ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A1*

Owner of the Declaration	**SWISS KRONO TEX GmbH & Co. KG**
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-KRO-20200203-IBD1-EN
Issue date	15.06.2021
Valid to	14.06.2026

SWISS KRONO OSB-Platten

SWISS KRONO Group

Institut Bauen und Umwelt e.V.

www.ibu-epd.com | https://epd-online.com

ECO PLATFORM EPD EN 15804 VERIFIED

1. General Information

SWISS KRONO Group

Programme holder
IBU – Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number
EPD-KRO-20200203-IBD1-EN

This declaration is based on the product category rules:
Wood based panels, 11.2017
(PCR checked and approved by the SVR)

Issue date
15.06.2021

Valid to
14.06.2026

Dipl. Ing. Hans Peters
(chairman of Institut Bauen und Umwelt e.V.)

Dr. Alexander Röder
(Managing Director Institut Bauen und Umwelt e.V.))

SWISS KRONO OSB panels

Owner of the declaration
SWISS KRONO TEX GmbH & Co. KG
Wittstocker Chaussee 1
16909 Heiligengrabe - Germany

Declared product / declared unit
1 cubic metre OSB panel

Scope:
This document relates to all OSB panels which are manufactured in the following SWISS KRONO GROUP factories:
SWISS KRONO TEX GmbH & Co. KG, Heiligengrabe, Germany
SWISS KRONO Kft., Vasarosnameny, Hungary
SWISS KRONO SAS, Sully Sur Loire, France
SWISS KRONO Sp. z o.o, Zary, Poland

The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.
The EPD was created according to the specifications of *EN 15804+A1*. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard *EN 15804* serves as the core PCR
Independent verification of the declaration and data according to *ISO 14025:2010*
☐ internally ☒ externally

Dr. Stefan Diederichs
(Independent verifier)

2. Product

2.1 Product description/Product definition

OSB panels (Oriented Strand Board – SWISS KRONO OSB) are adhesive-bonded, three-layer wood-based panels (flat-pressed panels) made of oriented scattered, longitudinal wood shavings (120 - 160 mm long strips of veneer), so-called strands in accordance with /EN13986/ and /EN 300/ OSB. Strands of a defined thickness and shape, mainly from round timber, are glued together in several layers. The orientation of the middle layer is at 90° to that of the covering layers. The OSB panels are glued with polymer diphenylmethane diisocyanate-based resin (PMDI adhesive) and manufactured in thicknesses from 6 to 40 mm. The declared product represents a mass-weighted average of the range produced. The fact that different quantities of different thicknesses are produced in the 4 factories is taken into account when calculating the average.EU regulation no. /305/2011/ of 9th March 2011 applies for putting the product on the market in the EU/EFTA (with the exception of Switzerland). The products require a declaration of performance in compliance with /EN 13986:2015/ Wood-based materials for use in construction - Characteristics, evaluation of conformity and marking, and CE labelling.
/EN 300:2006-09/, Oriented Strand Boards (OSB) - Definitions, classification and specifications. The respective national regulations apply to use.

2.2 Application

SWISS KRONO OSB panels conform to use classes 1 and 2 in accordance with /EN 1995-1-1/ and may therefore be used in wet environments and outdoors where not exposed to weathering. OSB boards can be deployed in load-bearing and stiffening structural elements.

2.3 Technical Data

Constructional data (OSB/3 - OSB/4)

Name	Value	Unit
Gross density /EN 323/	600 - 680	kg/m³
E-module (longitudinal) /EN 789/	4930 - 6780	N/mm²
E-module (transverse) /EN 789/	1980 - 2680	N/mm²
Elasticity tensile module (longitudinal) to /EN 789/	3800-4300	N/mm²
Elasticity tensile module (transverse) to /EN 789/	3000-3200	N/mm²
Material dampness at delivery /EN 322/	4 - 8	%
Thermal conductivity /EN 13986/	0.13	W/(mK)
Sound absorption coefficient frequency range 250-500 Hz /EN 13986/	0,1	
Sound absorption coefficient frequency range 1000-2000 Hz /EN 13986/	0,25	

The product's performance values according to the declaration of performance in relation to its main features in accordance with
/EN 13986:2015-06/ and /EN 300:2006-09/ apply.

2.4 Delivery status

OSB panels from the factories are available in the following dimensions:
Length: 1820 mm to 18000 mm
Width: 625 mm to 2800 mm
Thickness: 6 mm to 40 mm
Special formats are available on request.

2.5 Base materials/Ancillary materials

• Round timber (fresh timber), mainly pine, at SWISS KRONO OSB sensitive poplar, mainly PEFC- or FSC-certified, approx. 90%
• Binding agent: Diphenylmethane diisocyanate-based resin (PMDI adhesive), 2 - 4 %
• Water in the form of wood humidity, 4- 8 %
• Wax emulsion < 1 %

2.6 Manufacture

1) Debarking the wood
2) Cutting the roundwood to strands (small veneer-like strips)
3) Drying the damp strands from 100 % wood moisture to 3 % wood moisture
4) Grading the strands into surface layer, middle layer and fine material
5) Gluing the surface layer and middle layer strands with resin
6) Aligning the surface layer strands in the production direction; the middle layer strands are oriented at an angle of 90° to the surface layer
7) Pressing the strand cake in a continuous press
8) Trimming the OSBs along their long edges and cutting to length
9) Sanding the surfaces and mortising tongue and groove (optional).
10) Stacking the OSB and packing with cardboard packaging and plastic or steel bands. All manufacturing plants have an /ISO 9001/-compliant quality management system.

2.7 Environment and health during manufacturing

SWISS KRONO Group OSB factories are fully integrated wood-based materials plants with their own biomass heating or power plants. Production-related waste materials can thus be expediently thermally recycled.
All noise-emitting parts of the plant such as the chipping and debarking drums are capsuled by constructional measures.
German factory (/ISO 9001/; /ISO 14001/; /ISO 50001/).
Energy management is oriented towards the constant reduction of CO2 emissions at the factory site. This commitment was awarded the Federal State of Brandenburg's energy efficiency prize in 2019.
French factory (/ISO 9001/; /ISO 50001/)
Polish factory (/ISO 9001/; /ISO 14001/; /ISO 50001/)
Hungarian factory (/ISO 9001/)

2.8 Product processing/Installation

SWISS KRONO OSB boards can be worked with normal woodworking machinery or tools. The usual safety precautions as for processing solid wood are to be taken during processing (work gloves, dust masks when sanding and sawing).

2.9 Packaging

Paper, cardboard, polyethylene (PE) foils and plastic or steel bands are used as transport packaging.

2.10 Condition of use

The material composition for the period of use corresponds to the base materials specified in 2.6.

2.11 Environment and health during use

No hazards or impairments to health are to be expected if SWISS KRONO OSB panels are used normally and as intended.
According to the current state of knowledge, no hazards for water, air/the atmosphere and soil can arise if used as intended.

2.12 Reference service life

The service life of SWISS KRONO OSB panels depends on where they are deployed and is at least 50 years with correct use (according to the /BBSR table/).

2.13 Extraordinary effects

Fire
Fire
D-s2, d0 - in accordance with /EN 13986/ and /EN 13501-1/ Euro class D, smoke class s2, dripping class d0 (applies to products ≥ 9mm; ≥ 600 kg/m³).
Flue gas development/ Smoke density: Equivalent to the smoke development and smoke density of solid wood.
Toxicity of flue gases: Due to the transformation process on incineration, small quantities of hydrogen cyanide (prussic acid) are released under certain combustion conditions from the polyurethane (PUR) contained in the panels. Due to the gaseous components which develop and in particular prussic acid as well as carbon monoxide and carbon dioxide, residues of the products specified may only be burned in approved enclosed systems and never in any kind of open fire.

Change in physical condition (burning dripping/falling material): Burning dripping is not possible because raw particle boards do not become liquid on being heated..

Fire protection

Name	Value
Building material class	D
Smoke gas development	s2
Burning droplets	d0

Water
The product contains no substances which would contaminate water through being washed out. Since the long-term effects of water lead to the destruction of the composite panel, the products must be protected against continuous exposure to moisture.

Mechanical destruction
Fracture behaviour: The fracture pattern of SWISS KRONO OSB shows relatively brittle behaviour with no smooth fracture surfaces at the board breaking edges. This causes no damage to the environment.

2.14 Re-use phase
Reuse/ subsequent use
SWISS KRONO OSB panels fibreboards can easily be reused or used further for the same purpose in case of rebuilding or the termination of the use phase of a building in case of selective dismantling as long as they are untreated and not completely glued.
Reuse
If the SWISS KRONO OSB panels are correctly sorted they can be broken down and added to the manufacturing process for chipboard.
SWISS KRONO OSB panels can be thermally recycled due to the high heating value because they consist mainly of natural wood.
A heating system which is officially approved for this application area is a requirement. Thermal use should, however, remain the use option of last resort in terms of the sustainability of cascading use.

2.15 Disposal
Residues which accrue after working and processing SWISS KRONO OSB panels should be mainly reused or recycled. These measures are preferable to incineration in terms of cascading use.
/Waste code:/ 17 02 01/ 03 01 05 according to the European Waste Catalogue (EWC).
Packaging: Paper or cardboard transport packaging and plastic of steel bands can be recycled if sorted properly. External disposal can be arranged with the manufacturer in individual cases.

2.16 Further information
Further information is available at www.swisskrono.com

3. LCA: Calculation rules

3.1 Declared Unit
The declaration refers to the manufacture of 1m³ OSB panel with a weight of 614.5 kg/m³.

Angabe der deklarierten Einheit

Name	Value	Unit
Declared unit	1	m^3
Declared unit	1	m^2
Conversion factor to 1 kg	614.5	-
Mass reference	614.5	kg/m^3
Holzfeuchte bei Auslieferung	5,5	%

3.2 System boundary
This is a cradle to factory gate declaration with options. The lifecycle analysis for the products under examination covers the product stage production processes and also credit's and impacts beyond the boundary of the product system. The systems thus contain the following stage in accordance with /EN 15804/: Product stage (Modules A1–A3):
- A1 Raw material provision and processing and working processes of secondary materials serving as input
- A2 Transport to the manufacturer, - A3 Manufacture
- A5 Assembly (just the disposal of the packaging material for the product).

In accordance with /EN 15804/, the boundary between waste disposal in the first system examined and the downstream system (Module D) is defined at the point at which the secondary material reaches its end-of-waste status. The end-of-waste-status is defined at the point at which energy is produced.

3.3 Estimates and assumptions
It is assumed that the product can be energetically recycled after use. Since it can be assumed that the boards will be recycled within the territory of the EU, the assumption that thermal energy and electricity will be substituted in accordance with the EU-28 mix is realistic. The credit for thermal energy is calculated from data record "EU-28: Thermal energy from natural gas PE" and the credit for electricity from data record "EU-28: Electricity mix PE".

3.4 Cut-off criteria
All data from the operating data collection is included. An anti-termite substance in the French factory was ignored. The share of anti-termite OSB panels of total production is significantly below 1 %. It can therefore be assumed that the total of the processes not included does not exceed 5% of the impact categories and that the cutoff criteria are fulfilled in accordance with /EN 15804/. Chopping and sorting before incineration was also not included.

3.5 Background data
All other relevant background data was taken from the GaBi software database (GABI 2020) and is not more than 10 years old. The data used was collected under consistent temporal and methodological framework conditions.

3.6 Data quality
Data for the product under examination was collected directly at the four production sites for the period from 2017 to 2018 based on a questionnaire compiled by the Sphera consulting company. The input and output data were provided by SWISS KRONO and checked for plausibility. It can therefore be assumed that the representativeness of the data is good.

3.7 Period under review
All primary data from the SWISS KRONO operating data collection (four sites: DE, FR, HU, PL) was

included, i.e. all source materials used for the formulation, energy requirements and all direct production waste were included in the balance. Only the anti-termite substance was not included. The manufacturing data of the companies represents an average for the years from 2017 to 2018. The actual transport distances were used for all inputs and outputs included.

3.8 Allocation

Energy credits for electricity and thermal energy produced in the biomass power station in the end-of-life are added according to the heat value of the input, whereby the efficiency of the plant is also included. Input-dependent emissions (e.g. CO2, HCl, SO2 or heavy metals) in the end-of-life are calculated according to the material composition of the ranges brought in. Technology-dependent emissions (e.g. CO) are added according to the exhaust gas quantity.

Waste is also added to production in full. With sawmill waste wood, the forest process and associated transport are added to the wood according to the volume share (or dry mass). To delimit the material flows of other products manufactured in the factory a calculation key is applied in the manufacturer's controlling. The respective input and output flows are accordingly allocated to products according to volume.

3.9 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

- Background data was taken from the GaBi software database (GABI 2020).

4. LCA: Scenarios and additional technical information

In accordance with /EN 15804/, the boundary between waste disposal in the first system examined and the downstream system (Module D) is defined at the point at which the secondary material reaches its end-of-waste status. The end-of-waste-status is defined at the point at which energy is produced. The resulting effects are declared in Module C and the credits are declared in Module D.
After the product has reached the end-of-life status it is assumed that the wood part (93.6%) of the product is incinerated as biomass (EU 28 average) which produces thermal energy and electricity. The remains are burnt in an incineration plant for urea-formaldehyde (worst case scenario).

It is assumed that the product was not treated or serviced with chemicals during the use period; for this reason, biomass incineration is assumed to be suitable. It is assumed that the product can be energetically recycled after use with a heat value of < 18 MJ/kg (at average wood moisture of 22.5%). Through increasing the moisture of the product during use the heat value is lower than the heat value of the product directly after manufacture.

Since incineration in a biomass power station is assumed by this study, it can be assumed that R1 > 0.6 as the efficiency of biomass plants is generally greater than 0.6.

The biogenic carbon content of the product is 1064.93 kg CO2 eq.

Installation into the building (A5)

Name	Value	Unit
Output substances following waste treatment on site (total Verpackung)	18.71	kg
Carton	2.11	kg
Plastik Film	0.06	kg
PET Band	0.03	kg
Stahl	0.008	kg
Holz	16.5	kg

Waste processing (C3)

Name	Value	Unit
Energy recovery	614.5	kg

5. LCA: Results

The following tables show the results of the environmental impact analysis differentially according to the CML environment category, resource deployment, output flows and waste categories scaled to the declared unit of 1 m³ OSB panel. Effects from incineration of the panels (EoL) which arise from this are declared in Module C3. Credits are declared in Module D.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	X	MND	MND	MNR	MNR	MNR	MND	MND	MND	MND	X	MND	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A1: 1 m³ OSB Platte (615 kg)

Parameter	Unit	A1-A3	A5	C3	D
Global warming potential	[kg CO_2-Eq.]	-8.90E+2	2.95E+1	1.13E+3	-6.16E+2
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	6.75E-5	4.51E-15	5.99E-14	-9.79E-12
Acidification potential of land and water	[kg SO_2-Eq.]	6.34E-1	4.61E-3	1.37E+0	-7.59E-1
Eutrophication potential	[kg $(PO_4)^3$-Eq.]	1.28E-1	8.35E-4	2.10E-1	-9.91E-2
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	1.32E-1	3.04E-4	2.04E-1	-7.39E-2
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	3.00E-5	7.73E-8	9.94E-7	-1.18E-4
Abiotic depletion potential for fossil resources	[MJ]	3.53E+3	7.39E+0	1.34E+2	-8.43E+3

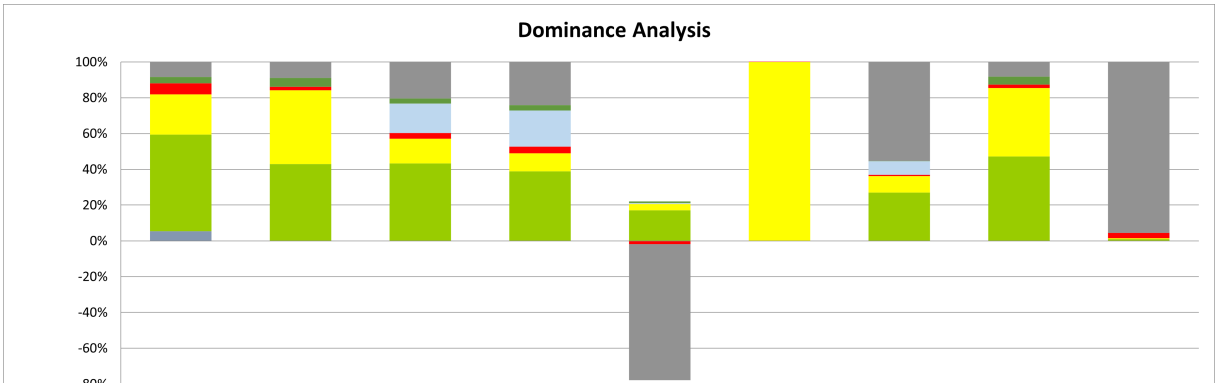
RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A1: 1 m³ OSB Platte (615 kg)

Parameter	Unit	A1-A3	A5	C3	D
Renewable primary energy as energy carrier	[MJ]	2.52E+3	3.28E+2	1.07E+4	-2.61E+3
Renewable primary energy resources as material utilization	[MJ]	1.10E+4	-3.27E+2	-1.07E+4	0.00E+0
Total use of renewable primary energy resources	[MJ]	1.35E+4	1.14E+0	1.15E+1	-2.61E+3
Non-renewable primary energy as energy carrier	[MJ]	3.44E+3	1.33E+1	6.43E+2	-1.07E+4
Non-renewable primary energy as material utilization	[MJ]	5.07E+2	-4.04E+0	-5.03E+2	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	3.95E+3	9.29E+0	1.40E+2	-1.07E+4
Use of secondary material	[kg]	2.32E+0	0.00E+0	0.00E+0	0.00E+0
Use of renewable secondary fuels	[MJ]	3.80E+1	0.00E+0	0.00E+0	0.00E+0
Use of non-renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of net fresh water	[m³]	7.98E-1	7.78E-2	1.01E+0	-3.02E+0

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A1: 1 m³ OSB Platte (615 kg)

Parameter	Unit	A1-A3	A5	C3	D
Hazardous waste disposed	[kg]	9.58E-5	1.23E-8	1.12E-7	-4.30E-6
Non-hazardous waste disposed	[kg]	2.75E+0	4.80E-1	5.92E+0	-5.26E+0
Radioactive waste disposed	[kg]	1.64E-1	7.37E-4	2.14E-3	-9.04E-1
Components for re-use	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for recycling	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for energy recovery	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported electrical energy	[MJ]	0.00E+0	0.00E+0	2.96E+3	3.82E+1
Exported thermal energy	[MJ]	0.00E+0	0.00E+0	4.22E+3	5.05E+1

6. LCA: Interpretation



	ADP elements [kg Sb-Equiv.]	ADP fossil [MJ]	AP [kg SO2-Equiv.]	EP [kg PO4-Equiv.]	GWP [kg CO2 Equiv.]	ODP [kg R11-Equiv.]	POCP [kg C2H2-Equiv.]	PE non-renewable [MJ]	PE renewable [MJ]
Wood	8,44%	8,90%	20,45%	24,17%	-136,36%	0,00%	55,38%	8,17%	95,42%
Transport	3,50%	4,91%	2,85%	3,03%	1,79%	0,00%	0,13%	4,44%	0,07%
Production	0,01%	0,01%	16,48%	20,09%	0,97%	0,00%	7,67%	0,01%	0,00%
Packaging	6,09%	1,91%	3,15%	3,81%	-3,24%	0,00%	0,64%	2,02%	3,02%
other inputs	22,49%	41,35%	13,76%	9,97%	6,31%	100,00%	9,27%	38,26%	0,48%
Energy	54,13%	42,79%	43,27%	38,92%	30,51%	0,00%	26,89%	46,99%	1,00%
Auxiliaries	5,35%	0,12%	0,04%	0,02%	0,01%	0,00%	0,03%	0,11%	0,00%

The following interpretation contains a summary of the LCA results in relation to a declared unit of 1 m³ OSB panel. The dominance analysis regards Modules A1-A3 only.
Abiotic depletion potential for non-fossil resources (**ADPE**) is mainly dominated by the energy supply. The production of the electricity mix in Germany and Poland plays a decisive role here.

Abiotic depletion potential for fossil resources (**ADPF**) approximately half of the impact is attributable to the PMDI adhesive system (other inputs) and the provision of thermal energy. The use of natural gas has a strong effect here.

Acidification and eutrophication potential (**AP, EP**) are caused partly by the provision of energy (electricity), partly by wood and partly by process emissions.

Global warming potential (**GWP**) has a particular status as negative values accrue in the analysis in Modules A1–A3 through the sequestration of carbon dioxide in wood.

The storage of carbon dioxide during the growth of trees is reflected in the raw material provision. This stored carbon dioxide is released again during incineration in the end-of-life. The largest driver of global warming is the production of thermal energy because the burning of waste wood and natural gas releases large quantities of CO2.

The ozone depletion potential (**ODP**) is caused almost exclusively by raw material provision (PMDI adhesive system in Germany, France, Hungary and Poland).

Consumption of non-renewable primary energy as energy carrier (**PENRE**) is mainly attributable to the PMDI adhesive system (in Germany and Poland) and the provision of energy, in other words thermal energy and electricity.

The primary energy requirement from renewable energy carriers (**PERE**) is more than 90 % attributable to the provision of wood. The need for renewable energy carriers in the provision of raw materials is caused to a large extent by the provision of roundwood.

7. Requisite evidence

7.1 Formaldehyde
Formaldehyde-free binding agents are used in the manufacture of SWISS KRONO OSB panels.

7.2 MDI
Measuring body: Entwicklungs- und Prüflabor Holztechnologie GmbH, Dresden
Test report and date: 2520182/1, 2520182/2, 2520182/3 of 02/06/2020
Results: SWISS KRONO OSB panels were tested using /RAL-UZ 76/ (02/2010), /DIN EN 16516/ (01/2018) as a basis.
MDI emissions were below the detection threshold (< 0.1 µg/m³) of the analytic process.

7.3 Test for pre-treatment of raw materials
No waste wood is used in the manufacture of KRONO OSB panels. Therefore not relevant.

7.4 Toxicity of flue gases
Measuring body: Elektro-Physik Aachen GmbH, Aachen
Test report and date: 14/2009 of 14/05/2009
Results: Glued OSB FO was sampled.

The results to /DIN 53436/ show
that no chlorine and sulphur compounds could be detected. The gaseous emissions released under the selected test conditions are mainly equivalent to the emissions which are released from wood under the same conditions.

7.5 VOC emissions
Measuring body: Entwicklungs- und Prüflabor Holztechnologie GmbH, Dresden
Test report and date: 2518410/1/A1 of 06/03/2019; 2519148/2 of 07/05/2019

AgBB Overview of results (28 Tage [µg/m³])

Name	Value	Unit
TVOC (C6 - C16)	111 - 149	µg/m^3
Summe SVOC (C16 - C22)	0	µg/m^3
R (dimensionslos)	0,339 - 0,509	-
VOC ohne NIK	0-5	µg/m^3
Kanzerogene	0	µg/m^3

AgBB Overview of results (3 Tage [µg/m³])

Name	Value	Unit
TVOC (C6 - C16)	150 - 307	µg/m³
Sum SVOC (C16 - C22)	-	µg/m³
R (dimensionless)	-	-
VOC without NIK	-	µg/m³
Carcinogenic Substances	0	µg/m³

8. References

AgBB Schema
Vorgehensweise bei der gesundheitlichen Bewertung der Emissionen von flüchtigen organischen Verbindungen (VVOC, VOC und SVOC) aus Bauprodukten; Ausschuss zur gesundheitlichen Bewertung von Bauprodukten

AltholzV - Anhang IV
Verordnung über Anforderungen an die Verwertung und Beseitigung von Altholz, Anhang IV - Vorgaben zur Analytik für Holzhackschnitzel und Holzspäne zur Herstellung von Holzwerkstoffen

BBSR-Tabelle
BBSR table on the useful life of components for lifecycle analyses according to the sustainable building assessment system, Federal Ministry of the Interior, Building and Community, last updated: 24/02/2017

CPR
Regulation no 305/2011 of the European Parliament and Council of 9th March 2011 laying down harmonised conditions for the marketing of construction products

EAK
European Waste Catalogue (EAK) in the version of the Commission's decision of 2001/118/EC dated 16th January 2001 to modify decision 2000/532/EC on a waste catalogue

DIN 53436
/DIN 53436:2015-12/, Generation of thermal decomposition products from materials for their analytic-toxicological testing

EN 300
/EN 300:2006-09/, Oriented Strand Boards (OSB) - Definitions, classification and specifications

EN 322
/EN 322:1993-08/, Wood-based materials - determination of moisture content

EN 323
/EN 323:1993-08/, Wood-based materials - determination of bulk density

EN 789
/EN 789:2005-01/ - Timber structures - Test methods - Determination of mechanical properties of wood-based materials

EN 13501-1
/EN 13501-1:2019-05/; Classification of building products and building elements – Part 1: Classification using data from reaction to fire tests

EN 13986
/EN 13986:2015-06/, Wood-based materials for use in construction - Characteristics, evaluation of conformity and marking

EN ISO 14025
/EN ISO 14025:2011-10/, Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

EN 15804
/EN 15804:2020-03/, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

EN 16516
/EN 16516:2020-10/, Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air

EN 1995-1-1
/EN 1995-1-1:2010-12/, Eurocode 5: Design of timber structures - Part 1-1: General - Common rules and rules for buildings

ISO 9001
/ISO 9001:2015- 11/, Quality management systems– Requirements

ISO 14001
/ISO 14001:2015- 09/, Environmental management systems - Requirements with guidance on use

ISO 14040
/ISO 14040:2006-07/, Environmental management - Life cycle assessment - Principles and framework

ISO 14044
/ISO 14044:2006-07/, Environmental management - Life cycle assessment - Requirements and guidelines

ISO 50001
/ISO 50001:2018-08/, Energy management systems - Requirements with guidance for use

RAL-UZ 76
Vergabegrundlage für Umweltzeichen des RAL- – RAL--UZ 76 Emissionsarme Holzwerkstoffplatten, Ausgabe Februar 2010.

Weitere Literatur

GaBi 2020
GaBi 9. Software and database for integrated lifecycle assessment. LBP, University of Stuttgart and Sphera, 2020

GaBi Dokumentation
/GaBi 9/: Documentation of the /GaBi 9/ database data for integrated lifecycle assessment. LBP, University of Stuttgart and Sphera, 2020

Hasch 2002
Hasch, J. (2002): Ökologische Betrachtung von Holzspan und Holzfaserplatten, Diss., Uni Hamburg, überarbeitet 2007: Rueter, S. (BFH HAMBURG; Holztechnologie), Albrecht, S. (Uni Stuttgart, GaBi)

IBU programme guidance
General guidance for Institut Bauen und Umwelt e.V.'s EPD programme (General instructions for the IBU-EPD programme), version 2.0, 2021.

PCR Part A
Product category rules for building-related products and services. Part A: Calculation rules for the LCA and requirements of the background report. Version 1.8. Berlin: Institut Bauen und Umwelt e.V.(Ed.), 04/07/2019.

PCR: Wood-based materials
Product category rules for building-related products and services. Part B: Requirements of environmental product declarations for wood-based materials, Version 1.1. Berlin: Institut Bauen und Umwelt e.V.(Ed.), 10/12/2018

Publisher
Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

Programme holder
Institut Bauen und Umwelt e.V.
Panoramastr 1
10178 Berlin
Germany

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 – 3087748 - 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

Author of the Life Cycle Assessment
Sphera Solutions GmbH
Hauptstraße 111- 113
70771 Leinfelden-Echterdingen
Germany

Tel +49 711 341817-0
Fax +49 711 341817-25
Mail info@sphera.com
Web **www.sphera.com**

Owner of the Declaration
SWISS KRONO TEX GmbH & Co. KG
Wittstocker Chaussee 1
16969 Heiligengrabe
Germany

Tel +49 33962 96 740
Fax +49 33962 69 376
Mail dehe.sales.osb@swisskrono.com
Web **www.swisskrono.com**