

**Rakennustietosäätiö RTS  
Building Information  
Foundation RTS**


RTSEPD,  
No. RTS\_EPD\_42\_19  
KoskiPan  
uncoated chipboard


**RAKENNUSTIETO****Scope of the declaration**

This environmental product declaration covers the environmental impacts of KoskiPan-uncoated chipboard. The declaration has been prepared in accordance with EN 15804:2012+A1:2013 and ISO 14025 standards and the additional requirements stated in the RTS PCR (English version, 14.6.2018). This declaration covers the life cycle stages from cradle-to-gate with options including transportation to installation site, deconstruction, transportation, treatment and recovery of the product at its end-of-life.

14.11.2019  
Building Information Foundation  
RTS  
Malminkatu 16 A  
00100 Helsinki

<http://epd.rts.fi>

  
Laura Sariola  
Committee secretary

  
Markku Hedman  
RTS General Director



## General information, declaration scope and verification (7.1)

### 1. Owner of the declaration, manufacturer

Koskisen Oy Levyteollisuus  
Tehdastie 2, 16600 Järvelä, Finland  
Riitta Ahokas  
+358 40 5534 410  
riitta.ahokas@koskisen.com

### 2. Product name and number

KoskiPan-uncoated chipboard

### 3. Place of production

Järvelä mill, Finland

### 4. Additional information

www.koskisen.com

### 5. Product Category Rules and the scope of the declaration

This EPD has been prepared in accordance with EN 15804:2012+A1:2013 and ISO 14025 standards together with the RTS PCR (English version, 14.6.2016). Product specific category rules have not been applied in this EPD. EPD of construction materials may not be comparable if they do not comply with EN 15804 and seen in a building context.

### 6. Author of the life-cycle assessment and declaration

Riitta Ahokas  
Koskisen Oy



### 7. Verification

This EPD has been verified according to the requirements of ISO 14025:2010, EN 15804:2012+A1:2013 and RTS PCR by a third party. The verification has been carried out by Bionova Oy, Anastasia Sipari.

### 8. Declaration issue date and validity

14.11.2019, valid 18.10.2019-18.10.2024

**European standard EN 15804: 2014 A1 serves as the core PCR**

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

☐ Internal

☒ External

Third party verifier:

Bionova Oy

Anastasia Sipari

## Product information

### 9. Product description

This EPD represents product KoskiPan produced in Järvelä, Finland. KoskiPan is uncoated standard chipboard. The strength grades of KoskiPan are P1, P2, P3, P4, P5, P6 and P7 according to EN 312. The market area of the product is mainly Scandinavia.

### 10. Technical specifications

The product consists of the following materials sawdust, urea resin and other ingredients. The nominal density of the studied product is 700 kg/m<sup>3</sup>. Chipboard is used mainly in interior design and furniture applications

### 11. Product standards

The product is produced according to the requirements in the standard EN 13986: 2004 + A1 2015; Floor and ceiling panels for buildings.

### 12. Physical properties

The product is available in thicknesses ranging from 4-50 mm. Detailed physical properties available at the product leaflet [www.koskisen.com](http://www.koskisen.com)

In order to adapt results of EPD to chipboard of different size the conversion factors presented below can be applied

Board thickness mm	Board mass kg/m <sup>2</sup>	Area per m <sup>3</sup> m <sup>2</sup> /m <sup>3</sup>
4	2,8	250,00
6	4,2	166,67
8	5,6	125,00
9	6,3	111,11
10	7,0	100,00
12	8,4	83,33
15	10,5	66,67
16	11,2	62,50
18	12,6	55,56
19	13,3	52,63
22	15,4	45,45
25	17,5	40,00
28	19,6	35,71
30	21	33,33
34	23,8	29,41
36	25,2	27,78
38	26,6	26,32
40	28	25,00
50	35	20,00

**13. Raw-materials of the product**

Product structure / composition / raw-material	Amount %
Wood	91 %
Urea formaldehyde resin	6 %
Melamine urea formaldehyde resin	2 %
Wax	0,3 %
Ammonium sulphate	0,1 %
Tot.	100 %

**14. Substances under European Chemicals Agency's REACH, SVHC restrictions**

Name	EC Number	CAS Number
The product does not contain REACH SVHC substances.		

## 15. Functional / declared unit

m3

## 16. System boundary

This EPD covers the following modules; A1 (Raw material supply), A2 (Transport), A3 (Manufacturing) and A4 (Transportation of the product to the building site) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary - have been included.

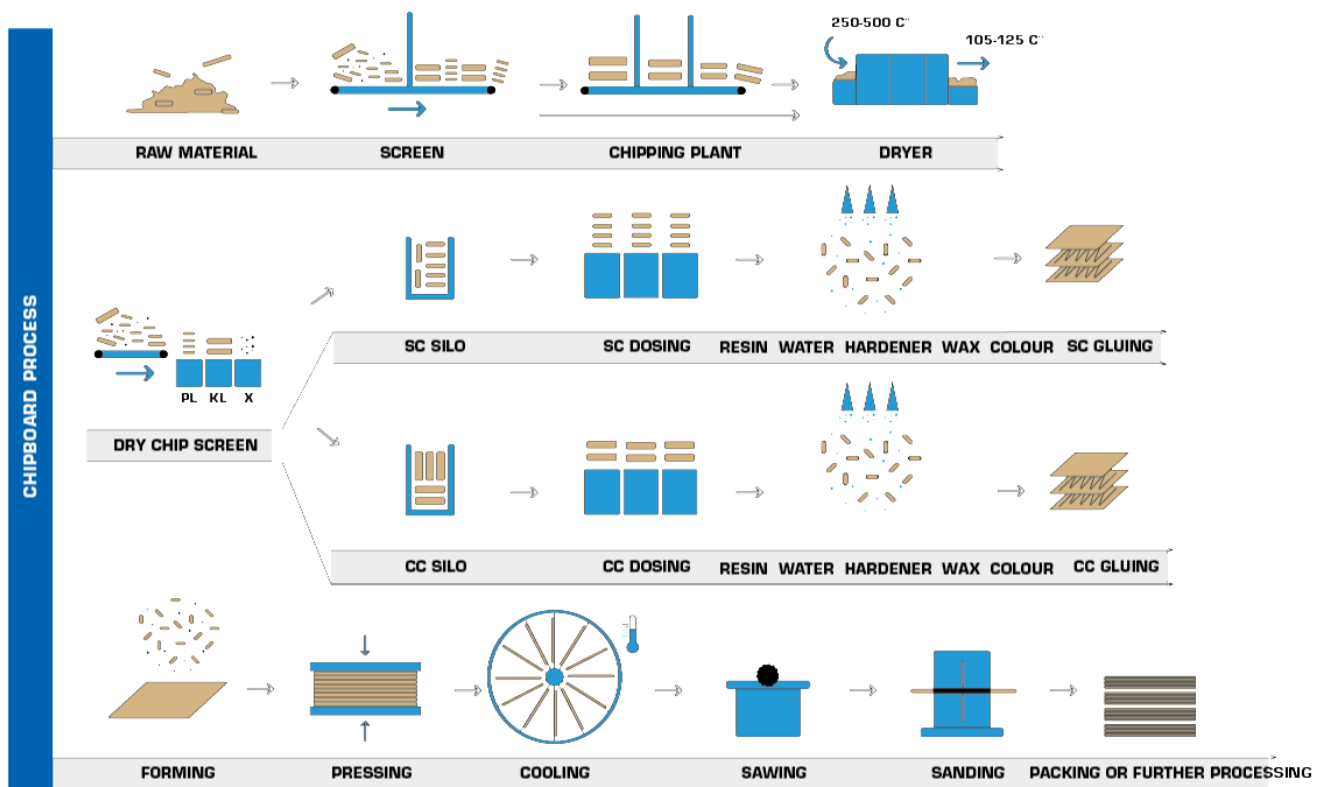
## 17. Cut-off criteria

All used materials, energy, packaging, transportation fuel and waste treatment until the end-of-waste state have been included in the product stage (A1-A3). Results for the product stage have been provided as an aggregate. A4 transportation has been estimated to be 100 km, the return trip has not been considered. Module B information has not been presented or included in the LCA calculation. Energy consumption of demolition (C1) is assumed to be negligible. Transportation distance to treatment facility is assumed to be 100 km. Collected chipboard is shredded and incinerated for energy production purposes (C3), generated ash is landfilled (C4). Module D considers the benefits of energy recovery which replaces district heat.

## 18. Production process

The product is produced from sawdust at Koskisen saw mill at the plant area.

Chips are dried and sorted according to the size of the particles. Chips are glued with urea based resins and the panel is formed into the special construction (surface layer - core layer), pressed in a continuous press, edge-trimmed and sanded.



## Scope of the Life-Cycle Assessment (7.2.1-2)

Mark all the covered modules of the EPD with X. Mandatory modules are marked with blue in the table below. This declaration covers "cradle-to-gate with options". For other fields mark MND (module not declared) or MNR (module not relevant)

Product stage			Assembly 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	MND	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	De-construction demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

	Mandatory modules
	Mandatory as per the RTS PCR section 6.2.1 rules and terms
	Optional modules based on scenarios

## Environmental impacts and raw-material use (7.2.3-7.2.4)

### 19. Environmental impacts

The results of a life cycle assessment are relative. They do not predict impact on category endpoints, exceeding of limit values, safety margins, or risks. The impacts are presented per declared unit, 1 m3 of product. The impacts are mainly caused by the manufacturing process (A3).

Environmental impact								
Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
Global warming potential	kg CO2 -eqv	2,94E+02	3,57E+00	0E0	2,68E+00	6,33E+00	3,78E-02	-6,74E+02
Depletion of stratospheric ozone layer	kg CFC11-eqv	2,06E-04	8,07E-07	0E0	5,29E-07	7,35E-07	9,71E-09	-3,43E-05
Formation of photochemical ozone	kg C2H4 -eqv	3,89E-01	5,82E-04	0E0	1,51E-04	2,05E-03	1,21E-05	-2,00E-01
Acidification	kg SO2 -eqv	2,89E+00	1,84E-02	0E0	1,23E-02	1,54E-01	2,61E-04	-3,74E+00
Eutrophication	kg PO4 3--eqv	5,56E-01	4,27E-03	0E0	2,69E-03	2,03E-01	7,85E-05	-5,09E-01
Abiotic depletion of non fossil resources	kg Sb-eqv	1,93E+00	1,13E-05	0E0	1,94E-02	1,65E-05	5,00E-08	-7,98E-05
Abiotic depletion of fossil resources	MJ	4,99E+03	9,63E+01	0E0	7,65E+01	6,23E+01	8,92E-01	-6,68E+03

## 20. Use of natural resources

Resource use								
Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
Renewable primary energy resources used as energy carrier	MJ	5,05E+03	1,35E+00	0E0	1,26E-01	2,48E+00	2,81E-02	-1,82E+02
Renewable primary energy resources used as raw materials	MJ	3,95E-01	0E0	0E0	0E0	0E0	0E0	0E0
Total use of renewable primary energy resources	MJ	5,05E+03	1,35E+00	0E0	1,26E-01	2,48E+00	2,81E-02	-1,82E+02
Nonrenewable primary energy resources used as energy carrier	MJ	5,90E+03	1,03E+02	0E0	7,62E+01	7,07E+01	9,71E-01	-7,27E+03
Nonrenewable primary energy resources used as materials	MJ	9,56E+00	0E0	0E0	0E0	0E0	0E0	0E0
Total use of non-renewable primary energy resources	MJ	5,91E+03	1,03E+02	0E0	7,62E+01	7,07E+01	9,71E-01	-7,27E+03
Use of secondary materials	kg	1,30E-02	0E0	0E0	0E0	0E0	0E0	0E0
Use of renewable secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0
Use of non-renewable secondary fuels	MJ	2,79E-04	0E0	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m3	2,47E+00	3,27E-03	0E0	0E0	7,28E-01	9,60E-05	-4,22E-01

## 21. End of life – Waste

Waste								
Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
Hazardous waste	kg	1,28E+00	3,60E-05	0E0	1,05E-05	1,80E-04	7,18E-07	-2,30E-03
Non-hazardous waste	kg	5,44E+01	8,49E+00	0E0	8,17E-03	6,88E+00	3,57E+00	-1,67E+01
Radioactive waste	kg	2,95E-02	4,80E-04	0E0	2,99E-04	2,18E-04	5,53E-06	-1,39E-02

## 22. End of life - Output flow

Output flow								
Parameter	Unit	A1-A3	A4	C1	C2	C3	C4	D
Components for reuse	kg	0E0	0E0	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	1,52E-04	0E0	0E0	0E0	0E0	0E0	0E0
Materials for energy recovery	kg	9,01E-02	0E0	0E0	0E0	7,0E+2	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	-2,52E+3

## Scenarios and additional technical information (7.3)

### 23. Electricity in the manufacturing phase (7.3.A3)

A3 data quality of electricity and CO <sub>2</sub> emission kg CO <sub>2</sub> eq. / kWh	<b>FI 0,23</b>	Based on country specific fuel mixes for the production year 2017 from IEA. Imported electricity has been considered. The environmental impacts of the fuels are based on ecoinvent 3.4 database. The impacts include all upstream processes as well as transmission losses.
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### 24. Transport from production place to user (7.3.2 A4)

Variable	Amount	Data quality
Fuel type and consumption in <b>liters / 100 km</b>	38	Source: Driver
Transportation distance <b>km</b>	100	Transportation to Helsinki, according RTS PCR
Transport capacity utilization %	100	Full load t
Bulk density of transported products <b>kg/m<sup>3</sup></b>	700	Producer data
Volume capacity utilization factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaged products)	1	Assumption

### 25. End-of-life process description (7.3.4)

Processes	Unit (expressed per functional unit or per declared unit of components products or materials and by type of material)	Amount kg/m <sup>3</sup> Data quality
Collection process specified by type	kg collected separately	720
	kg collected with mixed construction waste	0
Recovery system specified by type	kg for re-use	0
	kg for recycling	0
	kg for energy recovery	700
Disposal specified by type	kg product or material for final deposition	4
Assumptions for scenario development, e.g. transportation	units as appropriate	Transportation distance estimation based on average recycling facility locations; 100 km



## 26. Additional technical information

The properties are according to EN 312.

Biogenic carbon of studied product is calculated in accordance to NS-EN 16449:2014. Dry wood content of chipboard is 639 kg per m<sup>3</sup> that is equal to biogenic carbon content 1172 kg CO<sub>2</sub> per m<sup>3</sup> of the chipboard.

## 27. Product data sheet

### Technical specifications – KoskiPan

Raw material	Saw dust and wood chips from our own wood industry
Base board	Chipboard to meet standard EN 312
Formaldehyde class	Class E1 EN 312
Thickness	Stepless 4-40 mm
Sizes	1220 x 2630 mm, 1290 x 3045 mm, 1830 x 2630 mm, 1200-1830 x 1830-4580 mm. Other sizes at request.
Density	Depends on the thickness and type of the board 600-800 kg/m <sup>3</sup>
Machining	Drilling of holes edge machining like T&G, chamfer and rebate on request.
Other data	Detailed technical values can be found in Koskisen's Declaration of Performance (DoP). Please visit <a href="http://koskisen.com/download">koskisen.com/download</a> .

#### Pallet sizes (pcs / pll)

KoskiPan stock products are marked with **P2**, **P5** or **P2Mr**. Stock products are available in pallets, special dimensions needs to be separately agreed.

mm	1220 x 2630 mm	1290 x 3045 mm	1830 x 2630 mm
6	100	100	50
8	90	90	80
9	90	90	70
10	70	70	70
12	60	60 <b>P2</b>	60
15	48	48 <b>P2</b>	40 <b>P2</b>
16	45	45 <b>P2</b> , <b>P5</b> , <b>P2Mr</b>	40 <b>P2</b>
18	40	40 <b>P2</b> , <b>P5</b> , <b>P2Mr</b>	40 <b>P2</b>
19	37	38 <b>P2</b>	38
22	33	33 <b>P2</b> , <b>P5</b>	30
25	29	29 <b>P2</b> , <b>P5</b>	25 <b>P2</b>
28	26	26 <b>P2</b> , <b>P5</b>	20
30	24	24	20
34	22	22	20
36	20	20	16
38	17	17 <b>P2</b>	14 <b>P2</b>
40	16	16	14

### Additional information

#### Environment

Our raw material, wood is an ecological and renewable material and it stores carbon during its whole life cycle. Koskisen chipboard products are manufactured in Finland according to the strictest sustainability principles. Koskisen is a pioneer in the Finnish forest industry in paying attention to the environment and the wood's supply chain is always known in detail. Finnish forests are primarily privately owned and the owners are guided by a strong commitment to long-term forestry and forest cultivation. Yearly, Finnish forests grow more than they are harvested. This guarantees a sustainable and environmentally sound raw material.

#### Additional information

Koskisen chipboard is made from our own sawmill's sawdust and contains 85% real wood. Our professional quality control ensures that Koskisen chipboard is always pure and does not include sand or other impurities. Pure and high-quality chipboard is easy to machine and it doesn't damage saw blades.

The information, although based on extensive testing, is intended as a guideline only and comes without warranty. We reserve the right to amend specifications without notice. Any defects other than those caused by clearly verified production or service faults by the supplier are the responsibility of the user. Any claim for compensation is limited to the value of the defective panels. The Seller makes no guarantee that the goods are fit for a particular purpose, unless it provides a written declaration of their suitability.

#### Koskisen Panel Industry

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## **28. Additional information (7.4)**

Air, soil and water impacts during the use phase have not been studied.

## **29. Bibliography**

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+A1 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products. RTS PCR 14.6.2018 RTS PCR protocol: EPDs published by the Building Information Foundation RTS sr. PT 18 RT EPD Committee. (English version)  
NS-EN 16449:2014 Wood and wood-based products - Calculation of the biogenic carbon content of wood and conversion to carbon dioxide  
NS-EN 16485:2014 Round and sawn timber - Environmental Product Declaration - Product category rules for wood and wood-based products for use in construction