

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A1




Owner of the Declaration	<b>GUTEX Holzfaserplattenwerk H. Henselmann GmbH + Co KG</b>
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-GTX-20200178-IBC1-EN
Issue date	30/10/2020
Valid to	08/10/2025

Wood fibre insulating boards  
**GUTEX Holzfaserplattenwerk**  
**H. Henselmann GmbH + Co KG**

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## 1. General Information

<p><b>GUTEX Holzfaserplattenwerk</b></p> <hr/> <p><b>Programme holder</b>          IBU – Institut Bauen und Umwelt e.V.          Panoramastr. 1          10178 Berlin          Germany</p> <hr/> <p><b>Declaration number</b>          EPD-GTX-20200178-IBC1-EN</p> <hr/> <p><b>This declaration is based on the product category rules:</b>          Wood based panels, 12.2018          (PCR checked and approved by the SVR)</p> <hr/> <p><b>Issue date</b>          30/10/2020</p> <hr/> <p><b>Valid to</b>          08/10/2025</p> <hr/> <p></p> <hr/> <p>Dipl. Ing. Hans Peters          (chairman of Institut Bauen und Umwelt e.V.)</p> <hr/> <p></p> <hr/> <p>Dr. Alexander Röder          (Managing Director Institut Bauen und Umwelt e.V.)</p>	<p><b>Wood fibre insulating boards</b></p> <hr/> <p><b>Owner of the declaration</b>          GUTEX Holzfaserplattenwerk          H. Henselmann GmbH + Co KG          Gutenberg 5          79761 Waldshut-Tiengen</p> <hr/> <p><b>Declared product / declared unit</b>          This Declaration refers to 1 m<sup>3</sup> wood fibre insulating boards manufactured in a dry process with an average weighted density of 167 kg/m<sup>3</sup>. For all other densities, the results can be calculated using the formula indicated in section 5.</p> <hr/> <p><b>Scope:</b>          This Declaration applies for wood fibre insulating boards manufactured in a dry process by GUTEX at its location in Waldshut-Tiengen.</p> <p>The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.</p> <p>The EPD was created according to the specifications of <i>EN 15804+A1</i>. In the following, the standard will be simplified as <i>EN 15804</i>.</p> <hr/> <p><b>Verification</b></p> <table border="1"> <tr> <td colspan="2">The standard <i>EN 15804</i> serves as the core PCR</td> </tr> <tr> <td colspan="2">Independent verification of the declaration and data according to <i>ISO 14025:2010</i></td> </tr> <tr> <td><input type="checkbox"/> internally</td> <td><input checked="" type="checkbox"/> externally</td> </tr> </table> <hr/> <p></p> <hr/> <p>Matthias Klingler          (Independent verifier)</p>	The standard <i>EN 15804</i> serves as the core PCR		Independent verification of the declaration and data according to <i>ISO 14025:2010</i>		<input type="checkbox"/> internally	<input checked="" type="checkbox"/> externally
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## 2. Product

### 2.1 Information about the enterprise

The ecological wood fiber insulation materials from GUTEX are used both in new buildings and in the renovation of old buildings. The insulation boards as well as the wood fiber blown insulation cover all areas of application throughout the house

### 2.2 Product description/Product definition

GUTEX wood fibre insulating boards are board-shaped insulating materials manufactured from wood fibres in accordance with *EN 13171*.

By adding low quantities of polyurethane (PUR) resin, insulating boards are manufactured from wood fibres in a dry process. After production, they are cut and profiled and finished where necessary. Water-repellent and non-water-repellent single-layer insulation panels can be manufactured to a thickness of 240 mm.

Directive (EU) No. 305/2011(CPR) applies for placing the product on the market in the EU/EFTA (with the exception of Switzerland). The product requires a Declaration of Performance taking consideration of the harmonised product standard *EN 13171:2015-04*,

Thermal insulation products for buildings – Factory-made wood fibre (WF) products, and CE marking.

Other application standards:

- *DIN 4108-4:2017-03*, Thermal protection and saving energy in buildings
- *DIN 4108-10:2015-12*, Thermal protection and saving energy in buildings
- *DIN EN 622-4:2019-08*, Fibreboards
- *SIA 2001:2015 data sheet*: Thermally-insulating construction products
- Association pour la certification des matériaux isolants *ACERMI certificate*
- *ÓNORM B 6000:2018-08-01*, Factory-made insulating materials for thermal and/or noise protection in buildings

### 2.3 Application

GUTEX insulating materials can be used in both old and new buildings: as a thermal insulation composite system for the plaster facade, wall insulation for back-ventilated facades, on-roof and/or false ceilings,

insulating ceilings between floors, interior insulation of external walls, insulation of installation levels and impact sound insulation for floors.

## 2.4 Technical Data

The following technical (construction) data is of relevance for GUTEX wood fibre insulating boards on delivery:

### Bautechnische Daten

Name	Value	Unit
Gross density to EN 13171	110 - 250	kg/m <sup>3</sup>
Material dampness at delivery	8	%
Tensile strength rectangular nach EN 13171	5 - 30	N/mm <sup>2</sup>
Thermal conductivity Nominal thermal conductivity to EN 13171	0.037 - 0.047	W/(mK)
Water vapour diffusion resistance factor to EN 13171	4	-
Water vapour diffusion resistance value to EN 13171	E	
Specific thermal capacity	2100	J/(kgK)
Compressive stress at 10% contraction to EN 13171	40-200	kPa

Performance data of the product in accordance with the Declaration of Performance with respect to its essential characteristics according to *EN 13171:2015-04* – Thermal insulation materials for buildings – Factory-made wood fibre (WF) products.

Voluntary information on the product is not a component of CE marking.

## 2.5 Delivery status

GUTEX insulating boards are supplied in thicknesses of 20 mm to 240 mm. The dimensions of each product can be viewed on [www.gutex.de](http://www.gutex.de).

## 2.6 Base materials/Ancillary materials

The product components are indicated as percentages by mass in the following table:

Name	Value	Unit
Coniferous wood: fir/spruce	approx. 95	%
PUR-resin	max. 4	%
Paraffin	max. 1,5	%

The following questions are answered with **no** for the declared product:

The product contains substances included on the ECHA list of substances of very high concern (SVHC, 07.10.2020) exceeding 0.1% by mass: **no**

The product contains other CMR substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass in at least one partial product: **no**

Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the Ordinance on Biocide Products No. (EU) 528/2012): **no**

## 2.7 Manufacture

The manufacturing process is broken down into the following process steps:

1. Delivering the wood chips
2. Defibrating the wood chips using the defibrator process
3. Hydrophobing the fibres with paraffin
4. Drying the fibres in the flow dryer
5. Glueing the fibres with PUR resin
6. Scattering the fibres on the forming belt to form a mat
7. Curing the mat in the calibration and hardening unit
8. Dividing up, profiling and assembling

The location is certified to *ISO 9001*.

## 2.8 Environment and health during manufacturing

Owing to the manufacturing conditions, no special statutory or regulatory measures are required as regards employee health protection. The statutory limit values are fallen short of.

Environmental protection during the manufacturing process:

**Used air:** Emissions are significantly lower than the limit values specified by the immission protection approval.

**Waste water:** The production process does not involve waste water.

**Noise emissions:** Measured values are below the permissible values of the immission protection approval thanks to sound protection measures.

The location is certified to *ISO 14001* and *EMAS*.

## 2.9 Product processing/Installation

Wood-processing machinery such as conventional portable circular saws and jigsaws are suitable for processing GUTEX wood fibre boards.

## Industrial and environmental protection

The guidelines provided by the professional liability associations must be maintained during processing of wood fibre insulating boards.

No environmental pollution is incurred by processing and/or installing the wood fibre boards. No special measures need to be taken to protect the environment.

## 2.10 Packaging

Disposable pallets made of wood, cardboard, PE straps and PE stretch foil are used for packaging and can be directed to the recycling process.

## 2.11 Condition of use

The contents comply with those of the base material composition in section 2.6.

## 2.12 Environment and health during use

No environmental pollution or damage to health can be anticipated if GUTEX wood fibre boards are used as designated. The insulating board components are not referred to in the list of candidates in Annex IV of the REACH Directive. Pollutants of health relevance are not emitted by the boards.

## 2.13 Reference service life

When used as designated, the useful life of GUTEX insulating boards complies with at least the useful life of the respective building. No reference service life is declared on account of the multiple application possibilities.

In accordance with the *BNB 2017* evaluation system for sustainable building, a reference service life of 40 years is indicated for wood fibre insulating boards.

### 2.14 Extraordinary effects

#### Fire

All of the insulating boards listed comply with Euro class E in accordance with *DIN EN 13501-1*. The same combustion gases arise as when burning fir and/or spruce wood.

#### Fire protection

Name	Value
Building material class	E

#### Water

No ingredients are washed out which could be hazardous to water.

#### Mechanical destruction

GUTEX insulating boards can be damaged when exposed to too high mechanical stresses (pressure

and traction). The boards display an inconsistent appearance when fractured or damaged. No damage is incurred for the environment even when subject to unforeseen destruction.

### 2.15 Re-use phase

Provided they are untreated and undamaged, GUTEX wood fibre boards can be easily segregated and reused for the same application when converting or completing the usage phase of a building.

GUTEX wood fibre boards can be directed to recycling provided that they have not been contaminated.

### 2.16 Disposal

Owing to the high calorific value (approx. 18 MJ/kg), energetic utilisation for the generation of process energy and electricity in waste wood incineration plants is recommended.

Waste wood category A2; waste code in accordance with AVV (List of Wastes): 170201 or 030105

### 2.17 Further information

Further information is available at [www.gutex.de](http://www.gutex.de).

## 3. LCA: Calculation rules

### 3.1 Declared Unit

The unit taken as a basis for the Declaration is one cubic metre (1 m<sup>3</sup>) wood fibre insulating board with an average weighted density of 167 kg/m<sup>3</sup> by production volume (m<sup>3</sup>/year).

#### Details on declared unit

Name	Value	Unit
Declared unit	1	m <sup>3</sup>
Conversion factor to 1 kg	0.005989	-
Mass reference (mass/declared unit)	167	kg/m <sup>3</sup>

The formulations for the products under review vary within tight limits. For example, the respective percentage of wood is between 94.5 and 96.5%. The manufacturing process is identical. The declaration of an average product should therefore be regarded as significant for the various product variants. What is important is scaling to the corresponding density, as depicted in section 5.

### 3.2 System boundary

EPD type: cradle to gate – with options

This Environmental Product Declaration refers to the product stage (Modules A1–A3, including provision of raw materials, transport, manufacture and packaging materials). Furthermore, an end-of-life scenario (Module D) was also calculated: incineration with energy recovery. Recycling of packaging materials is considered in A5.

### 3.3 Estimates and assumptions

At the EoL, thermal utilisation is assumed with a pallet recycling rate of 100%. Within the framework of this study, no further approximations or estimates of data sets are necessary. Background data sets are available in the GaBi database (*GaBi ts*) for all basic materials.

### 3.4 Cut-off criteria

All operating data, i.e. all of the starting materials used, thermal energy, internal fuel consumption and electricity consumption, all direct production waste as well as all emission measurements available, is taken into consideration in the analysis. Furthermore, data is recorded and taken into consideration for all inputs. Material and energy flows accounting for less than one per cent are also taken into consideration and the cut-off criteria are maintained in accordance with the *IBU PCR, Part A*. It can be assumed that the total of all neglected processes does not exceed 5% in the effective categories. The inclusion of biogenic elements of relevance for the impact categories, e.g. carbon in the form of CO<sub>2</sub>, is taken into consideration within the framework of this Life Cycle Analysis.

### 3.5 Background data

All background data used is taken from the software databases. The data was last revised in 2019. The consistent data sets contained in the GaBi database are documented in the online GaBi documentation *GaBi ts*.

### 3.6 Data quality

The GaBi background data used was last revised in 2019. The quality and representativity of GaBi data as well as the data recorded by GUTEX can be regarded as high.

### 3.7 Period under review

The data used refers to the production processes of financial year 2019 at the GUTEX wood fibre board plant in Waldshut-Tiengen. The Life Cycle Assessment is modelled for Germany as a reference area.

### 3.8 Allocation

Allocation of the plant data in the insulating material plant (production energy, raw materials, additives and auxiliaries, waste etc.), which could not be clearly allocated to the specific products on the basis of the processes or via a formula, was based on mass.

Closed-loop recycling: Redirecting cut-offs, trimmings and waste from sorting insulating material. Leftovers are directed to the shredder where they are combined with fresh wood chips and reused in the production process.

### 3.9 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared

were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account.

The background data is taken from the *GaBi ts* database.

## 4. LCA: Scenarios and additional technical information

The following technical information forms the basis for the declared modules or can be used for developing specific scenarios in the context of a building evaluation if modules are not declared (MND).

### Construction installation process (A5)

This module concerns disposal of the packaging materials (wooden pallets, paper and foil). Thermal recycling is assumed.

### Waste processing (C3)

In terms of disposal of the product, use as a secondary fuel is assumed. The calculated scenario contains a recycling rate of 100%.

The carbon dioxide bound in the product is declared as emissions in accordance with *EN16485*.

### Benefits and loads outside the system boundary D

Once the product has reached end-of-waste status, it is directed to thermal recycling with an R1 value greater than 0.6. The ensuing impacts and credits are declared in Module D.

The impacts and credits from thermal recycling of the packaging (A5) are also indicated in Module D.

When used as designated, the product is not treated with chemicals during use.

## 5. LCA: Results

The results of the Life Cycle Assessment for wood fibre insulating boards with a balanced density of 167 kg/m<sup>3</sup> are summarised below.

### DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction 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
X	X	X	MND	X	MND	MND	MNR	MNR	MNR	MND	MND	MND	MND	X	MND	X

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A1: 1 m<sup>3</sup> wood fibre insulating board

Parameter	Unit	A1-A3	A5	C3	D
Global warming potential	[kg CO <sub>2</sub> -Eq.]	-198.40	21.76	270.00	-184.50
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	8.52E-13	6.95E-15	0.00E+0	-4.70E-12
Acidification potential of land and water	[kg SO <sub>2</sub> -Eq.]	1.32E-1	2.81E-3	0.00E+0	2.39E-1
Eutrophication potential	[kg (PO <sub>4</sub> ) <sup>3</sup> -Eq.]	2.62E-2	5.75E-4	0.00E+0	-6.27E-3
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	1.55E-2	1.79E-4	0.00E+0	2.91E-2
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	9.07E-5	4.83E-7	0.00E+0	-5.10E-5
Abiotic depletion potential for fossil resources	[MJ]	1451.00	5.12	0.00	-2309.00

### RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A1: 1 m<sup>3</sup> wood fibre insulating board

Parameter	Unit	A1-A3	A5	C3	D
Renewable primary energy as energy carrier	[MJ]	316.00	141.29	0.00	-833.40
Renewable primary energy resources as material utilization	[MJ]	2902.00	-137.11	-2765.00	0.00
Total use of renewable primary energy resources	[MJ]	3218.00	4.18	-2765.00	-833.40
Non-renewable primary energy as energy carrier	[MJ]	1227.00	16.80	0.00	-2627.00
Non-renewable primary energy as material utilization	[MJ]	251.00	-11.20	-240.00	0.00
Total use of non-renewable primary energy resources	[MJ]	1478.00	5.57	-240.00	-2627.00
Use of secondary material	[kg]	0.00	0.00	0.00	0.00
Use of renewable secondary fuels	[MJ]	0.00	0.00	0.00	3008.00
Use of non-renewable secondary fuels	[MJ]	0.00	0.00	0.00	0.00
Use of net fresh water	[m <sup>3</sup> ]	0.31	0.05	0.00	-0.26

### RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A1: 1 m<sup>3</sup> wood fibre insulating board

Parameter	Unit	A1-A3	A5	C3	D
Hazardous waste disposed	[kg]	2.95E-6	6.78E-9	0.00E+0	-1.43E-6
Non-hazardous waste disposed	[kg]	5.88E-1	3.07E-1	0.00E+0	-3.31E-2
Radioactive waste disposed	[kg]	1.08E-2	1.78E-4	0.00E+0	-1.26E-1
Components for re-use	[kg]	0.00	0.00	0.00	0.00
Materials for recycling	[kg]	0.00	0.00	0.00	0.00
Materials for energy recovery	[kg]	0.00	0.00	167.00	0.00
Exported electrical energy	[MJ]	0.00	27.75	0.00	0.00
Exported thermal energy	[MJ]	0.00	64.91	0.00	0.00

As there is a linear connection between the results of the LCA and the density of the wood fibre insulating boards, the following formula can be used for obtaining the results of other densities:

$$P(y) = [P(x)/x]*y$$

P(y): LCA indicator for the wood fibre insulating board to be re-calculated

P(x): Indicator of the declared wood fibre insulating board (e.g. Global Warming Potential (GWP))

x: Density of the declared wood fibre insulating board [kg/m<sup>3</sup>] (average: 167 kg/m<sup>3</sup>)

y: Density of the wood fibre insulating board to be re-calculated [kg/m<sup>3</sup>] (e.g. 250 kg/m<sup>3</sup>)

## 6. LCA: Interpretation

In terms of the entire life cycle, manufacturing (A1–A3) and disposal (C and D) represent the phases of environmental relevance. At less than 5%, transport (A2) and disposal of packaging (A5) are of marginal significance in all categories under review.

During the manufacturing phase (A1–A3), PUR resin material and the generation of thermal energy and electricity from the natural gas-powered combined heat-and-power plant are responsible for the majority of environmental impacts.

PUR resin exhibits percentages of between 25 and 40% in most environmental impacts. In terms of the abiotic depletion potential (ADPe), this share even

accounts for 96%. The provision of thermal energy in the impact categories of photochemical ozone creation potential (POCP), acidification potential (AP), eutrophication potential (EP) and abiotic depletion potential of fossil resources (ADPf) ranges between 23 and 33%. Electricity from the company's own in-house combined heat-and-power plant exhibits relevant contributions of around 10% in EP, AP and ADPf, while electricity from regenerative sources used has a marginal influence here of < 1%.

Where the photochemical ozone creation potential (POCP) is concerned, thermal utilisation of product waste accounts for approx. 20%.

## 7. Requisite evidence

### 7.1 Formaldehyd

The following test is representative for all of the products declared.

**Measuring agency:** Bremer Umweltinstitut GmbH (independent and accredited analysis and research institute, Bremen, Germany)

**Test report, date:** *Test report AZ: K 9731 FM-K* dated 22.06.2020, Thermowall

**Result:** The test concerning formaldehyde content was performed in accordance with *EN 717-1*. The equalisation concentration of formaldehyde is 0.02 mg/m<sup>3</sup>.

### 7.2 MDI

The following test is representative for all of the products declared.

**Measuring agency:** Bremer Umweltinstitut GmbH (independent and accredited analysis and research institute, Bremen, Germany)

**Test report, date:** *Test report AZ: K6635 FM* dated 02.05.2018, Thermowall

**Result:** MDI emissions fall below the detection limit.

### 7.3 Pre-treatment of substances used

No waste wood is used in the manufacture of GUTEX wood fibre insulating boards.

### 7.4 VOC emissions

The following test is representative for all of the products declared.

**Measuring agency:** Bremer Umweltinstitut GmbH (independent and accredited analysis and research institute, Bremen, Germany)

**Test report, date:** *Test report AZ: K 6635 FM* dated 02.05.2018, Thermowall

### AgBB overview of results (28 days)

Name	Value	Unit
TVOC (C6 - C16)	35	µg/m <sup>3</sup>
Sum SVOC (C16 - C22)	2	µg/m <sup>3</sup>
R (dimensionless)	0.132	-
VOC without NIK	*	µg/m <sup>3</sup>
Carcinogenic Substances	*	µg/m <sup>3</sup>

\* = not detectable

### 7.5 Lindane/PCP

No additives containing pesticides are used in the manufacture of GUTEX wood fibre insulating boards. The following test is representative for all of the products declared.

**Measuring agency:** Bremer Umweltinstitut GmbH (independent and accredited analysis and research institute, Bremen, Germany)

**Test report, date:** *Test report AZ: K 6635 FM* dated 02.05.2018, Thermowall

**Result:** The measured values are below the detection limit.

## 8. References

### PCR, Part A

Product category rules for building-related products and services, Part A: Calculation rules for the Life Cycle Assessment and requirements on the Background Report, [www.ibu-epd.com](http://www.ibu-epd.com), version 1.8, 2019

### PCR: Wood-based panels

Product category rules for building-related products and services, Part B: Requirements on the EPD for

wood-based materials, Institut Bauen und Umwelt e.V. (pub.), 12.2018

### GaBi ts

GaBi 9 dataset documentation for the software system and databases, LBP (University of Stuttgart) and thinkstep AG, Leinfelden-Echterdingen, 2020 (<http://www.gabi-software.com/deutsch/databases/gabi-databases/>), SP 40

**BNB 2017**

BBSR table: "Useful life of components for life cycle assessments in accordance with the BNB", Evaluation system for sustainable building, Federal Institute for Building, Urban Affairs and Regional Planning, Presentation II on Sustainable Building; available online at <https://www.nachhaltigesbauen.de/de/baustoff-und-gebaeuedaten/nutzungsdauern-von-bauteilen.html> (last revised 02/2017)

**AVV**

Ordinance governing the European List of Wastes (List of Wastes – AVV) dated 10.10.2001

**EMAS**

EMAS Directive (EC) No. 1221/2009 on voluntary participation by organisations in a common system for environmental management and audit scheme, dated 28 August 2017

**EN 717-1**

DIN EN 717-1:2004, Wood-based panels – Determination of formaldehyde release – Part 1: Formaldehyde emission by the chamber method

**ISO 9001**

DIN EN ISO 9001:2015, Quality management systems – Requirements

**EN 13171**

DIN EN 13171:2015-04, Thermal insulation products for buildings – Factory-made wood fibre (WF) products – Specifications

**DIN EN 13501-1**

DIN EN 13501-1:2018, Classification of construction products and methods by reaction to fire – Part 1: Classification with the results of tests on reaction to fire of construction products

**ISO 14001**

DIN EN ISO 14001:2015, Environmental management systems – Requirements with guidance for use

**EN 16485**

DIN EN 16485:2014-07, Round and sawn timber – Environmental Product Declarations – Product category rules for wood and wood-based products for use in construction

**Test report AZ: K 6635 FM**

Test report no. 35541-001 "Laboratory test for GUTEX", dated 02.05.2018; Bremer Umweltinstitut GmbH, Bremen, Germany

**REACH Directive**

Directive (EC) No. 2020/71 of the European Parliament and Council of 27 February 2020 on the Registration, Evaluation, Authorisation of Chemicals

**Test report AZ: K 9731 FM-K**

Test report no. 35541-001 "Laboratory test for GUTEX", dated 22.06.2020; Bremer Umweltinstitut GmbH, Bremen, Germany

**DIN 4108-4**

DIN 4108-4:2017-03, Thermal protection and saving energy in buildings

**DIN 4108-10**

DIN 4108-10:2015-12, Thermal protection and saving energy in buildings

**EN 622-4**

DIN EN 622-4:2019: Fibreboards

**SIA data sheet**

Thermally-insulating construction materials, current version SIA 2001:2015

**ACERMI**

Association pour la certification des matériaux isolants, [www.acermi.com](http://www.acermi.com)

**ÖNORM B 6000**

ÖNORM B 6000:2018-08-01, Factory-made insulating materials for thermal and/or noise protection in buildings





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