

# ENVIRONMENTAL PRODUCT DECLARATION

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

## JACKON PLATINA EPS JACKON FINLAND OY



Programme operator:  
Rakennustietosäätiö RTS

EPD registration number:  
RTS\_214\_23

Publication date:  
23.5.2023

Valid until:  
23.5.2028

## GENERAL INFORMATION

### MANUFACTURER INFORMATION

Manufacturer	Jackon Finland Oy
Address	Toravantie 18, Sastamala
Contact details	<a href="mailto:myynti@jackon.fi">myynti@jackon.fi</a> , 010 8419222
Website	<a href="http://www.jackon.fi">www.jackon.fi</a>

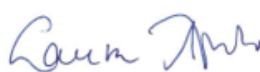
### PRODUCT IDENTIFICATION

Product name	Jackon Platina EPS
Product number / reference	Jackon Platina Lattia (floor) Jackon Platina Ontelo (ventilated floor) Jackon Platina Rappari (wall) Jackon Platina Sänkkäri (wall) Jackon Platina Katto (roof) Jackon teollisuustuotteet (industrial applications)
Place(s) of production	Sastamala (Toravantie), Finland

The Building Information Foundation RTS sr EPDs within the same product category but from different programmes may not be comparable.



Jukka Seppänen  
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.

EPD program operator	The Building Information Foundation RTS sr
EPD standards	This EPD is in accordance with EN 15804+A2 and ISO 14025 standards.
Product category rules	The CEN standard EN 15804 serves as the core PCR. In addition, the RTS PCR (Finnish version, 26.8.2020) is used.
EPD author	Laila Huovinen-Manu, Inkeri Seppälä, Sweco Finland
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
Verification date	04.05.2023
EPD verifier	Anastasia Sipari, One Click LCA
EPD number	RTS_214_23
Publishing date	23.5.2023
EPD valid until	23.5.2028

## PRODUCT INFORMATION

### PRODUCT DESCRIPTION

Expanded polystyrene (EPS) insulation is lightweight and effective. They can be used in various applications. Jackon Platina insulation boards are fire retardant and contain graphite for improved insulation capacity.

### PRODUCT APPLICATION

The insulation boards are used for thermal insulation of floors, walls, ceilings and roofs. The insulation blocks may also be cut to custom shapes for industrial purposes.

### TECHNICAL SPECIFICATIONS

Jackon Platina insulation boards have a thermal conductivity of 0.031 W/(mK).

### PRODUCT STANDARDS

The Product follows the standard EN 13163:2012, Thermal insulation products for buildings - Factory made expanded polystyrene (EPS) products.

### PHYSICAL PROPERTIES OF THE PRODUCT

The boards have a thickness of 16,5 kg/m<sup>3</sup>, and thicknesses ranging from 10 to 1000 mm. As the product is homogeneous, the results apply to all available thicknesses. Scaling table is provided in Annex 2.

Detailed physical information can be found from the manufacturer's webpage, such as technical properties of each product type and DOP's: [www.jackon.fi](http://www.jackon.fi)

### ADDITIONAL TECHNICAL INFORMATION

Jackon – materiaalipankki – asennusohjeet – tekniset tiedot

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

### PRODUCT RAW MATERIAL COMPOSITION

Product and Packaging Material	Weight, kg	Post-consumer %	Renewable %	Country Region of origin
Polystyrene	1	0	0	Finland
Contained pentane	6%	0	0	
Contained graphite	3-4%	0	0	

### PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	-	-
Minerals	-	-
Fossil materials	100 %	Finland
Bio-based materials	-	-

### SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

## PRODUCT LIFE-CYCLE

### MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

### TRANSPORT AND INSTALLATION (A4-A5)

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

### 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)

The rest of the pentane is assumed to be emitted during the service life of the product; therefore, the mass loss due to this blowing agent is taken into consideration in end-of-life stage. The product is transported to the nearest waste treatment facility and mainly incinerated for energy. The heat and electricity benefits at the end-

of-life have been calculated using European average including Russia and Turkey.

## MANUFACTURING PROCESS

The raw material expandable polystyrene includes blowing agent pentane (6 % of mass). The EPS is first pre-expanded with steam by causing the blowing agent in the EPS to boil, after which the expanded EPS beads are stored for a while. Once the EPS beads have stabilized in temperature and pressure, they are put into mould where they are expanded further, filling the cavities in the mould and fusing together. During the expansion phases most of the pentane (5% from EPS mass) evaporates. Once the block has stabilized, it is cut to boards of wanted thickness with hot wires. The waste EPS beads can mainly be recycled back to the process as such. The products are packaged in plastic film and transported on wooden pallets. The process is illustrated in Figure 1 below.

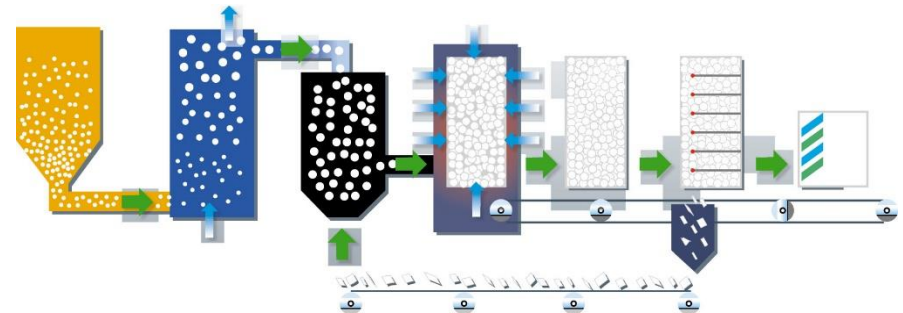


Figure 1. Manufacturing process of EPS insulation boards.

# LIFE-CYCLE ASSESSMENT

## LIFE-CYCLE ASSESSMENT INFORMATION

Period for data	2021
-----------------	------

## DECLARED AND FUNCTIONAL UNIT

Declared unit	kg
Mass per declared unit	1 kg
Functional unit	not defined
Reference service life	min. 50 years, depends on use case

## BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	-
Biogenic carbon content in packaging, kg C	9.19E-04

## SYSTEM BOUNDARY

This EPD covers the cradle to gate with modules 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	
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 and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. Data wasn't available for the used fire retardant but otherwise there are no neglected unit processes covering more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

Share of the fire retardant is less than 2% by mass. As no applicable data was available, it was excluded from the analysis and thus the product was calculated as EPS without FR. The used FR is not a SVHC substance, and it is considered to have low impact on human health as well as low bioaccumulation.

Support activities not directly link to manufacturing, such as employee commuting or municipal waste produced by the employees are excluded from the analysis.

Some 8% of EPS granulate is unused in the production process and recycled back. As the material flows back to the same process as such, it is not treated as a by-product and re-entered as secondary material but rather ignored.

## ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation.

In this study, as per EN 15804, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g. mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

### A3 / A5 waste:

Life-cycle of pallets is estimated to be 10 uses. Thus, 90% of pallets are considered to be reused and 10% incinerated for energy.

The small amount of production waste EPS that is swept from the factory floors is considered dirty and thus cannot be recycled back to the process. This waste is incinerated.

Installation loss is estimated to be 4%. Out of this, 39% is assumed to be collected as clean and recycled. Remaining 31% and 30% are assumed to be incinerated for energy and disposed on landfill respectively.

### Use phase:

Although use phase is not included in the analysis, the remaining pentane is assumed to evaporate during this phase. This is taken into consideration in the weight used in C2 transportation and C3-C4 EOL scenarios. The pentane evaporation is recorded under C4 disposal.

### End of life:

Consumption of energy and natural resources in demolition process are assumed to be negligible. (C1) The distance for transportation to disposal is assumed as 50 km and the transportation method is assumed to be lorry. (C2) Thanks to the energy recovery process end-of-life EPS replaces heat and electricity production. (D)

Allocation used in Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804 - standard.

# 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 CO2e	2,55E0	1,88E-2	6,49E-1	3,22E0	1,56E-2	1,89E-1	MND	MND	MND	MND	MND	MND	MND	0E0	4,5E-3	2,44E0	3,25E-2	-1,61E0
GWP – fossil	kg CO2e	2,58E0	1,88E-2	2,3E-1	2,83E0	1,57E-2	1,7E-1	MND	MND	MND	MND	MND	MND	MND	0E0	4,5E-3	2,44E0	3,25E-2	-1,61E0
GWP – biogenic	kg CO2e	-2,44E-2	1,42E-5	4,12E-1	3,88E-1	1,14E-5	3,48E-3	MND	MND	MND	MND	MND	MND	MND	0E0	3,27E-6	5,16E-5	2,39E-5	1,54E-3
GWP – LULUC	kg CO2e	7,26E-5	5,89E-6	6,96E-3	7,04E-3	4,74E-6	2,85E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1,35E-6	5,02E-6	1,21E-6	-3,15E-3
Ozone depletion pot.	kg CFC-11e	2,02E-9	4,6E-9	9,91E-9	1,65E-8	3,7E-9	1,3E-9	MND	MND	MND	MND	MND	MND	MND	0E0	1,06E-9	2,21E-9	6,85E-10	-1,15E-7
Acidification potential	mol H+e	8,14E-3	6,09E-5	1,76E-3	9,96E-3	6,61E-5	4,24E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1,89E-5	3,07E-4	1,95E-5	-1,29E-2
EP-freshwater3)	kg Pe	9,56E-6	1,59E-7	1,77E-5	2,74E-5	1,28E-7	1,2E-6	MND	MND	MND	MND	MND	MND	MND	0E0	3,66E-8	2,52E-7	4,22E-8	-7,53E-5
EP-marine	kg Ne	1,47E-3	1,36E-5	6,63E-4	2,14E-3	1,99E-5	9,45E-5	MND	MND	MND	MND	MND	MND	MND	0E0	5,69E-6	1,44E-4	1,45E-5	-1,51E-3
EP-terrestrial	mol Ne	1,61E-2	1,51E-4	7,59E-3	2,39E-2	2,2E-4	1,05E-3	MND	MND	MND	MND	MND	MND	MND	0E0	6,29E-5	1,55E-3	7,13E-5	-1,79E-2
POCP (“smog”)	kg NMVOCe	6,12E-3	5,87E-5	5,46E-2	6,08E-2	7,07E-5	2,46E-3	MND	MND	MND	MND	MND	MND	MND	0E0	2,02E-5	3,73E-4	1,05E-2	-4,5E-3
ADP-minerals & metals	kg Sbe	1,6E-6	3,34E-7	1,65E-6	3,58E-6	2,69E-7	2,27E-7	MND	MND	MND	MND	MND	MND	MND	0E0	7,67E-8	4,02E-7	2,39E-8	-2,08E-6
ADP-fossil resources	MJ	8,94E1	3,04E-1	2,61E0	9,23E1	2,45E-1	3,76E0	MND	MND	MND	MND	MND	MND	MND	0E0	6,99E-2	2,18E-1	5,26E-2	-1,94E1
Water use2)	m3e depr.	4,63E-1	1,13E-3	9,7E-2	5,62E-1	9,11E-4	2,38E-2	MND	MND	MND	MND	MND	MND	MND	0E0	2,6E-4	1,82E-2	2,33E-3	-8,74E-2

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 PO4e.



## ADDITIONAL (OPTIONAL) 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
Particulate matter	Incidence	5,91E-8	1,65E-9	5,81E-8	1,19E-7	1,42E-9	5,13E-9	MND	MND	MND	MND	MND	MND	MND	0E0	4,07E-10	1,41E-9	3,65E-10	-1,11E-7
Ionizing radiation <sup>5)</sup>	kBq U235e	5,93E-1	1,33E-3	7,11E-3	6,01E-1	1,07E-3	2,43E-2	MND	MND	MND	MND	MND	MND	MND	0E0	3,06E-4	3,47E-4	2,06E-4	-2,18E-1
Ecotoxicity (freshwater)	CTUe	2,89E1	2,33E-1	9,56E0	3,87E1	1,87E-1	1,65E0	MND	MND	MND	MND	MND	MND	MND	0E0	5,34E-2	1,26E1	6,97E-2	-3,85E1
Human toxicity, cancer	CTUh	5,85E-10	5,86E-12	3,9E-10	9,81E-10	4,79E-12	4,81E-11	MND	MND	MND	MND	MND	MND	MND	0E0	1,37E-12	1,57E-10	1,56E-12	-4,8E-10
Human tox. non-cancer	CTUh	2,76E-8	2,66E-10	6,68E-9	3,46E-8	2,22E-10	1,59E-9	MND	MND	MND	MND	MND	MND	MND	0E0	6,33E-11	6,23E-9	4,14E-11	-1,57E-8
SQP	-	8,62E-2	4,59E-1	2,44E-1	7,89E-1	3,7E-1	9,25E-2	MND	MND	MND	MND	MND	MND	MND	0E0	1,06E-1	6,86E-2	1,85E-1	-1,51E0

4) SQP = Land use related impacts/soil quality.

5) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

## 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	6,74E-1	3,83E-3	4,47E0	5,15E0	3,08E-3	2,09E-1	MND	MND	MND	MND	MND	MND	MND	0E0	8,8E-4	4,99E-3	9,48E-4	-6,69E0
Renew. PER as material	MJ	8,58E-1	0E0	-3,32E-1	5,26E-1	0E0	-3,4E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-3,84E-1	-1,08E-1	0E0
Total use of renew. PER	MJ	1,53E0	3,83E-3	4,14E0	5,68E0	3,08E-3	1,75E-1	MND	MND	MND	MND	MND	MND	MND	0E0	8,8E-4	-3,79E-1	-1,07E-1	-6,69E0
Non-re. PER as energy	MJ	4,38E1	3,04E-1	1,82E0	4,6E1	2,45E-1	1,91E0	MND	MND	MND	MND	MND	MND	MND	0E0	6,99E-2	2,18E-1	5,26E-2	-2,05E1
Non-re. PER as material	MJ	4,55E1	0E0	-2,79E0	4,28E1	0E0	-7,85E-1	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-3,28E1	-9,21E0	2,35E0
Total use of non-re. PER	MJ	8,94E1	3,04E-1	-9,64E-1	8,87E1	2,45E-1	1,12E0	MND	MND	MND	MND	MND	MND	MND	0E0	6,99E-2	-3,25E1	-9,16E0	-1,82E1
Secondary materials	kg	2,12E-5	0E0	2,09E-4	2,3E-4	0E0	9,21E-6	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	5,23E-5
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>	1,75E1	6,33E-5	5,7E-2	1,75E1	5,1E-5	7,02E-1	MND	MND	MND	MND	MND	MND	MND	0E0	1,46E-5	9,7E-4	5,87E-5	-4,03E-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	1,91E-3	2,96E-4	8,14E-3	1,03E-2	2,38E-4	9,78E-4	MND	MND	MND	MND	MND	MND	MND	0E0	6,8E-5	0E0	9,66E-5	-1,32E-1
Non-hazardous waste	kg	8E-2	3,27E-2	2,38E-1	3,51E-1	2,63E-2	4,99E-2	MND	MND	MND	MND	MND	MND	MND	0E0	7,52E-3	0E0	2,09E-1	-2,7E0
Radioactive waste	kg	1,94E-5	2,09E-6	4,95E-6	2,64E-5	1,68E-6	1,36E-6	MND	MND	MND	MND	MND	MND	MND	0E0	4,8E-7	0E0	3,13E-7	-1,19E-4

## 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	1,84E-2	1,84E-2	0E0	2,65E-3	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	1E-2	1E-2	0E0	4,57E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	2,34E-2	0E0	0E0
Materials for energy	kg	0E0	0E0	3,11E-2	3,11E-2	0E0	1,67E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	7,69E-1	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	2,52E1	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 CO2e	2,55E0	1,88E-2	6,49E-1	3,22E0	1,56E-2	1,89E-1	MND	MND	MND	MND	MND	MND	MND	0E0	4,5E-3	2,44E0	3,25E-2	-1,61E0
ADP-minerals & metals	kg Sbe	1,6E-6	3,34E-7	1,65E-6	3,58E-6	2,69E-7	2,27E-7	MND	MND	MND	MND	MND	MND	MND	0E0	7,67E-8	4,02E-7	2,39E-8	-2,08E-6
ADP-fossil	MJ	8,94E1	3,04E-1	2,61E0	9,23E1	2,45E-1	3,76E0	MND	MND	MND	MND	MND	MND	MND	0E0	6,99E-2	2,18E-1	5,26E-2	-1,94E1
Water use	m3e depr.	4,63E-1	1,13E-3	9,7E-2	5,62E-1	9,11E-4	2,38E-2	MND	MND	MND	MND	MND	MND	MND	0E0	2,6E-4	1,82E-2	2,33E-3	-8,74E-2
Secondary materials	kg	2,12E-5	0E0	2,09E-4	2,3E-4	0E0	9,21E-6	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	5,23E-5
Biog. C in product	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
Biog. C in packaging	kg C	N/A	N/A	9,19E-4	9,19E-4	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

## SCENARIO DOCUMENTATION

### Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Ecoinvent 3.6 / 2019: Fair quality. Shares of renewables (hydro, wind & solar) based on Statistics Finland data on renewable electricity production in 2021.
Electricity CO <sub>2e</sub> / kWh	0,0381
District heating data source and quality	Ecoinvent 3.6 / 2019: Fair quality. No district heating but steam production.
District heating CO <sub>2e</sub> / kWh	0,0184

### Transport scenario documentation (A4)

Scenario parameter	Value
Specific transport CO <sub>2e</sub> emissions, kg CO <sub>2e</sub> / tkm	0.0901
Average transport distance, km	170
Capacity utilization (including empty return) %	100
Bulk density of transported products	16,5
Volume capacity utilization factor	1

### End of life scenario documentation

Scenario parameter	Value
Collection process – kg collected separately	0,78
Collection process – kg collected with mixed waste	0,21
Recovery process – kg for re-use	-
Recovery process – kg for recycling	0,01
Recovery process – kg for energy recovery	0,77
Disposal (total) – kg for final deposition	0,21
Scenario assumptions e.g. transportation	50

## 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.

RTS PCR (Finnish version, 26.8.2020)

Jackon Platina EPS LCA background report 4.4.2023

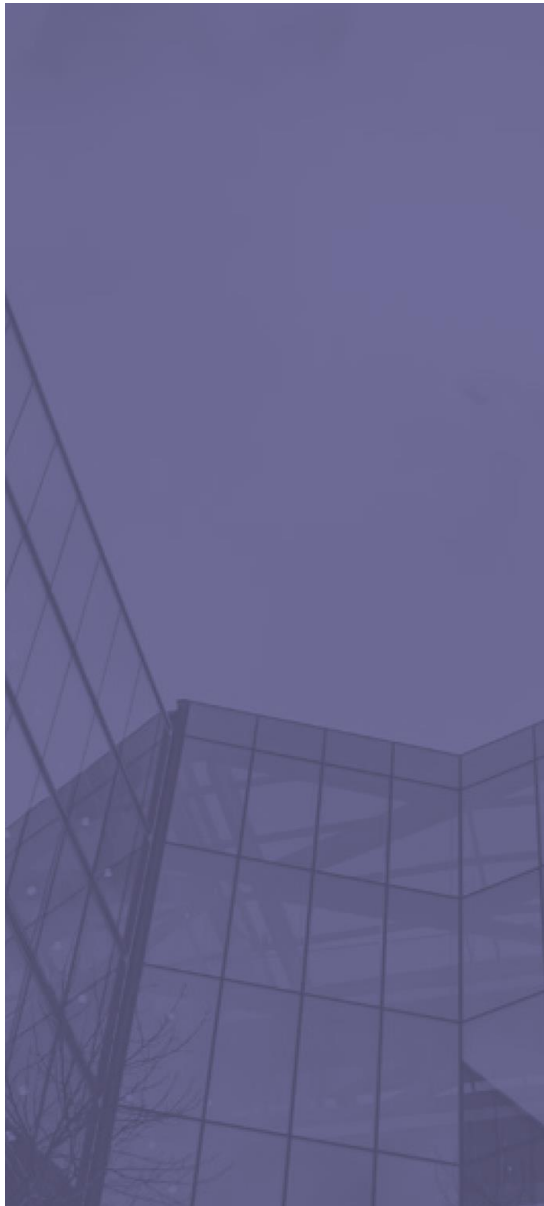
## ABOUT THE MANUFACTURER

Jackon Finland Oy is part of Bewi group. They produce modern, energy-efficient solutions and components for the construction and industry.

A comprehensive portfolio of EPS, XPS, EPP and EPE products includes insulation, panels, wet board and other building systems, as well as packaging products and technical components for industry.

## EPD AUTHOR AND CONTRIBUTORS

<b>Manufacturer</b>	Jackon Finland Oy
<b>EPD author</b>	Laila Huovinen-Manu, Inkeri Seppälä, Sweco Finland
<b>EPD verifier</b>	Anastasia Sipari, One Click LCA
<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 Plastic-based insulation



# 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	Anastasia Sipari, One Click LCA
EPD verification started on	16.09.2022
EPD verification completed on	04.05.2023
Approver of the EPD verifier	The Building Information Foundation RTS sr

Author & tool verification	Answer
EPD author	Laila Huovinen-Manu, Inkeri Seppälä, Sweco Finland
EPD Generator module	Plastic-based Products and Systems
Independent software verifier	Silvia Vilčeková, Silcert sro:
Software verification date	07.05.2021

## 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.

Anastasia Sipari, One Click LCA

## 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 CO2e	2,46E0	1,86E-2	2,34E-1	2,71E0	1,56E-2	1,65E-1	MND	MND	MND	MND	MND	MND	MND	0E0	4,46E-3	2,44E0	2,29E-2	-1,58E0
Ozone depletion Pot.	kg CFC-11e	1,77E-9	3,66E-9	8,51E-9	1,39E-8	2,94E-9	1,08E-9	MND	MND	MND	MND	MND	MND	MND	0E0	8,4E-10	2,03E-9	5,46E-10	-1,12E-7
Acidification	kg SO2e	6,83E-3	3,98E-5	1,26E-3	8,13E-3	3,2E-5	3,42E-4	MND	MND	MND	MND	MND	MND	MND	0E0	9,15E-6	2,13E-4	2,81E-5	-1,14E-2
Eutrophication	kg PO43e	5,79E-4	8,04E-6	4,19E-4	1,01E-3	6,47E-6	1,25E-4	MND	MND	MND	MND	MND	MND	MND	0E0	1,85E-6	1,91E-4	1,17E-3	-2,33E-3
POCP ("smog")	kg C2H4e	1,27E-3	2,3E-6	5,99E-5	1,33E-3	2,03E-6	5,47E-5	MND	MND	MND	MND	MND	MND	MND	0E0	5,8E-7	3,73E-6	4,77E-6	-3E-4
ADP-elements	kg Sbe	1,6E-6	3,34E-7	1,65E-6	3,58E-6	2,69E-7	2,27E-7	MND	MND	MND	MND	MND	MND	MND	0E0	7,67E-8	4,02E-7	2,39E-8	-2,08E-6
ADP-fossil	MJ	8,94E1	3,04E-1	2,61E0	9,23E1	2,45E-1	3,76E0	MND	MND	MND	MND	MND	MND	MND	0E0	6,99E-2	2,18E-1	5,26E-2	-1,94E1

## ANNEX 2: SCALING TABLE FOR 1 M<sup>2</sup> OF PRODUCT

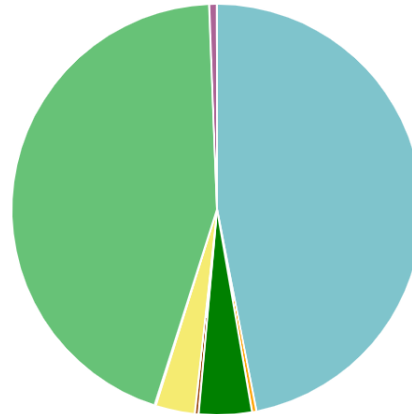
The product is homogenous, and thus the environmental impacts of products with different thicknesses can be calculated using the following scaling factors.

Thickness mm	Mass kg	Thickness mm	Mass kg	Thickness mm	Mass kg	Thickness mm	Mass kg	Thickness mm	Mass kg
10	0,17	210	3,47	410	6,77	610	10,07	810	13,37
20	0,33	220	3,63	420	6,93	620	10,23	820	13,53
30	0,50	230	3,80	430	7,10	630	10,40	830	13,70
40	0,66	240	3,96	440	7,26	640	10,56	840	13,86
50	0,83	250	4,13	450	7,43	650	10,73	850	14,03
60	0,99	260	4,29	460	7,59	660	10,89	860	14,19
70	1,16	270	4,46	470	7,76	670	11,06	870	14,36
80	1,32	280	4,62	480	7,92	680	11,22	880	14,52
90	1,49	290	4,79	490	8,09	690	11,39	890	14,69
100	1,65	300	4,95	500	8,25	700	11,55	900	14,85
110	1,82	310	5,12	510	8,42	710	11,72	910	15,02
120	1,98	320	5,28	520	8,58	720	11,88	920	15,18
130	2,15	330	5,45	530	8,75	730	12,05	930	15,35
140	2,31	340	5,61	540	8,91	740	12,21	940	15,51
150	2,48	350	5,78	550	9,08	750	12,38	950	15,68
160	2,64	360	5,94	560	9,24	760	12,54	960	15,84
170	2,81	370	6,11	570	9,41	770	12,71	970	16,01
180	2,97	380	6,27	580	9,57	780	12,87	980	16,17
190	3,14	390	6,44	590	9,74	790	13,04	990	16,34
200	3,30	400	6,60	600	9,90	800	13,20	1000	16,50

### ANNEX 3: LIFE-CYCLE ASSESSMENT RESULT VISUALIZATION

Global warming potential fossil kg CO2e – Life-cycle stages

- A1 Raw material extraction and processing - 46.9%
- A2 Transport to the manufacturer - 0.3%
- A3 Manufacturing - 4.2%
- A4 Transport to the building site - 0.3%
- A5 Installation into the building - 3.1%
- C2 Waste transport - 0.1%
- C3 Waste processing - 44.5%
- C4 Waste disposal - 0.6%





Life-cycle impacts by stage as stacked columns

