85E+00	1.23E-02	0.00E+00	2.71E-01	1.24E-01	2.00E+00	-1.05E-01
POCP	kg NMVOC eq.	2.05E+00	3.22E-01	4.91E-03	0.00E+00	4.70E-02	3.04E-02	5.60E-01	-2.68E-02
ADP-minerals&metals*	kg Sb eq.	8.49E-05	1.05E-05	6.78E-08	0.00E+00	1.54E-06	5.58E-06	1.47E-05	-6.38E-07
ADP-fossil*	MJ	8.16E+03	1.38E+03	1.16E+01	0.00E+00	2.02E+02	9.08E+01	2.50E+03	-1.01E+02
WDP*	m <sup>3</sup>	8.27E+02	4.67E+00	2.93E-01	0.00E+00	6.82E-01	1.78E+00	6.37E+01	-1.56E+00
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.

## Potential environmental impact – additional mandatory and voluntary indicators

### Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG <sup>2</sup>	kg CO <sub>2</sub> eq.	4.75E+02	1.06E+02	9.40E-01	0.00E+00	1.54E+01	4.93E+00	1.84E+02	-9.03E+00

## Use of resources

### Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup> functional or declared unit

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2.69E+04	9.16E+01	7.29E-01	1.34E+01	9.12E+00	1.58E+02	-1.14E+01	1.34E+01
PERM	MJ	9.54E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	2.69E+04	9.16E+01	7.29E-01	1.34E+01	9.12E+00	1.58E+02	-1.14E+01	1.34E+01
PENRE	MJ	8.97E+03	1.39E+03	1.18E+01	2.03E+02	9.32E+01	2.55E+03	-1.02E+02	2.03E+02
PENRM	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
PENRT	MJ	8.97E+03	1.39E+03	1.18E+01	2.03E+02	9.32E+01	2.55E+03	-1.02E+02	2.03E+02
SM	kg	8.27E+02	0.00E+00	2.93E-01	6.82E-01	1.78E+00	6.37E+01	-1.56E+00	6.82E-01
RSF	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
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 <sup>3</sup>	8.27E+02	4.67E+00	2.93E-01	6.82E-01	1.78E+00	6.37E+01	-1.56E+00	6.82E-01

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

<sup>2</sup> 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<sub>2</sub> is set to zero.

## Waste production and output flows

### Waste production

Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.07E-06	6.08E-09	4.26E-08	0.00E+00	0.00E+00	8.88E-10	1.26E-09	7.71E-06	-1.34E-08
Non-hazardous waste disposed	kg	4.24E+00	2.27E-01	8.31E+00	0.00E+00	0.00E+00	3.31E-02	2.79E-02	1.45E+03	-2.59E-02
Radioactive waste disposed	kg	2.97E-01	1.75E-03	8.34E-05	0.00E+00	0.00E+00	2.56E-04	7.18E-04	1.82E-02	-1.25E-05

### Output flows

Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	B1	C1	C2	C3	C4	D
Components for re-use	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	0.00E+00
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	0.00E+00
Materials for energy recovery	kg	1.90E+02	0.00E+00	0.00E+00	0.00E+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	1.46E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.19E+01	0.00E+00
Exported energy, thermal	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	0.00E+00

# Plywood, coated smooth

## Potential environmental impact – mandatory indicators according to EN 15804

Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	4.98E+02	8.46E+01	3.43E-01	0.00E+00	5.61E+00	1.80E+00	6.70E+01	-3.29E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	3.51E+01	4.90E+00	2.71E+00	0.00E+00	3.25E-01	1.42E-01	6.18E+01	-5.52E-02
GWP-luluc	kg CO <sub>2</sub> eq.	2.37E-01	3.25E-01	3.40E-04	0.00E+00	2.16E-02	5.48E-03	6.22E-02	-6.60E-04
GWP-total	kg CO <sub>2</sub> eq.	5.34E+02	8.98E+01	3.05E+00	0.00E+00	5.96E+00	1.94E+00	1.29E+02	-3.36E+00
ODP	kg CFC 11 eq.	1.78E-09	1.73E-11	8.04E-14	0.00E+00	1.15E-12	4.86E-12	1.74E-11	-5.53E-14
AP	mol H <sup>+</sup> eq.	2.89E+00	2.84E-01	1.35E-03	0.00E+00	1.89E-02	8.84E-03	2.49E-01	-1.74E-02
EP-freshwater	kg P eq.	8.26E-04	1.68E-04	2.10E-06	0.00E+00	1.12E-05	4.12E-06	4.56E-04	-1.24E-06
EP-marine	kg N eq.	8.00E-01	1.33E-01	2.12E-03	0.00E+00	8.87E-03	4.12E-03	6.80E-02	-3.50E-03
EP-terrestrial	mol N eq.	1.05E+01	1.49E+00	4.50E-03	0.00E+00	9.88E-02	4.54E-02	7.30E-01	-3.83E-02
POCP	kg NMVOC eq.	2.29E+00	2.58E-01	1.79E-03	0.00E+00	1.72E-02	1.11E-02	2.05E-01	-9.79E-03
ADP-minerals & metals*	kg Sb eq.	8.92E-05	8.46E-06	2.48E-08	0.00E+00	5.61E-07	2.04E-06	5.35E-06	-2.33E-07
ADP-fossil*	MJ	8.79E+03	1.11E+03	4.22E+00	0.00E+00	7.36E+01	3.32E+01	9.12E+02	-3.69E+01
WDP*	m <sup>3</sup>	8.48E+02	3.75E+00	1.07E-01	0.00E+00	2.49E-01	6.51E-01	2.33E+01	-5.70E-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.



## Potential environmental impact – additional mandatory and voluntary indicators

### Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG <sup>3</sup>	kg CO <sub>2</sub> eq.	4.99E+02	8.49E+01	3.40E-01	0.00E+00	5.64E+00	1.80E+00	6.72E+01	-3.30E+00

## Use of resources

### Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	3.17E+04	7.36E+01	2.66E-01	0.00E+00	4.88E+00	3.33E+00	5.76E+01	-4.16E+00
PERM	MJ	9.54E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	4.12E+04	7.36E+01	2.66E-01	0.00E+00	4.88E+00	3.33E+00	5.76E+01	-4.16E+00
PENRE	MJ	9.63E+03	1.12E+03	4.31E+00	0.00E+00	7.43E+01	3.40E+01	9.30E+02	-3.71E+01
PENRM	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
PENRT	MJ	9.63E+03	1.12E+03	4.31E+00	0.00E+00	7.43E+01	3.40E+01	9.30E+02	-3.71E+01
SM	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
RSF	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
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 <sup>3</sup>	8.48E+02	3.75E+00	1.07E-01	0.00E+00	2.49E-01	6.51E-01	2.33E+01	-5.70E-01

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								
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<sup>3</sup> 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<sub>2</sub> is set to zero.

## Waste production and output flows

### Waste production

Results per 1 m <sup>3</sup> of plywood with average density of 680 kg/m <sup>3</sup>									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	2.89E-06	4.88E-09	1.56E-08	0.00E+00	3.24E-10	4.59E-10	2.81E-06	-4.89E-09
Non-hazardous waste disposed	kg	4.72E+00	1.82E-01	3.03E+00	1.00E+00	1.21E-02	1.02E-02	5.29E+02	-9.46E-03
Radioactive waste disposed	kg	3.05E-01	1.41E-03	3.04E-05	2.00E+00	9.33E-05	2.62E-04	6.64E-03	-4.57E-06

### Output flows

Results per 1 m <sup>3</sup> of plywood with average density of 680 kg/m <sup>3</sup>									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	3.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	0.00E+00	0.00E+00	4.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recovery	kg	1.90E+02	0.00E+00	0.00E+00	5.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	5.32E-01	6.00E+00	0.00E+00	0.00E+00	1.16E+01	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	7.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

## Plywood, coated meshed

### Potential environmental impact – mandatory indicators according to EN 15804

Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	4.89E+02	1.46E+02	3.43E-01	0.00E+00	5.61E+00	1.80E+00	6.70E+01	-3.29E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	3.27E+01	8.46E+00	2.71E+00	0.00E+00	3.25E-01	1.42E-01	6.18E+01	-5.52E-02
GWP-luluc	kg CO <sub>2</sub> eq.	2.05E-01	5.61E-01	3.40E-04	0.00E+00	2.16E-02	5.48E-03	6.22E-02	-6.60E-04
GWP-total	kg CO <sub>2</sub> eq.	5.23E+02	1.55E+02	3.05E+00	0.00E+00	5.96E+00	1.94E+00	1.29E+02	-3.36E+00
ODP	kg CFC 11 eq.	1.73E-09	2.98E-11	8.04E-14	0.00E+00	1.15E-12	4.86E-12	1.74E-11	-5.53E-14
AP	mol H <sup>+</sup> eq.	3.37E+00	4.90E-01	1.35E-03	0.00E+00	1.89E-02	8.84E-03	2.49E-01	-1.74E-02
EP-freshwater	kg P eq.	7.63E-04	2.90E-04	2.10E-06	0.00E+00	1.12E-05	4.12E-06	4.56E-04	-1.24E-06
EP-marine	kg N eq.	1.04E+00	2.30E-01	2.12E-03	0.00E+00	8.87E-03	4.12E-03	6.80E-02	-3.50E-03
EP-terrestrial	mol N eq.	1.32E+01	2.57E+00	4.50E-03	0.00E+00	9.88E-02	4.54E-02	7.30E-01	-3.83E-02
POCP	kg NMVOC eq.	2.96E+00	4.46E-01	1.79E-03	0.00E+00	1.72E-02	1.11E-02	2.05E-01	-9.79E-03
ADP-minerals & metals*	kg Sb eq.	8.73E-05	1.46E-05	2.48E-08	0.00E+00	5.61E-07	2.04E-06	5.35E-06	-2.33E-07
ADP-fossil*	MJ	8.59E+03	1.91E+03	4.22E+00	0.00E+00	7.36E+01	3.32E+01	9.12E+02	-3.69E+01
WDP*	m <sup>3</sup>	8.57E+02	6.48E+00	1.07E-01	0.00E+00	2.49E-01	6.51E-01	2.33E+01	-5.70E-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.

## Potential environmental impact – additional mandatory and voluntary indicators

### Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-GHG <sup>4</sup>	kg CO <sub>2</sub> eq.	4.90E+02	1.46E+02	3.40E-01	0.00E+00	5.64E+00	1.80E+00	6.72E+01	-3.30E+00

## Use of resources

### Results per 1 m<sup>3</sup> of plywood with average density of 680 kg/m<sup>3</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2.30E+04	1.27E+02	2.66E-01	0.00E+00	4.88E+00	3.33E+00	5.76E+01	-4.16E+00
PERM	MJ	9.54E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ	2.30E+04	1.27E+02	2.66E-01	0.00E+00	4.88E+00	3.33E+00	5.76E+01	-4.16E+00
PENRE	MJ	9.43E+03	1.93E+03	4.31E+00	0.00E+00	7.43E+01	3.40E+01	9.30E+02	-3.71E+01
PENRM	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
PENRT	MJ	9.43E+03	1.93E+03	4.31E+00	0.00E+00	7.43E+01	3.40E+01	9.30E+02	-3.71E+01
SM	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
RSF	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
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 <sup>3</sup>	8.57E+02	6.48E+00	1.07E-01	0.00E+00	2.49E-01	6.51E-01	2.33E+01	-5.70E-01

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

<sup>4</sup> 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<sub>2</sub> is set to zero.

## Waste production and output flows

### Waste production

Results per 1 m <sup>3</sup> of plywood with average density of 680 kg/m <sup>3</sup>									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Hazardous waste disposed	kg	2.55E-06	8.43E-09	1.56E-08	0.00E+00	3.24E-10	4.59E-10	2.81E-06	-4.89E-09
Non-hazardous waste disposed	kg	4.63E+00	3.14E-01	3.03E+00	0.00E+00	1.21E-02	1.02E-02	5.29E+02	-9.46E-03
Radioactive waste disposed	kg	3.08E-01	2.43E-03	3.04E-05	0.00E+00	9.33E-05	2.62E-04	6.64E-03	-4.57E-06

### Output flows

Results per 1 m <sup>3</sup> of plywood with average density of 680 kg/m <sup>3</sup>									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
Components for re-use	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
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	1.90E+02	0.00E+00	0.00E+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	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	5.32E-01	0.00E+00	0.00E+00	0.00E+00	1.16E+01	0.00E+00

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