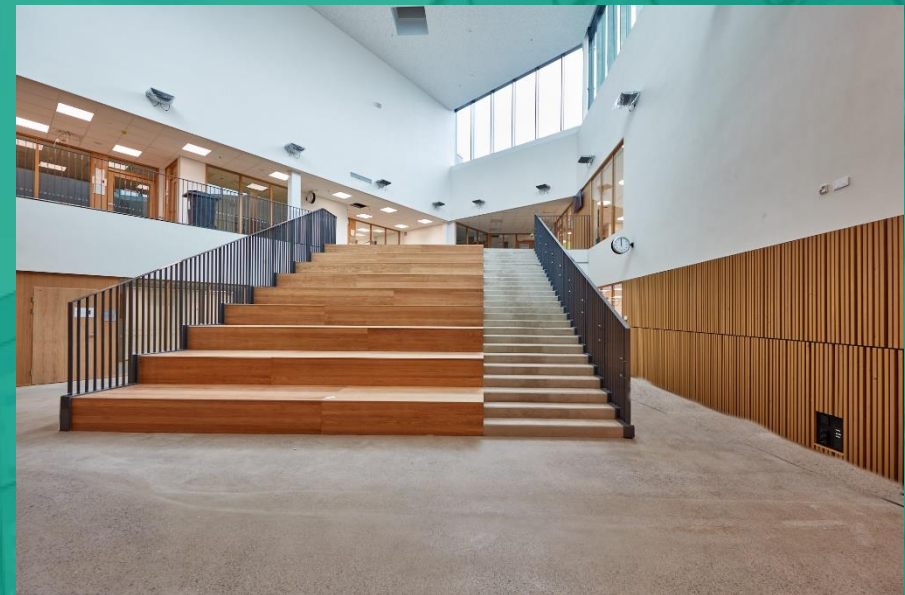


# ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

**LUMIR COMFORT ACOUSTIC  
COATING  
LUMIR OY**





# GENERAL INFORMATION

## MANUFACTURER INFORMATION

<b>Manufacturer</b>	Lumir Oy
<b>Address</b>	Linjatie 2, 01260 Vantaa
<b>Contact details</b>	firstname.lastname@lumir.fi
<b>Website</b>	www.lumir.fi

## PRODUCT IDENTIFICATION

<b>Product name</b>	Lumir Comfort acoustic coating
<b>Place(s) of production</b>	Vantaa, Finland

### The Building Information Foundation RTS sr

EPDs within the same product category but from different programmes may not be comparable.

Jessica Karhu  
RTS EPD Committee secretary

Laura Apilo  
Managing Director

## EPD INFORMATION

The EPD owner has the sole ownership, liability, and responsibility for the EPD. Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

<b>EPD program operator</b>	Building Information Foundation RTS / Building Information Ltd. Malminkatu 16 A, A00100 Helsinki, Finland <a href="http://cer.rts.fi">http://cer.rts.fi</a>
<b>EPD standards</b>	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
<b>Product category rules</b>	The CEN standard EN 15804 serves as the core PCR. In addition, the RTS PCR (English version, 26.8.2020) is used. RTS EPD Guideline 18.2.2021.
<b>EPD author</b>	Esa Salminen, Laura Sariola, Riikka Anttonen Vahanen Environment Oy
<b>EPD verification</b>	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
<b>Verification date</b>	05.11.2021
<b>EPD verifier</b>	Silvia Vilčeková, Silcert, s.r.o.
<b>EPD number</b>	RTS_162_21
<b>ECO Platform nr.</b>	-
<b>Publishing date</b>	November 24, 2021
<b>EPD valid until</b>	November 24, 2026

## PRODUCT INFORMATION

### PRODUCT DESCRIPTION

The product is a biofibre-based sprayable acoustic coating for indoor use. The coating uses the inherent properties of the fibres to form a porous, sound-absorbing structure. The product is intended for use in homes, public spaces, schools, offices and commercial spaces to reduce reverberation and improve acoustics.

### PRODUCT APPLICATION

Product can be sprayed on any construction surface or used on top of an acoustic board. Applications is done with an equipment (electric sprayer) developed for the purpose.

### TECHNICAL SPECIFICATIONS

Acoustic class D for coating  
Acoustic class A for coating combined with acoustic base material  
Fire class B, s1, d0  
M1- emission classification of building materials

### PRODUCT STANDARDS

Fire resistance EN 13501-1: 2018  
Emission measurements EN ISO 16000-9, EN 717-1, EN ISO 16000-28  
Acoustic performance EN ISO 354: 2003, EN ISO 11654: 1997

### PHYSICAL PROPERTIES OF THE PRODUCT

Typical properties of the product:  
Thickness of the sprayed layer 8...10 mm  
Density: 530 kg/m<sup>3</sup>  
Organic content: 75...90%

### ADDITIONAL TECHNICAL INFORMATION

Further information can be found at [www.lumir.fi](http://www.lumir.fi).

## PRODUCT RAW MATERIAL COMPOSITION

Product and Packaging Material	Weight, kg	Post-consumer %	Renewable %	Country Region of origin
Pulp	0,110	-	-	Finland
Water	0,861	-	-	Finland
Boric acid	0,009	-	-	Turkey
Borax	0,009	-	-	Turkey
Filler	0,006	-	-	China
Other materials	<0,010	-	-	-

## PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	0	-
Minerals	2	World
Fossil materials	1	World
Bio-based materials	11	Finland
Water	86	Finland

## SUBSTANCES, REACH - VERY HIGH CONCERN

Substances of very high concern	EC	CAS
Boric acid	233-139-2	10043-35-3
Borax (Disodium tetraborate)	215-540-4	12179-04-3

# PRODUCT LIFE-CYCLE

## MANUFACTURING AND PACKAGING (A1-A3)

The production of the acoustic coating starts with transportation of the raw materials to the production facility in Vantaa. The raw materials are manufactured in Finland, Turkey and China (A1). Tap water and sulfate pulp from Äänekoski mill are domestic materials. Boric acid and borax are transported from Turkey and filler from China. Other raw materials account for less than 1 %. Raw material losses during production are assessed as insignificant (<0,01%).

The raw materials from abroad (Turkey and China) are transported with container ships. Distances between factories and harbours in vendor countries are assumed to be covered with delivery trucks. 100% occupancy rate is assumed for both ship and road transport (A1). The transportation of raw materials from Helsinki harbour to Lumir factory is covered with Lumir's employees' private cars (A2).

In the Lumir production facility raw materials are mixed together with an electric mixer (A3). The final product is packed in reusable plastic or metal containers with a plastic film cover.

Substances of very high concern (Borax and boric acid) are stored and handled in the production facilities in accordance with the Safety Data Sheets.

## TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurring from final product's delivery to construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Product is transported to construction site mainly with private cars (vans). Average distance from production facility in Vantaa to construction site in Uusimaa region is assumed to be 50 km. The occupancy rate is assumed to be 100% as transports are optimised by combining site visits and raw material pick-ups from harbour.

Transportation losses are assessed as insignificant.

At site the product is installed using a spray equipment developed for the purpose. Product can be sprayed on any construction surface or applied to an acoustic panel. The energy consumption of installation (electric sprayer) has been taken into account. During installation the surrounding area is covered with protective plastic (A5). Excess coating is stored for reuse in other projects. Empty product containers are returned, washed and reused.

## PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase. Air, soil and water impacts during the use phase have not been studied.

## PRODUCT END OF LIFE (C1-C4, D)

At the end of life the product can be separately removed by moistening it with water (0,6 kg water / kg of coating) and scraping off. 100% of the waste is assumed to be collected. The water used for removal is collected and used in the fiber recycling process. The deconstruction process consumes energy only in the form of manpower as the scraper and water sprayer are operated manually.

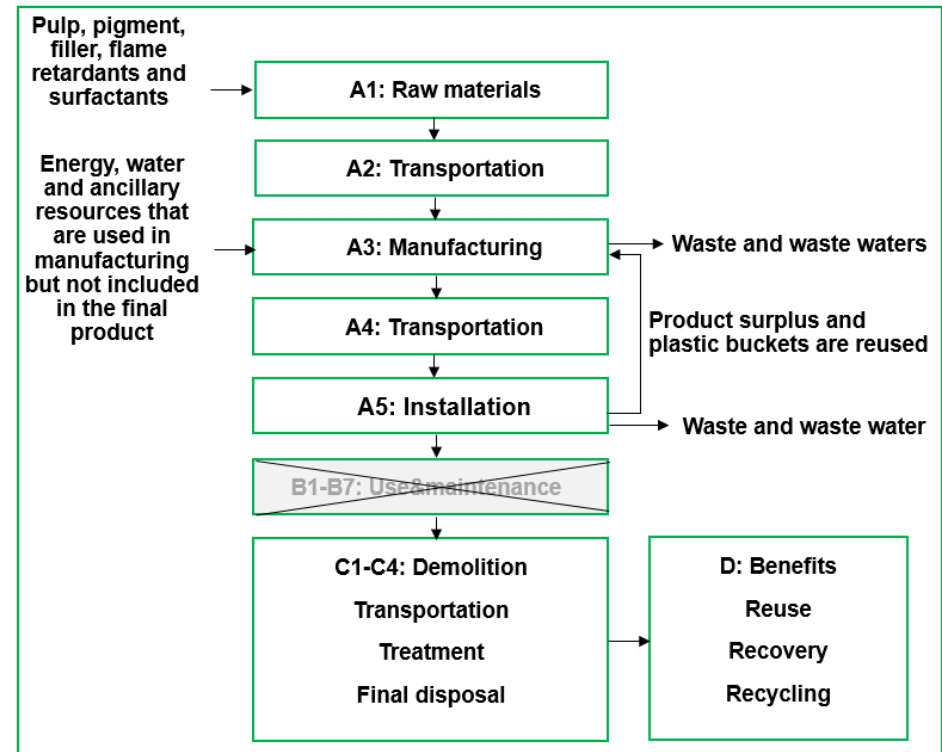
The dismantled waste material is transported to the closest facility for recycling, utilization or final disposal. Average distance is estimated to be 50 km and the transport method used is assumed to be truck (C2).

60 % of the waste material is assumed to be utilized in agriculture as a soil improvement agent for water retention and fertilization. 15 % of the product is assumed to be recovered as material combined with recycled cardboard. 20% of the waste material is assumed to be disposed of by incineration (C3).

5% of the waste material is assumed to be landfilled (C4).

The waste material replaces the use of fertilizers and virgin pulp in module D.

## MANUFACTURING PROCESS





# LIFE-CYCLE ASSESSMENT

## LIFE-CYCLE ASSESSMENT INFORMATION

<b>Period for data</b>	2020
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## DECLARED AND FUNCTIONAL UNIT

<b>Declared unit</b>	kg
<b>Mass per declared unit</b>	1
<b>Reference service life</b>	not defined

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

<b>Biogenic carbon content in product, kg C</b>	0,045
<b>Biogenic carbon content in packaging, kg C</b>	negligible

## SYSTEM BOUNDARY

This EPD covers the *cradle to gate with options* scope with the following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Transport), A5 (Assembly) 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 is included.

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	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x	x	x
<b>Geography</b> , by two-letter ISO country code or regions. The International EPD System only.																		
EU	EU	EU	EU	EU	-	-	-	-	-	-	-	EU	EU	EU	EU			EU
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

## CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances.

The study includes all major raw material, energy consumption, packaging and transportation until the end-of-waste state. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass and energy flows. The total neglected input and output flows do not exceed 5% of energy usage or mass.

In C1 the energy consumption from manual disassembly by manpower is excluded because it cannot be measured and is considered insignificant. The possible benefit (D) from incineration (C3) in the form of district heat is neglected.



The production and maintenance of capital equipment, construction activities and infrastructure as well as activities related to sales or personnel (commuting etc.) are excluded.

## ALLOCATION, ESTIMATES AND ASSUMPTIONS

The values for 1 kg of product are calculated by considering the total product weight per annual production. Other products and R&D activities take place in the same production facilities, so the annual use of raw materials, energy consumption, ancillary resources and the generated waste are calculated or otherwise estimated separately per the declared unit of this particular product. Thus, no allocation was required.

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs. All estimations and assumptions are described below:

**Module A1-A3:** The amount of loss in production and transportation is estimated to be negligible (<0,1%). Occupancy rate of 100% is assumed for sea and road transport. Road transport of raw materials from China is an estimate as definite information was not available.

Electricity used in manufacturing (A3) includes the electricity required for mixing and other production activities as well as general electricity (e.g. lighting) on the property. Electricity for mixing is specified by the manufacturer, general electricity use is estimated on the basis of an average consumption of electricity on a similar production facility.

As the packaging buckets are reusable, the overall consumption of packaging material in the final product is estimated to correspond to the number of broken and therefore replaced plastic buckets and plastic covers per declared unit

**Module A4:** The average transportation distance to construction site is assumed to be 50 km. Occupancy rate of 100% is assumed for road transport as site visits and other pick-ups are combined and routes optimized. The amount of loss during transport is estimated to be negligible (<0,1%).

**Module A5:** The amount of loss in installation is estimated to be negligible (<0,1%). The amount of materials and energy required in installation is estimated according to a construction site of size 150 m<sup>2</sup>.

**Module C:** Based on the current situation it has been estimated that at the end of life 15% of the product is recycled and 60% composted as soil improvement, whereas 20% is disposed of by incineration and 5% landfilled.

The distance for waste transport (C2) has been estimated to be 50 km in Uusimaa region.

**Module D:** Based on the current situation it has been estimated that at the end of life 60% of the product is reused as soil improvement agent to replace the use of fertilizers. 15% of the product is recycled as waste cardboard to replace virgin pulp in cardboard manufacturing.

## AVERAGES AND VARIABILITY

The data has been collected product- and factory-specific and is based on the product's production volume.



# ENVIRONMENTAL IMPACT DATA

Note: additional environmental impact data may be presented in annexes.

## CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e	-8,29E-2	9,18E-3	1,27E-2	-6,11E-2	1,908E-2	3,87E-3	MND	MND	MND	MND	MND	MND	MND	2,1E-4	1,87E-2	1,01E0	8,41E-3	-5,26E-1
GWP – fossil	kg CO <sub>2</sub> e	8,22E-2	9,18E-3	1,16E-2	1,03E-1	1,91E-2	3,9E-3	MND	MND	MND	MND	MND	MND	MND	2,06E-4	1,87E-2	4,67E-2	1,59E-4	-6,24E-1
GWP – biogenic	kg CO <sub>2</sub> e	-1,65E-1	-1,92E-7	9,5E-4	-1,64E-1	-1,01E-5	-3,49E-5	MND	MND	MND	MND	MND	MND	MND	4,2E-6	8,8E-6	9,62E-1	8,25E-3	1,02E-1
GWP – LULUC	kg CO <sub>2</sub> e	1,92E-4	4,69E-6	8,21E-5	2,79E-4	9,23E-6	4,06E-6	MND	MND	MND	MND	MND	MND	MND	3,4E-7	9,81E-6	8,02E-6	1,59E-8	-3,57E-3
Ozone depletion pot.	kg CFC <sub>11</sub> e	9,07E-9	1,93E-9	1,14E-9	1,21E-8	3,61E-9	1,18E-10	MND	MND	MND	MND	MND	MND	MND	1,82E-11	4,05E-9	2,4E-9	2,79E-11	-8,41E-8
Acidification potential	mol H <sup>+</sup> e	6,94E-4	1,59E-4	5,3E-5	9,06E-4	8,97E-5	1,19E-5	MND	MND	MND	MND	MND	MND	MND	1,2E-6	7,42E-5	1,37E-4	1,5E-6	-5,41E-3
EP-freshwater <sup>2)</sup>	kg Pe	4,32E-6	7,74E-8	4,58E-7	4,85E-6	3,55E-7	6,87E-8	MND	MND	MND	MND	MND	MND	MND	1,69E-8	2,09E-7	6,71E-5	1,87E-9	-1,94E-4
EP-marine	kg Ne	1,69E-4	3,99E-5	8,06E-6	2,17E-4	2,29E-5	2,5E-6	MND	MND	MND	MND	MND	MND	MND	1,92E-7	2,03E-5	1,02E-3	5,87E-7	-1,57E-3
EP-terrestrial	mol Ne	1,74E-3	4,43E-4	1,15E-4	2,3E-3	2,55E-4	2,79E-5	MND	MND	MND	MND	MND	MND	MND	2,22E-6	2,25E-4	5,68E-4	6,49E-6	-1,8E-2
POCP (“smog”)	kg NMVOCe	4,94E-4	1,19E-4	2,74E-5	6,4E-4	7,96E-5	9,93E-6	MND	MND	MND	MND	MND	MND	MND	6,97E-7	7E-5	1,5E-4	1,87E-6	-4,23E-3
ADP-minerals & metals	kg Sbe	3,27E-5	2,25E-7	7,35E-8	3,3E-5	1,63E-6	1,85E-8	MND	MND	MND	MND	MND	MND	MND	6,08E-9	8,48E-7	3,58E-7	2,22E-10	-1,94E-5
ADP-fossil resources	MJ	1,33E0	1,29E-1	2,91E-1	1,75E0	2,71E-1	5,4E-2	MND	MND	MND	MND	MND	MND	MND	3,52E-3	2,78E-1	1,77E-1	2E-3	-1,02E1
Water use <sup>1)</sup>	m <sup>3</sup> e depr.	1,91E-1	4,98E-4	-6,27E-4	1,9E-1	2,17E-3	8,49E-4	MND	MND	MND	MND	MND	MND	MND	1,24E-2	1,11E-3	6,25E-4	3,89E-6	-3,16E-1

1) GWP = Global Warming Potential; EP = Eutrophication potential; POCP = Photochemical ozone formation; ADP = Abiotic depletion potential. 2) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. 3) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO<sub>4</sub>e.

## USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy	MJ	2,53E0	1,6E-3	7,12E-2	2,61E0	7,32E-3	4,3E-3	MND	MND	MND	MND	MND	MND	MND	4,77E-4	5,6E-3	7,39E-3	1,99E-5	-8,24E-1
Renew. PER as material	MJ	1,87E0	0E0	0E0	1,87E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	-3,15E0
Total use of renew. PER	MJ	4,4E0	1,6E-3	7,12E-2	4,48E0	7,32E-3	4,3E-3	MND	MND	MND	MND	MND	MND	MND	4,77E-4	5,6E-3	7,39E-3	1,99E-5	-3,97E0
Non-re. PER as energy	MJ	1,33E0	1,29E-1	2,61E-1	1,72E0	2,71E-1	2,91E-2	MND	MND	MND	MND	MND	MND	MND	3,52E-3	2,78E-1	1,77E-1	2E-3	-1,02E1
Non-re. PER as material	MJ	0E0	0E0	3,03E-2	3,03E-2	0E0	2,49E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of non-re. PER	MJ	1,33E0	1,29E-1	2,91E-1	1,75E0	2,71E-1	5,4E-2	MND	MND	MND	MND	MND	MND	MND	3,52E-3	2,78E-1	1,77E-1	2E-3	-1,02E1
Secondary materials	kg	3,83E-4	0E0	6,13E-6	3,89E-4	0E0	8,14E-6	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	-8,23E-2
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m <sup>3</sup>	8,75E-3	2,15E-5	3,87E-4	9,15E-3	6,68E-5	4,14E-5	MND	MND	MND	MND	MND	MND	MND	7,02E-4	5,03E-5	4,05E-4	1,93E-7	-9,77E-3

6) PER = Primary energy resources

## END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	5,88E-3	1,94E-4	6,96E-4	6,77E-3	9,04E-4	1,25E-4	MND	MND	MND	MND	MND	MND	MND	2,06E-5	3,78E-4	0E0	5E-2	-3,18E-2
Non-hazardous waste	kg	1,19E-1	8,29E-3	1,78E-2	1,45E-1	2,25E-2	3,63E-3	MND	MND	MND	MND	MND	MND	MND	7,53E-4	1,78E-2	0E0	7,49E-5	-1,23E0
Radioactive waste	kg	3,4E-6	8,68E-7	2,4E-6	6,67E-6	1,63E-6	1,34E-7	MND	MND	MND	MND	MND	MND	MND	1,9E-8	1,86E-6	0E0	1,26E-8	-3,78E-5

## END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	6E-1	0E0	0E0
Materials for recycling	kg	0E0	0E0	3,58E-4	3,58E-4	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	1,5E-1	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	2E-1	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

## KEY INFORMATION TABLE (RTS) – KEY INFORMATION PER KG OF PRODUCT

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total	kg CO <sub>2</sub> e	-8,29E-2	9,18E-3	1,27E-2	-6,11E-2	1,91E-2	3,87E-3	MND	MND	MND	MND	MND	MND	MND	2,1E-4	1,87E-2	1,01E0	8,41E-3	-5,26E-1
ADP-minerals & metals	kg Sbe	3,27E-5	2,25E-7	7,35E-8	3,3E-5	1,63E-6	1,85E-8	MND	MND	MND	MND	MND	MND	MND	6,08E-9	8,48E-7	3,58E-7	2,22E-10	-1,94E-5
ADP-fossil	MJ	1,33E0	1,29E-1	2,91E-1	1,75E0	2,71E-1	5,4E-2	MND	MND	MND	MND	MND	MND	MND	3,52E-3	2,78E-1	1,77E-1	2E-3	-1,02E1
Water use	m <sup>3</sup> e depr.	1,91E-1	4,98E-4	-6,27E-4	1,9E-1	2,17E-3	8,49E-4	MND	MND	MND	MND	MND	MND	MND	1,24E-2	1,11E-3	6,25E-4	3,89E-6	-3,16E-1
Secondary materials	kg	3,83E-4	0E0	6,13E-6	3,89E-4	0E0	8,14E-6	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	-8,23E-2
Biog. C in product	kg C	N/A	N/A	4,5E-2	4,5E-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Biog. C in packaging	kg C	N/A	N/A	0E0	0E0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

7) Biog. C in product = Biogenic carbon content in product

## ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG	kg CO <sub>2</sub> e	8,22E-2	9,18E-3	1,16E-2	1,03E-1	1,91E-2	3,9E-3	MND	MND	MND	MND	MND	MND	MND	2,06E-4	1,87E-2	4,67E-2	1,59E-4	-6,24E-1

8) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013) This indicator is almost equal to the GWP indicator originally defined in EN 15804:2012+A1:2013.

## SCENARIO DOCUMENTATION

### Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Market for electricity, medium voltage (Reference product: electricity, medium voltage ), Finland 2019
Electricity CO <sub>2e</sub> / kWh	0,24
District heating data source and quality	District Heat, Finland
District heating CO <sub>2e</sub> / kWh	0,12

### Transport scenario documentation (A4)

Scenario parameter	Value
Specific transport CO <sub>2e</sub> emissions, kg CO <sub>2e</sub> / tkm (private car)	0,21
Average transport distance, km	50
Capacity utilization (including empty return) %	100

### End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected separately	1
Collection process – kg collected with mixed waste	-
Recovery process – kg for re-use	0,60
Recovery process – kg for recycling	0,15
Recovery process – kg for energy recovery	0,20

Scenario parameter	Value
Disposal (total) – kg for final deposition	0,05
Scenario assumptions e.g. transportation	Waste transportation with 16-32 metric ton euro5 trucks. Transportation to soil improvement with smaller 3.5-7.5 metric ton euro5 truck / van.

## BIBLIOGRAPHY

ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations. Principles and procedures.

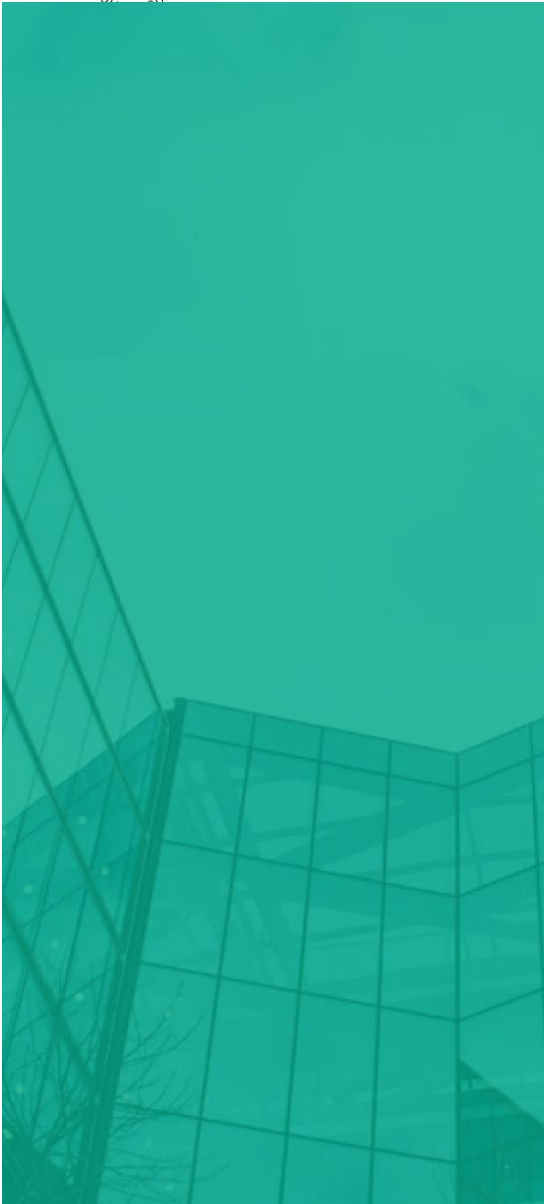
ISO 14040:2006 Environmental management. Life cycle assessment. Principles and frameworks.

ISO 14044:2006 Environmental management. Life cycle assessment. Requirements and guidelines.

Ecoinvent database v3.6 (2019) and One Click LCA database.

EN 15804:2012+A2:2019 Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.

Lumir Comfort acoustic coating LCA background report 19.08.2021



## ABOUT THE MANUFACTURER

Lumir is a Finnish company developing acoustic solutions for both private consumers and construction professionals. The company aims to develop bio-based products to meet the growing demand for sustainable building products. The company uses Finnish wood fibre in its products. Lumir's biofibres are sourced from suppliers committed to the sustainable use of forests. The origin of the trees is traceable and they are mainly sourced from PEFC or FSC certified forests. Forest certification ensures that forests are managed in accordance with national legislation, forest management recommendations and sustainable development principles.

## EPD AUTHOR AND CONTRIBUTORS

<b>Manufacturer</b>	Lumir Oy
<b>EPD author</b>	Esa Salminen, Laura Sariola, Riikka Anttonen Vahanen Environment Oy
<b>EPD verifier</b>	Silvia Vilčeková, Silcert, s.r.o.
<b>EPD program operator</b>	The Building Information Foundation RTS sr
<b>Background data</b>	This EPD is based on Ecoinvent 3.6 (cut-off) and One Click LCA databases.
<b>LCA software</b>	The LCA and EPD have been created using One Click LCA Pre-Verified EPD Generator for

# VERIFICATION STATEMENT

## VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with EN 15804, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The background report (project report) for this EPD

Why does verification transparency matter? [Read more online.](#)

## VERIFICATION OVERVIEW

Following independent third party has verified this specific EPD:

EPD verification information	Answer
Independent EPD verifier	Silvia Vilčeková, Silcert, s.r.o.
EPD verification started on	01.11.2021
EPD verification completed on	04.11.2021
Supply-chain specific data %	100% of A1-A3 GWP-GHG/fossil
Approver of the EPD verifier	The Building Information

Author & tool verification	Answer
EPD author	Esa Salminen, Laura Sariola, Riikka Anttonen Vahanen Environment Oy
EPD author training completion	10 Sept 2021
EPD Generator module	Wood and Plant Fiber Based
Independent software verifier	Teija Käpynen, Envineer Oy

Software verification date	11 August 2020
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## THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of

- the data collected and used in the LCA calculations,
- the way the LCA-based calculations have been carried out,
- the presentation of environmental data in the EPD, and
- other additional environmental information, as present

with respect to the procedural and methodological requirements in ISO 14025:2010 and EN 15804:2012+A2:2019.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.



Silvia Vilčeková, Silcert, s.r.o.

## ANNEX 1 : ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO <sub>2</sub> e	7,98E-2	9,1E-3	1,14E-2	1E-1	1,88E-2	3,8E-3	MND	MND	MND	MND	MND	MND	MND	2,01E-4	1,85E-2	7,91E-2	1,57E-4	-6,14E-1
Ozone depletion Pot.	kg CFC <sub>11</sub> e	9,32E-9	1,54E-9	1,48E-9	1,23E-8	2,95E-9	1,24E-10	MND	MND	MND	MND	MND	MND	MND	2,06E-11	3,24E-9	2,13E-9	2,22E-11	-7,18E-8
Acidification	kg SO <sub>2</sub> e	5,54E-4	1,23E-4	4,31E-5	7,2E-4	7,01E-5	9,82E-6	MND	MND	MND	MND	MND	MND	MND	9,72E-7	4,04E-5	3,49E-4	3,6E-7	-4,06E-3
Eutrophication	kg PO <sub>4</sub> <sup>3</sup> e	1,75E-4	1,54E-5	1,5E-5	2,05E-4	2,06E-5	2,9E-6	MND	MND	MND	MND	MND	MND	MND	5,51E-7	9,45E-6	7,36E-4	7,5E-8	-1,96E-3
POCP ("smog")	kg C <sub>2</sub> H <sub>4</sub> e	2,37E-5	3,57E-6	2,14E-6	2,94E-5	3,32E-6	9,03E-7	MND	MND	MND	MND	MND	MND	MND	6,47E-8	2,64E-6	3,26E-6	8,26E-8	-1,3E-4
ADP-elements	kg Sbe	3,27E-5	2,25E-7	7,35E-8	3,3E-5	1,63E-6	1,85E-8	MND	MND	MND	MND	MND	MND	MND	6,08E-9	8,48E-7	3,58E-7	2,22E-10	-1,94E-5
ADP-fossil	MJ	1,33E0	1,29E-1	2,91E-1	1,75E0	2,71E-1	5,4E-2	MND	MND	MND	MND	MND	MND	MND	3,52E-3	2,78E-1	1,77E-1	2E-3	-1,02E1