Instytut Techniki Budowlanej
00-611 Warsaw, Filtrowa 1

Thermal Physics, Acoustics and Environment Department
02-656 Warsaw, Ksawerów 21

CERTIFICATE № 278/2021
of TYPE III ENVIRONMENTAL DECLARATION

Product:

FIBRIS softboard and hardboard produced in Przemyśl

Manufacturer:

FIBRIS S.A.

ul. Ofiar Katynia 17, 37-700 Przemyśl, Poland

confirms the correctness of the data included in the development of
Type III Environmental Declaration and accordance with the requirements of the standard

PN EN 15804+A1

Sustainability of construction works.
Environmental product declarations.
Core rules for the product category of construction products.

This certificate, issued for the first time on 13th December 2021 is valid for 5 years
or until amendment of mentioned Environmental Declaration

Head of the Thermal Physic, Acoustics
and Environment Department
Agnieszka Winkler-Skalna, PhD

INSTYTUT TECHNIKI BUDOWLANEJ

Deputy Director
for Research and Innovation
Krzysztof Kuczyński, PhD

Warsaw, December 2021

FIBRIS softboards and hardboards produced in Przemyśl

FIBRIS
DURABILITY FROM NATURE

Release date: 13.12.2021
Validity date: 13.12.2026

ECO PLATFORM EPD EN 15804 VERIFIED

Manufacturer:

FIBRIS S.A.
37-700 Przemyśl, Ofiar Katynia 17, POLAND
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EPD program operator:

Instytut Techniki Budowlanej (ITB),
00-611 Warsaw, Poland, Filtrowa 1,
www.itb.pl
Contact person: Dominik Bekierski, energia@itb.pl
ITB is the verified member of The European Platform for EPD program operators and LCA practitioners.

Basic information

This declaration is the type III Environmental Product Declaration (EPD) based on EN 15804 and verified according to ISO 14025 by an external auditor. It contains the information on the impacts of the declared construction materials on the environment. Their aspects were verified by the independent body according to ISO 14025. Basically, a comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804 (see point 5.3 of the standard).

Life cycle analysis (LCA): A1-A3, C1-C4, D modules in accordance with EN 15804 (Cradle to Gate with options)

The year of preparing the EPD: 2021

Product standard: PN-EN 13986

Declared durability: Under normal conditions, FIBRIS softboard and hardboard has reference service life (RSL) of 50 years

PCR: ITB PCR A (PCR based on EN 15804)

Declared unit: 1 Mg of ready-to-use board

Reasons for performing LCA: B2B

Representativeness: Polish product

Manufacturer

Polish manufacturer of fiberboard, which is produced by wet method. Company was established in 1959 as *Zakłady Płyt Pilśniowych* in Przemyśl, so it has been on the market for more than half a century. Over the years has been developing its products, manufacturing process, and internal structures. From 2004 company changed for FIBRIS S.A. and products were certified according to CE standards. Company's experience and innovative technological solutions place it high in the ranking of fiberboard manufacturers worldwide. Currently, it is producing porous and hard boards on four production lines, and also distribute other wood-based products. In 2018/2019 another production line was developed as part of further development, which increased the processing capacity for porous boards.

Quality

From the very beginning, FIBRIS S.A. have focused on the efficient production of the highest quality and first class products. It's quality is confirmed by the ISO certificate 9001:2015, also by FSC and PEFC certification, which certifies that the raw material used by us for production comes from a legitimate source.

Product Information

FIBRIS boards are made using the wet method, produced on five production lines. Company specializes in the production of porous panels (eg Fibro Natur Standard, Thermo, WR, Wall, Izopanel, Eco-Bit). These boards have many uses, but they are most commonly used in all construction industries. FIBRIS also manufactures hardboards (including varnished, perforated, oiled) that are used in the furniture, packaging and steel industries. Another product is decorative colored wood chips, which can be found in gardens, alleys or flowerbed.

Below you may find softboard and hardboard types with specific description, which are grouped in this Environmental declaration.

Porous softpanel	STANDARD
	THERMO
	WR
Hardboard	HARDBOARD
	OIL TEMPERED HARDBOARD

STANDARD

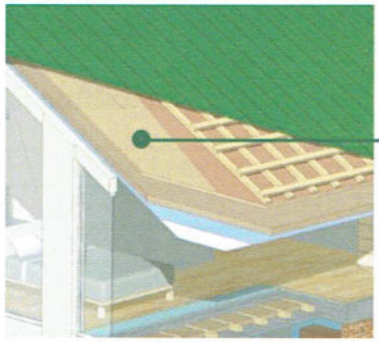
Fibro Natur Standard is a porous fibreboard for universal use. This product is widely used in the construction industry for thermal-acoustic insulation of walls, floors and roofs, as well as in the packaging industry and among manufacturers of educational materials. Due to its technical parameters, insulation properties and the content of ecological raw materials, this board is gaining more and more supporters among customers who value the highest quality and environmentally friendly products.

Specification and key characteristics of STANDARD softboard

Standard sizes	1200/1220 x 1830/ 2440/ 2500/ 2700/ 2750/ 3050 mm
Nominal thickness	5.0; 7.0; 8.0; 9.5; 12.0; 15.0; 19.0; 20.0; 25.0 mm
Density	≥ 230 kg/m^3
Standard	PN-EN 13986 and PN-622-1; PN-622-4
Declared thermal conductivity λD	0.050 W/mK
Fire classification (EN 13501-1)	E

Advantages

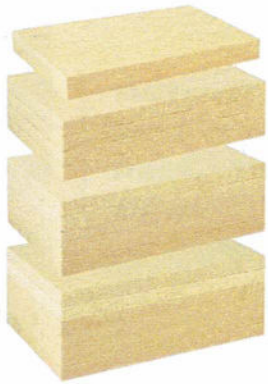
- ✓ high compressive strength,
- ✓ good thermal and acoustic insulation,
- ✓ easy to use,
- ✓ a board made of natural, ecological materials,
- ✓ can be used in underfloor heating,
- ✓ great insulation for asphalt screed.



Fibro Natur STANDARD
It is excellent as mason as thermal insulation of roof.

THERMO

Due to its excellent thermal parameters, Fibro Natur Thermo is a board intended for thermal and acoustic insulation of walls and roofs of buildings. It provides excellent protection against heat in summer and heat loss in winter. The use of natural ingredients in the board regulates the microclimate in the insulated rooms and ensures high comfort of use. The offered formats and the ease of machining make the board perfect for insulating new and renovated buildings.

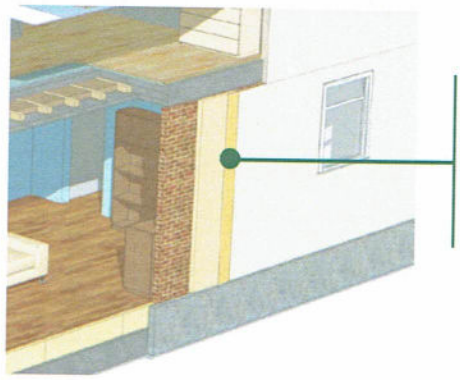


Specification and key characteristics of THERMO softboard

Standard sizes	1220/1200 x 600/800/2440/2500 mm
Nominal thickness	20; 30; 40; 60; 80; 100; 120 mm
Density	170 +/- 20 kg/m^3
Standard	PN-EN 13171
Declared thermal conductivity λD	0.040 W/mK
Fire classification (EN 13501-1)	E

Advantages

- ✓ excellent thermal and acoustic insulation,
- ✓ easy and simple assembly,
- ✓ wind barrier,
- ✓ high comfort of using insulated rooms,
- ✓ environmentally friendly product,
- ✓ diffusion open material,
- ✓ regulates the microclimate,
- ✓ does not irritate the skin,
- ✓ high compressive strength.



Fibro Natur THERMO
It checks for wall insulation.

WR

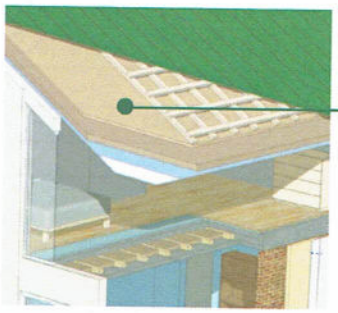
Fibro Natur WR is a porous fiberboard that works very well as the last element of the thermal insulation of roofs. The hydrophobic protection makes the board a hydrophobic material and is perfect for this type of structure. The use of a special tongue-and-groove makes the board tight, which prevents the penetration of moisture into the building interior and ensures installation stability.

Specification and key characteristics of WR softboard

Standard sizes	Edge finish-tongue and groove 580 x 2500 mm
Nominal thickness	18.0; 22.0; 35.0; 52.0; 60.0 mm
Density	270 +/- 20 kg/m^3
Standard	PN-EN 13171
Declared thermal conductivity λD	0.050 W/mK
Fire classification (EN 13501-1)	E

Advantages

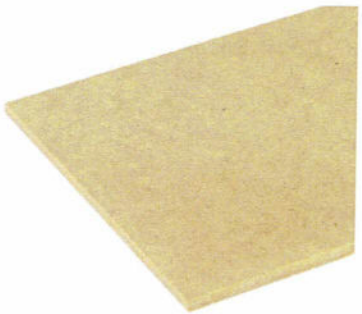
- ✓ perfect roof insulation against unfavorable weather conditions (UV radiation, dust, precipitation, wind),
- ✓ good acoustic insulation,
- ✓ a cutter making the structure tight,
- ✓ quick assembly and high compressive strength,
- ✓ diffusion open plate,
- ✓ environmentally friendly ecological product,
- ✓ high compressive strength,
- ✓ acts as an additional thermal insulation from the outside,
- ✓ plate reducing linear thermal bridges.high compressive strength.



Fibro Natur WR
prevents the penetration of moisture in the roof structure.

HARDBOARD

Hardboard is a hard fiberboard which, due to its properties, is used in various industries. Its physical and mechanical properties show that it can be used in industries such as furniture (frames for upholstered furniture), packaging industry (boxes for food



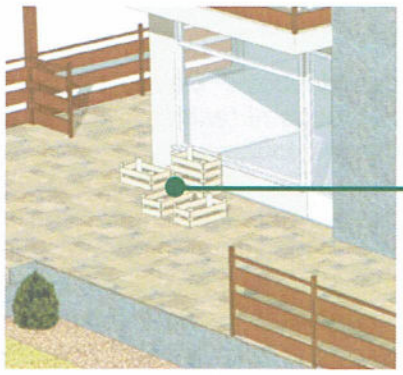
products), automotive industry (elements inside vehicles), steel (dimensions protection during transport) and for production wood accessories.

Specification and key characteristics of HARDBOARD

Standard sizes	1220/1610 x 1830/ 2140/ 2440/ 2750/ 3050 mm
Nominal thickness	2.0; 2.4; 2.8; 3.0; 3.2; 4.0; 5.0; 6.0; 6.4; 7.0; 8.0 mm
Density	$\geqslant$ 900 kg/m^3
Standard	PN-EN 13 986. PN-622-1; 622-2
Fire classification (EN 13501-1)	E

Advantages

- ✓ universal use,
- ✓ high flexibility and high strength,
- ✓ natural ingredients,
- ✓ possibility of refinement,
- ✓ natural adhesive properties,
- ✓ top-class elasticity and durability.



HARDBOARD is applicable in the packaging industry.

HARDBOARD OIL TEMPERED

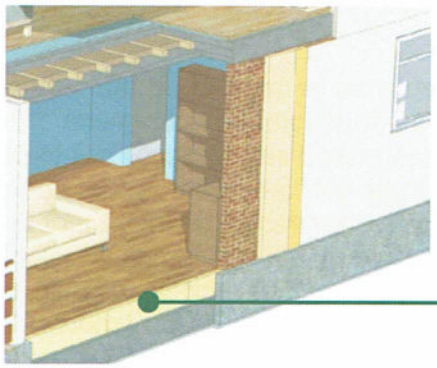
Hardboard Oil Tempered is a hardboard with vegetable oil. It is intended for applications primarily in the construction and packaging industries and in products where increased hydrophobic resistance is required. During the production process, oil is dosed into the pulp and the web sheets are then transferred to the pressing operation. The plate is protected with oil throughout its entire cross-section.

Specification and key characteristics of HARDBOARD OIL TEMPERED

Standard sizes	1220 / 1610 x 1830 / 2140 / 2440 / 2750 / 3050 mm
Nominal thickness	2.0; 2.4; 2.8; 3.0; 3.2; 4.0; 5.0; 6.0; 6.4; 7.0 mm
Density	$\geqslant$ 900 kg/m^3
Standard	PN-EN 13 986. PN-622-1; 622-2
Fire classification (EN 13501-1)	E

Advantages

- ✓ universal use,
- ✓ high flexibility and high strength,
- ✓ natural ingredients,
- ✓ possibility of refinement,
- ✓ natural adhesive properties,
- ✓ elasticity and durability of the highest class,
- ✓ high resistance to moisture,
- ✓ strength and flexibility,
- ✓ protects structures against weather conditions.



OIL TEMPERED it can be used as an insulating element of the floor.

LIFE CYCLE ASSESSMENT (LCA) – general rules applied

Allocation

The allocation rules used for this EPD are based on general ITB-PCR A. The FIBRIS softboard and hardboard products production is a line process with multiple co-products. Allocation was done on product mass basis.

All impacts from raw materials extraction are allocated in A1 module of EPD. 99.9% of impacts from line production were inventoried and allocated to FIBRIS softboard and hardboard production. Municipal waste and waste water of the whole factory were allocated to module A3. Electricity was inventoried for whole production process. Emissions are measured separately as well and presented in A3 module.

System limits

The life cycle analysis of the examined products covers "Product Stage and End of Life Stage", A1-A3, C1-C4 and D modules (Cradle to Gate with options) in accordance with EN 15804+A1 and ITB-PCR A. Details on systems limits are provided in product specific report. All materials and energy consumption inventoried in factory were included in calculation. Office impacts were also taken into consideration. In the assessment, all significant parameters from gathered production data are considered, i.e. all material used per formulation, utilized thermal energy, internal fuel and electric power consumption, direct production waste, and all available emission measurements. This study also takes into account some material flows of less than 1% and energy flows with a proportion of less than 1 %. It can be assumed that the total sum of omitted processes does not exceed 5% of all impact categories. In accordance with EN 15804, machines and facilities (capital goods) required for and during production are excluded, as is transportation of employees.

Modules A1 and A2: Raw materials supply and transport

Raw materials for FIBRIS softboard and hardboard components production come from local suppliers and more distant locations. Data on transport of the different products to the manufacturing plants is collected and modelled for factory by assessor. Means of transport include trucks and Polish and European fuel averages are applied.

The main raw material for module A1 is wood, which has a 'negative' biogenic carbon dioxide value. Wooden waste generated during the mechanical debarking is further internally used in the energy generation process. The values of the environmental impact of the product in module A1 of a component are the sum of raw materials in the production of soft and hardboards.

Module A3: Production

Figure 1 shows the general technological scheme for the production of hard, porous and refined fill plates in FIBRIS factory in Przemyśl. The process uses electricity, coal and biomass to produce heat. All production waste generated during production and manufacture is recycled. Packaging materials were accounted.

Modules C1-C4 and D: End-of-life scenario

Deconstruction of the softboards and hardboards can be performed as a part of refurbishment or demolition process of a building. Therefore, the environmental impact of C1 module is considered to be minor (<1%) and is neglected. The end-of-life scenario has been generalized for all FIBRIS softboard and hardboard products. It is assumed that at the end-of-life 100% of FIBRIS hardboard and softboard products can be recovered and then shipped to central collection points. Intact and clean products can be re-used while product unsuitable for the re-use can be incinerated or disposed of at landfills. Uncoated products can be incinerated in a household furnace. The assumed transport distance from the product deconstruction place to waste processing (C2) is 50 km on > 16 t loaded lorry with 75% capacity utilization and fuel consumption of 35 l per 100 km. The benefits presented in module D are associated with the re-use and incineration of the recovered softboards and hardboards.

Table 1. The end-of-life scenario for the softboard and hardboard products

Products	Material recovery	Re-use	Energy recovery
softboards and hardboards	100%	50%	50%

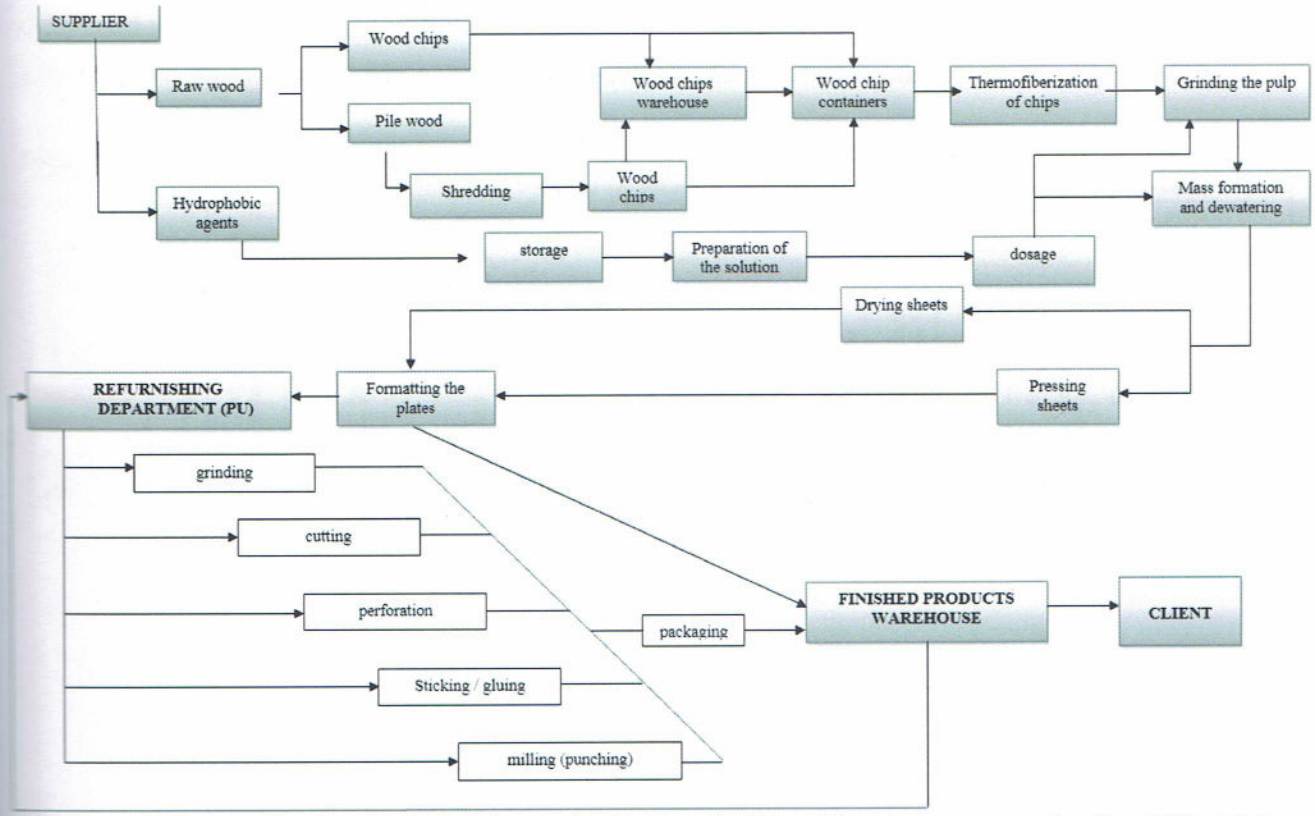


Figure 1. General technological scheme for the production of hard, porous and refined fill plates in FIBRIS factory in Przemyśl.

Data collection period

The data for manufacture of the examined products refer to period between 01.01.2020-31.12.2020. The life cycle assessments were prepared for Poland as reference area.

Data quality

The values determined to calculate the LCA originate from verified FIBRIS inventory data.

Assumptions and estimates

The impacts of the representative FIBRIS products for each softboard and hardboard were aggregated using weighted average. The weighted average method was used according to the percentage of each product in FIBRIS products based on the relation to whole production quantity. Impacts for each product and factory were inventoried and calculated separately.

Calculation rules

LCA was done in accordance with PCR A document.

Databases

The data for the processes come from the following databases: Ecoinvent, ITB-Data, specific EPDs. Specific data quality analysis was a part of external ISO 14001 audit. Characterization factors are CML based on EN 15804+A1 version (PN-EN 15804+A1:2014-04)

LIFE CYCLE ASSESSMENT (LCA) - Results

Declared unit

The declaration refers to 1 Mg of the FIBRIS softboards and hardboards.

Table 2. System boundaries for environmental characteristic for FIBRIS softboards and hardboards

Environmental assessment information (MNA – Module not assessed, MD – Module Declared, INA – Indicator Not Assessed)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction 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
MD	MD	MD	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MD	MD	MD	MD	MD

FIBRIS softboard and hardboard

Environmental impacts: (DU) 1 Mg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Global warming potential	kg CO_2	-1.84E+02	2.35E+01	1.06E+03	9.04E+02	0.00E+00	5.62E-05	7.82E-01	0.00E+00	-2.07E+02
Depletion potential of the stratospheric ozone layer	kg CFC 11	1.31E-05	0.00E+00	1.92E-05	3.23E-05	0.00E+00	0.00E+00	2.81E-06	0.00E+00	4.14E-06
Acidification potential of soil and water	kg SO_2	6.82E-01	1.21E-01	3.80E+00	4.60E+00	0.00E+00	4.10E-07	7.82E-01	0.00E+00	1.74E+00
Formation potential of tropospheric ozone	kg Ethene	3.45E-01	1.08E-02	2.58E-06	3.56E-01	0.00E+00	2.99E-08	2.19E-02	0.00E+00	9.23E-02
Eutrophication potential	kg $(PO_4)^{3-}$	4.77E-01	1.90E-02	2.29E-01	7.26E-01	0.00E+00	7.24E-08	2.57E-01	0.00E+00	-7.89E-02
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb	5.12E-01	0.00E+00	3.94E-03	5.15E-01	0.00E+00	0.00E+00	3.04E-04	0.00E+00	5.13E-02
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	2.01E+03	1.74E+02	1.19E+04	1.41E+04	0.00E+00	4.03E-04	6.57E+02	0.00E+00	4.49E+03

Environmental aspects: (DU) 1 Mg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	4.76E+04	2.36E-01	7.95E+02	4.84E+04	0.00E+00	2.43E-06	1.78E+03	0.00E+00	3.08E+03
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.31E+03	1.82E+02	1.25E+04	1.50E+04	0.00E+00	4.23E-04	7.75E+02	0.00E+00	4.70E+03
Use of secondary material	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	0.00E+00	9.11E+00	0.00E+00	9.11E+00	0.00E+00	2.12E-05	0.00E+00	0.00E+00	9.11E-01
Use of non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m^3	2.79E+01	8.07E-05	4.44E-02	2.79E+01	0.00E+00	1.87E-10	5.59E+01	0.00E+00	-4.76E+01

Other environmental information describing waste categories: (DU) 1 Mg

Indicator	Unit	A1	A2	A3	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1.11E-03	6.19E-04	4.48E-02	4.59E-02	0.00E+00	8.14E-06	8.02E-04	0.00E+00	6.63E-03
Non-hazardous waste disposed	kg	1.80E+01	1.24E-01	3.91E-01	1.84E+01	0.00E+00	1.52E-03	9.24E+00	0.00E+00	-4.66E+00
Radioactive waste disposed	kg	8.25E-03	0.00E+00	0.00E+00	8.25E-03	0.00E+00	0.00E+00	1.84E-03	0.00E+00	1.63E-03
Components for re-use	kg	0.00E+00	0.00E+00	8.58E+01	8.58E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.58E+00
Materials for recycling	kg	0.00E+00	0.00E+00	3.45E+00	3.45E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.45E-01
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.13E+03	0.00E+00	-3.13E+03

Verification

The process of verification of this EPD is in accordance with EN ISO 14025, ISO 21930 and ECO checklist document. After verification, this EPD is valid for a 5-year-period. EPD does not have to be recalculated after 5 years, if the underlying data have not changed significantly.

The basis for LCA analysis was EN 15804 and ITB PCR A
Independent verification corresponding to ISO 14025 (subclause 8.1.3) ☒ external ☐ internal
External verification of EPD: PhD. Eng. Halina Prejzner LCA, LCI audit and input data verification: M.Sc. Eng. Dominik Bekierski, d.bekierski@itb.pl Verification of LCA: PhD Eng. Justyna Tomaszewska, j.tomaszewska@itb.pl

References

- ITB PCR A- General Product Category Rules for Construction Products
- ISO 14025:2006 Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures
- ISO 21930:2017 Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services
- ISO 14044:2006. Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 15686-1:2011 Buildings and constructed assets -- Service life planning -- Part 1: General principles and framework
- ISO 15686-8:2008 Buildings and constructed assets -- Service-life planning -- Part 8: Reference service life and service-life estimation
- EN 15804:2012+A1:2013 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- EN 15942:2011 Sustainability of construction works - Environmental product declarations - Communication format business-to-business
- PN-EN 13986+A1:2015-06 Płyty drewnopochodne do stosowania w budownictwie -- Właściwości, ocena zgodności i oznakowanie

KIEROWNIK
Zakładu Fizyki Cieplnej, Akustyki i Środowiska

dr inż. Agnieszka Winkler-Skalna

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00-611 Warszawa, ul. Filtrowa 1

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02-656 Warszawa, ul. Ksawerów 21

ŚWIADECTWO nr 278/2021
DEKLARACJI ŚRODOWISKOWEJ III TYPU

Wyrób:

Płyty pilśniowe porowate i twarde FIBRIS S.A. produkowane w Przemyślu

Wnioskodawca:

FIBRIS S.A.
ul. Ofiar Katynia 17, 37-700 Przemyśl, Polska

potwierdza się poprawność ustalenia danych uwzględnionych przy opracowaniu Deklaracji Środowiskowej III typu oraz zgodność z wymaganiami normy

PN EN 15804+A1

Zrównoważoność obiektów budowlanych.
Deklaracje środowiskowe wyrobów.
Podstawowe zasady kategoryzacji wyrobów budowlanych.

Niniejsze świadectwo, wydane po raz pierwszy 13 grudnia 2021 r. jest ważne 5 lat, lub do czasu zmiany wymienionej Deklaracji Środowiskowej

Kierownik
Zakładu Fizyki Cieplnej,
Akustyki i Środowiska
dr inż. Agnieszka Winkler-Skalna

INSTYTUT TECHNIKI BUDOWLANEJ

Zastępca Dyrektora
ds. Badań i Innowacji
dr inż. Krzysztof Kuczyński

Warszawa, grudzień 2021 r.