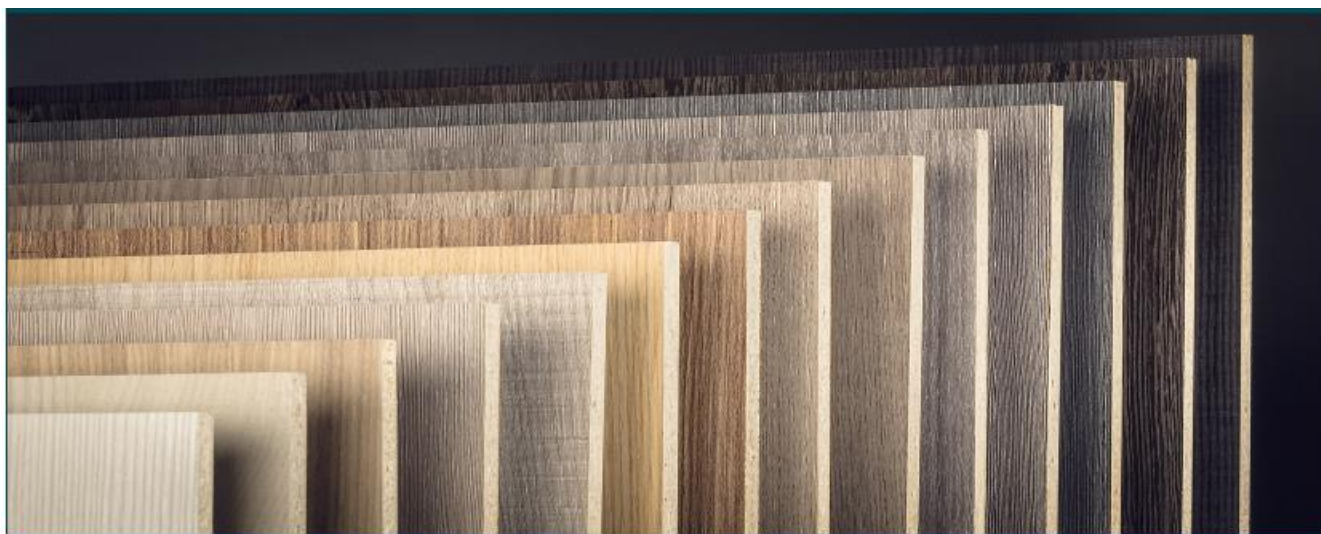




Rakennustietosäätiö RTS
Building information
Foundation RTS

RTS EPD,
No. RTS-EPD_40_19
KoskiMel
melamine coated chipboard

Scope of the declaration

This environmental product declaration covers the environmental impacts of KoskiMel melamine coated 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.

RAKENNUSTIETO

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

KoskiMel- melamine coated 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, 14.6.2018). 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 KoskiMel produced in Järvelä, Finland. KoskiMel is coated chipboard with various colouring White, Grey, Beech, Oak etc. The market area of the product is Scandinavia.

10. Technical specifications

The panels are produced according to EN 312. The board types are divided based on their applications as P1, P2, P3, P4, P5 and P6. The nominal density of the studied product is 720 kg/m³. Chipboard with melamine faced overlay 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 8-30 mm. The coating is melamine impregnated paper in various designs. Detailed physical properties are available at the product leaflet 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 ²	Area per m ³ m ² /m ³
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

Detailed physical properties available at the product leaflet www.koskisen.com

Product structure / composition / raw-material	Amount %
Wood, dry	89 %
Urea formaldehyde resin	6 %
Melamine urea formaldehyde resin	2 %
Wax	0,3 %
Ammonium sulphate	0,1 %
Lamination paper	1 %
Melamine resin, lamination	2 %
Tot.	100 %

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

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

15. Functional / declared unit

m³

16. System boundary

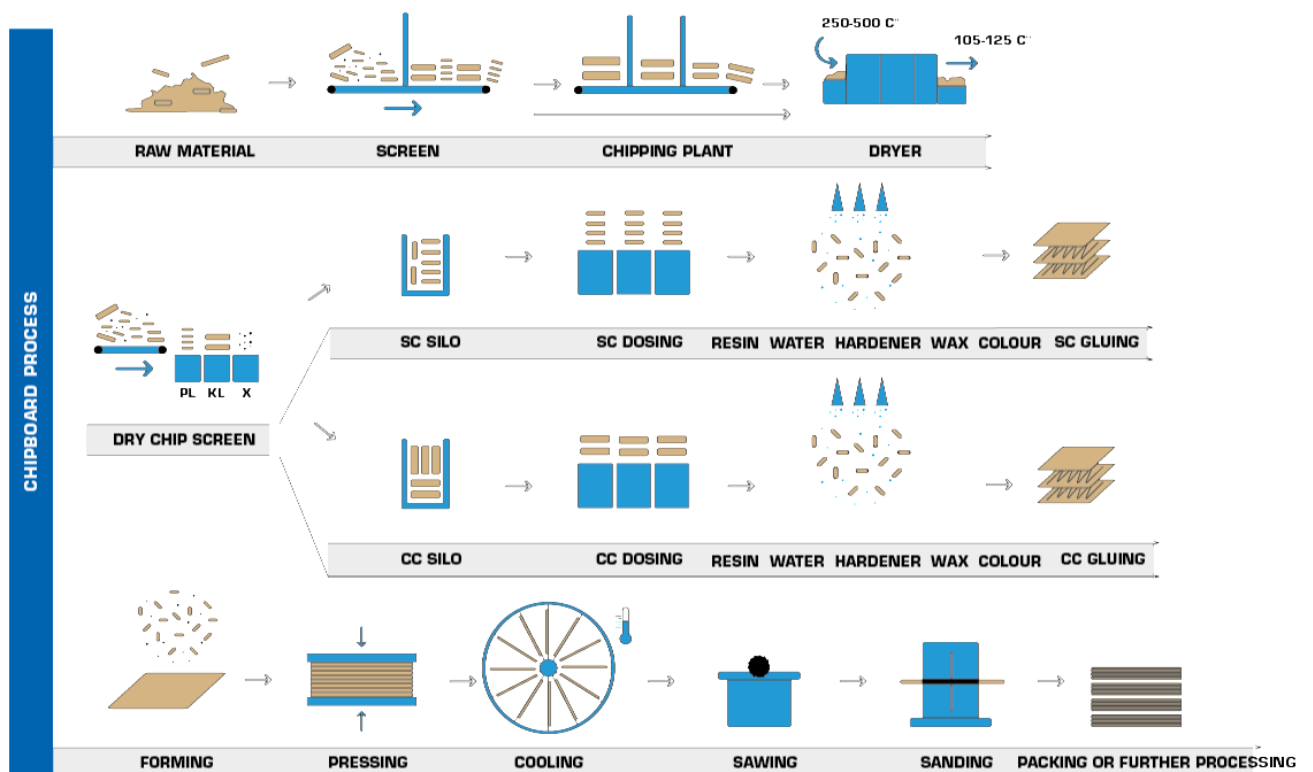
This EPD covers the following modules; A1 (Raw material supply), A2 (Transport), A3 (Manufacturing) and A4 (Transportation of the product to the building site) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and 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 at Koskisen saw mill 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. The panels are coated with various melamine designs.



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 CO ₂ -eqv	3,98E+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	2,20E-04	8,07E-07	0E0	5,29E-07	7,35E-07	9,71E-09	-3,43E-05
Formation of photochemical ozone	kg C ₂ H ₄ -eqv	4,29E-01	5,82E-04	0E0	1,51E-04	2,05E-03	1,21E-05	-2,00E-01
Acidification	kg SO ₂ -eqv	3,53E+00	1,84E-02	0E0	1,23E-02	1,54E-01	2,61E-04	-3,74E+00
Eutrophication	kg PO ₄ 3--eqv	6,52E-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	2,43E+00	1,13E-05	0E0	1,94E-02	1,64E-05	5,00E-08	-7,98E-05
Abiotic depletion of fossil resources	MJ	6,53E+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	5,16E+03	1,35E+00	0E0	1,26E-01	2,49E+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	5,16E+03	1,35E+00	0E0	1,26E-01	2,49E+00	2,81E-02	-1,82E+02
Nonrenewable primary energy resources used as energy carrier	MJ	7,63E+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	9,49E+00	0E0	0E0	0E0	0E0	0E0	0E0
Total use of non-renewable primary energy resources	MJ	7,63E+03	1,03E+02	0E0	7,62E+01	7,07E+01	9,71E-01	-7,27E+03
Use of secondary materials	kg	3,86E-01	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	9,84E-02	0E0	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m3	3,25E+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	1,29E+00	3,60E-05	0E0	1,05E-05	1,80E-04	7,18E-07	-2,30E-03
Non-hazardous waste	kg	8,52E+01	8,49E+00	0E0	8,17E-03	6,88E+00	3,57E+00	-1,67E+01
Radioactive waste	kg	4,47E-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	9,00E-04	0E0	0E0	0E0	0E0	0E0	0E0
Materials for energy recovery	kg	9,01E-02	0E0	0E0	0E0	7,2E+2	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	-2,59E+3

Scenarios and additional technical information (7.3)

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

A3 data quality of electricity and CO2 emission kg CO2 eq. / kWh	FI 0,23	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 liters / 100 km	38	Source: Driver
Transportation distance km	100	Transportation to Helsinki, according RTS PCR
Transport capacity utilization %	100	Full load transport to production area.
Bulk density of transported products kg/m ³	720	Producer data
Volume capacity utilisation 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/m3 Data quality
Collection process specified by type	kg collected separately	700
	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 of the panels 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 620 kg per m³ that makes 1138 kg CO₂ per m³ of the chipboard.

27. Product data sheet

Technical specifications – KoskiMel

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
Coating	Melamine impregnated paper. Possibility for coating multiple layers (2-3).
Colours	White, black, grey, wood imitations, paint base film, about 20 different special colours. Colour card can be seen at www.koskisen.com . Colour samples are sent on request.
Standard thicknesses & sizes	8-32 mm: 1830 x 2750 mm, thicker boards until 40mm 1830 x 2630 mm.
Density	Depends on the thickness and type of the board 620-770 kg/m ³ (P5), 550-740 kg/m ³ (P2)
Emission Classification	M1 emission class for building material
Embossing	Wood grain (WG), crystal (CR), soft (SF), smooth (SM), glossline (GL), matt (MT)
Cleaning	Clean with soft paper or textiles and weak alkaline detergent; very dirty surfaces can be cleaned with alcohol or with detergent containing alcohol
Other data	Detailed technical values can be found in Koskisen's Declaration of Performance (DoP). Please visit koskisen.com/download .

Pallet sizes

Koskimel stock thicknesses and qualities are **bolded**. Stock products are available in pallets, special dimensions needs to be separately agreed. Over 30mm products are in color white.

Thickness	1830 x 2750 mm
8	50 P2
10	46 P2
12	40 P2, P5
15	30 P2, P5
18	26 P2, P5
19	24 P2
22	20 P2, P5
25	18 P2, P5
28	16 P2
30	16 P2
38	12 P2 (1830 x 2630)

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.

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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