



# SHI PRODUCT PASSPORT

Find products. Certify buildings.

SHI Product Passport No.:

**14498-10-1000**

## Bodencouture EcoPur

Product group: Floor coverings / Wall coverings - Design floors - Interior construction

**BARTH & CO**  
MARKETERS SINCE 1873

F.W. Barth & Co. GmbH  
Fuggerstraße 25  
41352 Korschenbroich



### Product qualities:



*Köttner*

Helmut Köttner  
Scientific Director

Freiburg, 02 February 2026



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The SHI Database is the first and only database for construction products whose comprehensive processes and data accuracy are regularly verified by the independent auditing company SGS-TÜV Saar





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## SHI Product Assessment 2024

Since 2008, Sentinel Holding Institut GmbH (SHI) has been establishing a unique standard for products that support healthy indoor air. Experts carry out independent product assessments based on clear and transparent criteria. In addition, the independent testing company SGS regularly audits the processes and data accuracy.

Criteria	Product category	Harmful substance limit	Assessment
SHI Product Assessment	Other floor coverings	TVOC $\leq 160 \mu\text{g}/\text{m}^3$ Formaldehyd $\leq 10 \mu\text{g}/\text{m}^3$	Indoor Air Quality Certified
Valid until: 19 November 2026			



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## QNG - Qualitätssiegel Nachhaltiges Gebäude

The Qualitätssiegel Nachhaltiges Gebäude (Quality Seal for Sustainable Buildings), developed by the German Federal Ministry for Housing, Urban Development and Building (BMWSB), defines requirements for the ecological, socio-cultural, and economic quality of buildings. The Sentinel Holding Institut evaluates construction products in accordance with QNG requirements for certification and awards the QNG ready label. Compliance with the QNG standard is a prerequisite for eligibility for the KfW funding programme. For certain product groups, the QNG currently has no specific requirements defined. Although classified as not assessment-relevant, these products remain suitable for QNG-certified projects.

Criteria	Pos. / product group	Considered substances	QNG assessment
3.1.3 Schadstoffvermeidung in Baumaterialien	2.2 Resilient floor coverings – including multilayer systems	VOC / Emissions / hazardous substances / polycyclic aromatic hydrocarbons (PAH) / SVHC / heavy metals	QNG ready
<b>Verification:</b> Blauer Engel Zertifizierung			



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## DGNB New Construction 2023

The DGNB System (German Sustainable Building Council) assesses the sustainability of various types of buildings. It can be applied to both large-scale private and commercial projects as well as smaller residential buildings. The 2023 version sets high standards for ecological, economic, socio-cultural, and functional aspects throughout the entire life cycle of a building.

Criteria	Assessment
ECO1.1 Life cycle cost (*)	May positively contribute to the overall building score
<b>Verification:</b> EPD	

Criteria	Assessment
ENV1.1 Climate action and energy (*)	May positively contribute to the overall building score
<b>Verification:</b> EPD	

Criteria	Assessment
SOC1.3 Sound insulation and acoustic comfort (*)	May positively contribute to the overall building score
<b>Verification:</b> Datenblatt	

Criteria	Assessment
SOC2.1 Barrier-free design (*)	May positively contribute to the overall building score

Criteria	No. / Relevant building components / construction materials / surfaces	Considered substances / aspects	Quality level
ENV 1.2 Local environmental impact, 03.05.2024 (3rd edition)	7 Floor coverings (Resilient floor coverings)	VVOCs, VOC, SVOC emissions and content of hazardous substances	Quality level 4
<b>Verification:</b> Blauer Engel Zertifizierung			



Criteria	No. / Relevant building components / construction materials / surfaces	Considered substances / aspects	Quality level
ENV 1.2 Local environmental impact, 29.05.2025 (4th edition)	7 Floor coverings for indoor use (elastic floor coverings)	VVOCs, VOC, SVOC emissions and content of hazardous substances	Quality level 4
<b>Verification:</b> Blauer Engel Zertifizierung			



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## DGNB New Construction 2018

The DGNB System (German Sustainable Building Council) assesses the sustainability of various types of buildings. It can be applied to both large-scale private and commercial projects as well as smaller residential buildings.

Criteria	No. / Relevant building components / construction materials / surfaces	Considered substances / aspects	Quality level
ENV 1.2 Local environmental impact	7 Floor coverings (Resilient floor coverings)	VOC / SVOC / hazardous substances	Quality level 4
<b>Verification:</b> Blauer Engel Zertifizierung			



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## **BNB-BN Neubau V2015**

The Bewertungssystem Nachhaltiges Bauen (Assessment System for Sustainable Building) is a tool for evaluating public office and administrative buildings, educational facilities, laboratory buildings, and outdoor areas in Germany. The BNB was developed by the former Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and is now overseen by the Federal Ministry for Housing, Urban Development and Building (BMWSB).

Criteria	Pos. / product type	Considered substance group	Quality level
1.1.6 Risiken für die lokale Umwelt	2a Elastic floor coverings – with and without bonded underlay or insulation layer	VOC / hazardous substances / heavy metals	Quality level 5

**Verification:** Blauer Engel Zertifizierung



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## EU taxonomy

The EU Taxonomy classifies economic activities and products according to their environmental impact. At the product level, the EU regulation defines clear requirements for harmful substances, formaldehyde and volatile organic compounds (VOCs). The Sentinel Holding Institut GmbH labels qualified products that meet this standard.

Criteria	Product type	Considered substances	Assessment
DNSH - Pollution prevention and control	Floor coverings (including associated adhesives and sealants)	Substances according to Annex C, formaldehyde, carcinogenic VOCs category 1A/1B	EU taxonomy compliant

**Verification:** Blauer Engel Zertifizierung



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## BREEAM DE Neubau 2018

BREEAM (Building Research Establishment Environmental Assessment Methodology) is a UK-based building assessment system that evaluates the sustainability of new constructions, refurbishments, and conversions. Developed by the Building Research Establishment (BRE), the system aims to assess and improve the environmental, economic, and social performance of buildings.

Criteria	Product category	Considered substances	Quality level
Hea 02 Indoor Air Quality	Flooring materials (including floor levelling compounds and resin flooring)	Emissions: Formaldehyde, TVOC, TSVOC, carcinogens	Exemplary quality

**Verification:** Eurofins IACG Zertifizierung



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# Product labels

In the construction industry, high-quality materials are crucial for a building's indoor air quality and sustainability. Product labels and certificates offer guidance to meet these requirements. However, the evaluation criteria of these labels vary, and it is important to carefully assess them to ensure products align with the specific needs of a construction project.



The *Blue Angel* ("Blauer Engel") ecolabel, awarded by the German Federal Environment Agency, is one of the oldest and most widely used ecolabels in Germany. It exists in several variants for many different product groups. Since the test criteria, such as threshold values, differ between these variants, it is important to consider each one individually when assessing indoor air quality.



Eurofins Indoor Air Comfort® confirms compliance with requirements for low VOC emissions. The standard level covers all mandatory VOC regulations in the EU, while the Gold level additionally takes into account emission criteria from voluntary ecolabels and building certifications.



Products bearing the Sentinel Holding Institute QNG-ready seal are suitable for projects aiming to achieve the "Qualitätssiegel Nachhaltiges Gebäude" (Quality Seal for Sustainable Buildings). QNG-ready products meet the requirements of QNG Appendix Document 3.1.3, "Avoidance of Harmful Substances in Building Materials." The KfW loan program Climate-Friendly New Construction with QNG may allow for additional funding.



The International EPD® System is a globally recognised programme for the creation and publication of Environmental Product Declarations (EPDs). It enables companies to transparently present the environmental impacts of their products, based on international standards such as ISO 14025 and EN 15804 for construction products. The system provides a standardised method for assessing the environmental performance of products throughout their entire life cycle and promotes sustainable business practices and ecological transparency across various industries.



This product is SHI Indoor Air Quality certified and recommended by Sentinel Holding Institut. Indoor-air-focused construction, renovation, and operation of buildings is made possible by transparent and verifiable criteria thanks to the Sentinel Holding concept.



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## Legal notices

(\* ) These criteria apply to the construction project as a whole. While individual products can positively contribute to the overall building score through proper planning, the evaluation is always conducted at the building level. The information was provided entirely by the manufacturer.

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Find our criteria here: <https://www.sentinel-holding.eu/de/Themenwelten/Pr%C3%BCfverfahren%20f%C3%BCr%20Produkte>

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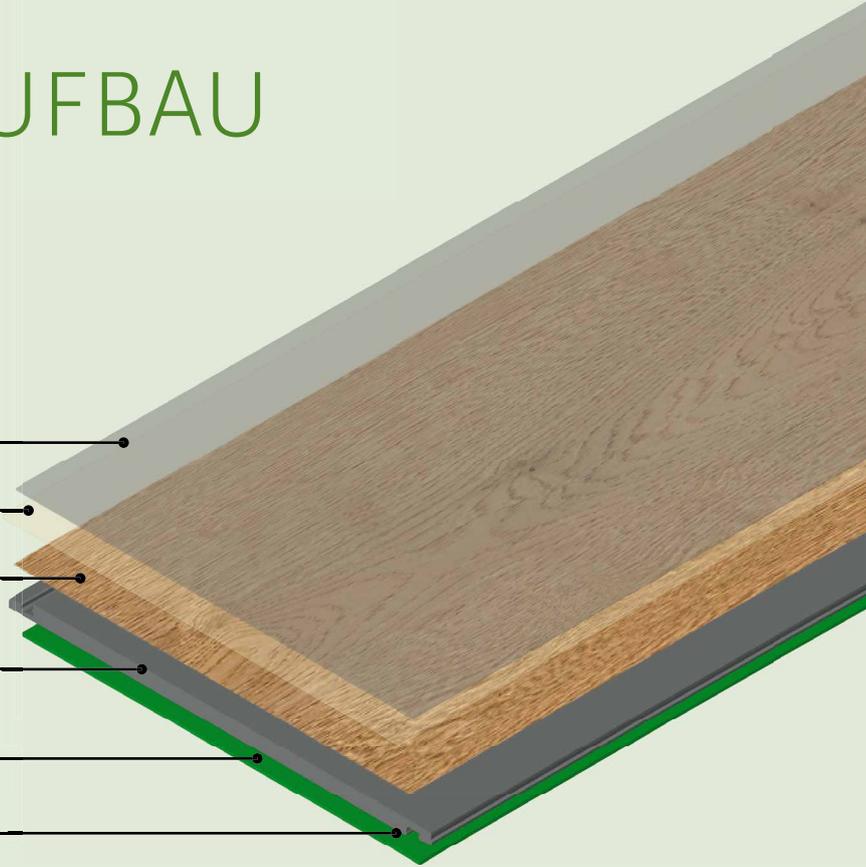
# TECHN. DATEN

Prüfgegenstand	Norm	Testergebnis ecoPUR <sup>®</sup>
Dimensionsstabilität (%)	ISO 23999:2018	X-Richtung: 0,05% Y-Richtung: 0,05%
Krümmung (mm)	ISO 23999:2018	0,00 mm
Maßabweichung (mm)	ISO 24342:2018	<b>Länge:</b> Abweichung ≤ 0,13% der Nennlänge bis zu maximal 0,5 mm <b>Breite:</b> Abweichung < 0,1% bis maximal 0,5 mm – bestanden
Rechtwinkligkeit (mm)	ISO 24342:2018	0,1 mm – bestanden
Geradheit (mm)	ISO 24342:2018	0,05 mm – bestanden
Dickenabweichung (mm)	ISO 24342:2018	0,05 mm – bestanden
Verbleibende Eindrückung	ISO 24343-1:2007	0,13 mm – bestanden
Abnutzungswiderstand	EN13329	5300 R
Widerstandsfähigkeit gegen Kratzer	ISO 19322:2018 Anhang A	Kein sichtbarer, ununterbrochener Kratzer auf der Oberfläche unter 10 N
Stuhlrollen-Test	ISO 4918:2016 u. Amd.1:2018	Keine sichtbare Beschädigung (nach 25.000 Zyklen) – bestanden
Schälfestigkeit	ISO 24345:2006 (E)	X-Richtung: 65 N/mm – bestanden Y-Richtung: 70 N/mm – bestanden
Wirkung der simulierten Bewegung eines Möbelbeins	ISO 16581:2014	Keine sichtbare Beschädigung – bestanden
Farbechtheit gegenüber Licht	ISO 105-B02:2014	≥ 6
Rutschhemmung	EN 13893:2002 u. EN 14041:2018	0,41
Wärmeleitfähigkeit	EN 12664:2001	0,114 W/(m·K)
Wärmeleitwiderstand	EN 12664:2001	0,046 (m <sup>2</sup> ·K)/W
Statischer Lastwiderstand	ASTM F3261-20 Abschnitt 8.7 u. ASTM F970-17 u. ASTM F387-17	0,11 mm – bestanden
Elektrischer Widerstand	EN 1081:2018 u. A1:2020 MethodeA	> 1.0 x 10 <sup>10</sup> Ω
Bestimmung des Brennverhaltens mit einer Wärmestrahlungsquelle	ASTM E648-19a <sup>61</sup>	Klasse II
Brandklassifizierung für das Brennverhalten von Bodenbelagsmaterial	EN 13501-1:2018 Klausel 9 & EN ISO 9239-1:2010&EN ISO 11925-2:2020	C <sub>fl</sub> -S1
Rauchdichte	ASTM E662-21a	Bestanden
Reach		Frei von SVHC-Substanzen ≥ 0,11 %
Rohs-Qualifizierung	Rohs	Bestanden
Formaldehyd	EN 717-1:2004	Bestanden
Pentachlorphenol(PCP)	EN 14041:2018 Anhang B & EN 12673:1999	ND(<0,05 mg3)– bestanden
Abfallschlüssel	17 02 03	Zu entsorgen in kleinen Mengen über die Wertstofftonne oder aber den Wertstoffhof
Verpackungseinheiten Dielen	Dielen	1 Pak. = 10 Pla. = 2,7816 m <sup>2</sup> 1 Pal. = 40 Pak. = 111,264 m <sup>2</sup> 20' Co. = 28 Pal. = 3,115,39 m <sup>2</sup>
Verpackungseinheiten Fliesen	Fliesen	1 Pak. = 6 Fl. = 2,6508 m <sup>2</sup> 1 Pal. = 51 Pak. = 135,1908 m <sup>2</sup> 20' Co. = 24 Pal. = 3,244,5792 m <sup>2</sup>
Format inkl. 1 mm Trittschalldämmung	Dielen Fliesen	5,2/0,3 x 228 x 1.220 mm 5,2/0,3 x 470 x 940 mm

# PRODUKTAUFBAU

## POLYMIN<sup>®</sup> INSIDE

- Matecta<sup>®</sup> Premium-Oberfläche
- Transparente Nutzschicht
- Authentischer Dekorfilm
- Trägerplatte
- Integrierte Trittschalldämmung
- Patentiertes Klicksystem (L2C)



Eco friendly



Gelenkschonend



Geräusch reduzierend



Geruchsneutral

### FORMAT

inklusive 1 mm Trittschall  
5,2/0,3 x 225 x 1.220 mm  
5,2/0,3 x 470 x 940 mm



[www.blauer-engel.de/uz120](http://www.blauer-engel.de/uz120)



**Beanspruchungsklasse**  
Starke Beanspruchung  
im privaten Bereich.



**Beanspruchungsklasse**  
Starke Beanspruchung  
im gewerblichen Bereich.



**Beanspruchungsklasse**  
Normale Beanspruchung  
in der Leichtindustrie.  
Befahrbarkeit ausgenommen.



4-SEITIGE  
MICROFASE

SHI

Sentinel Holding Institut

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Telefon +49 (0) 21 61-995-535  
Datum 01.01.2022  
Thema **Herstellereklärung**

Sehr geehrter Damen Und Herren,

## **Herstellereklärungen zu AgBB-Schema und REACH Verordnung**

### **Konformität AgBB-Bewertungsschema 2024**

Hiermit bestätigen wir Ihnen, dass die von uns gelieferten Produkte der gesamten Barth Kollektion Bodencouture besonders emissionsarm sind und dem aktuellen AgBB-Standard (Ausschuss zur gesundheitlichen Bewertung von Bauprodukten) entsprechen.

### **VO (EG) Nr. 1907/2006 (REACH-Verordnung), Informationspflichten nach Art. 33**

Hiermit teilen wir Ihnen mit, dass in dem/n folgenden von uns gelieferten Erzeugnis/Erzeugnissen, kein/e besonders besorgniserregenden/r Stoff/e (SVHC) der Kandidatenliste des aktuellen Stands über 0,1 % gemäß Art. 33 der REACH-Verordnung (Verordnung (EG) Nr. 1907/2006) enthalten ist/sind:

Gesamte Barth Kollektion Bodencouture

Die EU-Lieferanten von Erzeugnissen, die in unseren Produkten in relevanter Größenordnung verarbeitet werden, sind ebenso verpflichtet, uns unaufgefordert zu informieren, sofern in den von ihnen gelieferten Produkten ein SVHC-Stoff über 0,1 % enthalten ist. Sofern wir eine diesbezügliche Information von unseren Lieferanten erhalten und dadurch Kenntnis erlangen, dass damit auch in unseren Produkten die 0,1 Massenprozentschwelle für einen SVHC-Stoff überschritten wird, werden wir Sie informieren.

Von allen relevanten EU-Lieferanten lassen wir uns darüber hinaus noch einmal schriftlich versichern, dass keine SVHC-Stoffe > 0,1 % in den gelieferten Produkten enthalten sind.

Mit allen Nicht-EU-Lieferanten von Erzeugnissen, die in unseren Produkten in relevanter Größenordnung verarbeitet werden, treffen wir gesonderte Vereinbarungen. Darin lassen wir uns schriftlich versichern, dass wir unmittelbar informiert werden, sofern in einem an uns gelieferten Produkt die 0,1 Massenprozentschwelle für einen SVHC-Stoff überschritten wird.

Gleichzeitig bestätigen wir, dass die genannten Artikel der gesamten Barth Kollektion

**BARTH & CO**

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Seite 2/2 zum Brief vom 03.11.2025

Bodencouture frei von Blei – Zink und Cadmium Stabilisatoren sind.

Mit freundlichen Grüßen

A handwritten signature in black ink, appearing to read 'Föhles', with a horizontal line extending to the right.

Korschenbroich den 03.11.2025  
Markus Föhles

Leiter Technik / Technical Director

# Environmental Product Declaration



In accordance with EN 15804:2012+A2:2019 for:

## ***Resilient flooring tile***

from

***Jiangsu BBL Home Technology Co., Ltd.***



Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
EPD registration number:	S-P-11120
Publication date:	2023-10-23
Valid until:	2028-10-23

*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR)</b>
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14 Construction products, version 1.2.5
PCR review was conducted by: <i>IVL Swedish Environmental Research Institute</i> Moderator: <i>Martin Erlandsson, <a href="mailto:Martin.erlandsson@ivl.se">Martin.erlandsson@ivl.se</a></i>
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: <i>Zhou Jiangling, Xu Fangyan (Ecovane Environmental)</i>
<b>Third-party verification</b>
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:  <input checked="" type="checkbox"/> EPD verification by individual verifier  Third-party verifier: Sunil Kumar, SIPL Pvt Ltd ( <a href="mailto:sunil@sipl-sustainability.com">sunil@sipl-sustainability.com</a> )  Approved by: The International EPD® System
<b>OR</b>
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:  <input type="checkbox"/> EPD verification by accredited certification body  Third-party verification: <i>&lt;name, organisation&gt;</i> is an approved certification body accountable for the third-party verification  The certification body is accredited by: <i>&lt;name of accreditation body &amp; accreditation number, where applicable&gt;</i>
<b>OR</b>

Independent third-party verification of the declaration and data, according to ISO 14025:2006 via:

EPD verification by EPD Process Certification\*

Internal auditor: *<name, organisation>*

Third-party verification: *<name, organisation>* is an approved certification body accountable for third-party verification

Third-party verifier is accredited by: *<name of accreditation body & accreditation number, where applicable>*

\*For EPD Process Certification, an accredited certification body certifies and reviews the management process and verifies EPDs published on a regular basis. For details about third-party verification procedure of the EPDs, see GPI v.4, Section 7.5.

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes       No

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

## Company information

### Owner of the EPD:

Jiangsu BBL Home Technology Co., Ltd.

Address: NO.10 Changhong East Rd, Henglin Town, Wujin District, Changzhou City, JS213101, China.

Website: <https://www.bbllflooring.com>

Email: [field@bbllfloor.com](mailto:field@bbllfloor.com)

### Description of the organization:

Established in 1991, Jiangsu BBL home Technology Co., Ltd. (also known as BBL) is a professional manufacturer of Vinyl Flooring, Laminate Flooring as well as Engineered wood flooring. BBL has more than 31 years of experience in construction materials and has a good reputation in this field.

BBL have implemented a strict and complete quality control system, which ensures that each product can best meet customers' quality requirements. Besides, all the products have been strictly inspected before shipment. We have attained ISO9001:2008 certification for our management system and we are now using Lean Manufacturing System to improve our efficiency of internal management.

In 2010, BBL set up "Product Research and Developing Department". Jointly with Nanjing Forestry University, BBL has established "BBL Flooring Engineering Technology Research and Developing Center". BBL will insist on its business concept, which is "Following the market need, based on professional marketing, guaranteed by the creditable service" to build BBL as a professional brand and providing satisfactory products and service to clients all over the world.

### Name and location of production site(s):

Jiangsu BBL Home Technology Co., Ltd.

Address: NO.10 Changhong East Rd, Henglin Town, Wujin District, Changzhou City, JS213101, China.

## Product information

### Product name:

BBL resilient flooring tile, including LVT (Luxury Vinyl Tile), LVT click (Luxury Vinyl Tile click), PP (Polypropylene), SPC (Stone Plastic Composite), EPC (Engineered Plastic Composite) and WPC (Wood Plastic Composite)

### Product identification:

*Table1 Product technical specifications*

Product	Thickness	Length	width
LVT	2.0-4.0mm	200-2000mm	100-2000mm
LVT click	3.2-5.0mm	200-2000mm	100-2000mm
PP	3.2-6.5mm	200-2000mm	100-2000mm
SPC	3.2-7.0mm	200-2000mm	100-2000mm
EPC	5.0-7.0mm	200-2000mm	100-2000mm
WPC	5.0-12mm	200-2000mm	100-2000mm

### Manufacturing process:

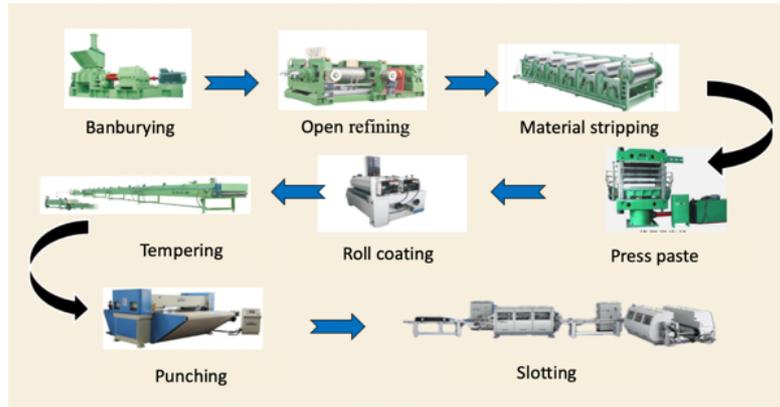


Figure1 BBL WPC resilient flooring tile manufacturing process

**Product description:**

BBL's resilient flooring series has a total of six series of products, including LVT (Luxury Vinyl Tile), LVT click (Luxury Vinyl Tile click), PP (Polypropylene), SPC (Stone Plastic Composite), EPC (Engineered Plastic Composite) and WPC (Wood Plastic Composite). The various series of flooring product shares the similar manufacturing processes and ingrediencies. According to the LCA analysis, WPC flooring product has the highest level of impact among the six series, hence in this EPD, WPC flooring tile, with various combinations of thickness, length and width of the tile, is selected as representative model. Among the WPC products, WPC with a thickness of 5.0 mm is the general specifications for each category, which can be abbreviated as WPC (5.0). A detailed flooring product specification is depicted below in Table 1 above.

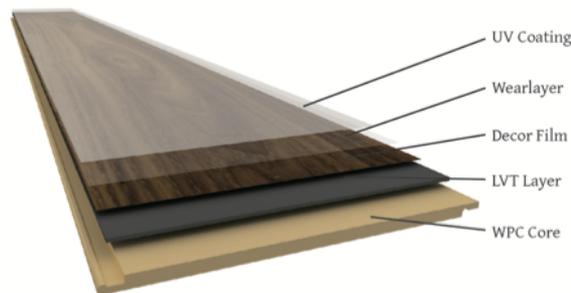


Figure 2 Structure of WPC floor

BBL's flooring tiles are 100% water proof, and they use best plasticizer DOTP and 100% virgin material, which have passed certification of Floorscore, Green Guard Gold and Eurofin's Indoor Air Quality Comfort.

**UN CPC code:**

36910 Floor coverings of plastics, in rolls or in the form of tiles; wall or ceiling coverings of plastics.

**Geographical scope:**

Global

**LCA information**

**Declared unit:**

The declared unit is 1 m<sup>2</sup> of WPC resilient flooring tile. To convert area to mass, multiply the volume by the density of the substance. The conversion factor of volume to mass in the LCA study is 1600kg/m<sup>3</sup> since the thickness is 5 mm.

**Time representativeness:**

The study used primary data collected from January 2022 to January 2023.

**Database(s) and LCA software used:**

In this LCA study, specific data related to materials or energy flows within the production was calculated and submitted by BBL, generic data for certain processes were sourced from Ecoinvent 3.8 in SimaPro 9.5.

The data quality requirements for this study were as follows:

- Existing LCI data were, at most, 10 years old. Newly collected LCI data were current or up to 3 years old;
- The LCI data related to the geographical locations where the processes took place, e.g. electricity and transportation data from China, disposal data from Europe were utilized;
- The scenarios represented the average technologies at the time of data collection.

**System diagram:**

**DESCRIPTION OF THR SYSTEM BOUNDARY (X = INCLUDED IN THE LCA; ND = MODULE NOT DECLARED)**

Product Stage			Construction Process Stage		Use Stage							End of Life Stage				Recourse Recovery Stage
Raw Material	Transport	Manufacturing	Transport	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction and 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	X	X	ND	X	ND	ND	ND	ND	ND	X	X	X	X	X

**Description of system boundaries:**

This study of flooring product includes life cycle information from cradle-to-grave and module D. The product stage for product includes extraction and processing of raw materials, transportation to the factory and manufacturing processes with packaging and etc. The construction process stage includes transportation of flooring product to the building site from the factory and the installation phase. The use stage includes maintenance of flooring product. And the end of life stage includes deconstruction, transportation of waste products to final disposition site, disposal and etc.

Over through the life cycle stages of products, all energy and material inputs have been traced back to the extraction of resources, emissions from the whole system have been quantified and waste management scenarios have also been included.

For recycling and disposal process at the end of life stage, to be conservative, the benefits of recycling and recovery is out of boundary of the product system. However, the potential benefits from recycling and energy recovery beyond the system boundary of the studied product system have been declared and reported in module D in this study.

**Excluded lifecycle stages:**

The following steps/stages were not included in the system boundary due to the reason that the elements below are considered irrelevant or not within the boundary to the LCA study of the product system:

- production and disposal of the infrastructure and capital equipment (buildings, machines, transport media, roads, etc.) and their maintenance
- Storage phases and sales of the flooring products
- Flooring product losses due to abnormal damage such as natural disaster or fire accident. These losses would mostly be accidental.
- Handling operations at the distribution center and retail outlet (cut off, see 2.4 cut off rules)
- Secondary and transit packaging (cut off, see cut off rules)
- Transport from distribution warehouse to retail outlet and from retail outlet to consumer household or commercial center (cut off, see cut off rules)
- The excluded aspects were not included in the system boundary of LCA as the impacts from the excluded aspects were considered irrelevant to the flooring product system under examination, or the impact was deemed minor to the system under study, more of which will be elaborated in *cut off rules*.

**Assumption and limitations:**

For certain aspects of bamboo flooring studied, the following key assumptions were made as follows:

- For missing background data, substitution of missing data using similar background data approach was taken to shorten the gap.
- Transport assumptions were made where it was not possible to obtain the specific data, for instance from distribution center to outlet and from outlet to consumer. When this occurred, it was clearly stated in the report;
- Electricity consumption data was not obtained for certain processes so assumptions were made for these. When this occurred, it was clearly stated in the report;
- A modification of the global background database was done by replacing all the energy data, especially electricity production data, by Chinese energy data, and the study used the modified background data to get better indication of the potential environmental impact results by using more localized dataset of energy supply.

**Allocation:**

Allocation refers to partitioning of input or output flows of a process or a product system between the product systems under study and one or more other product systems. In this report, in plant recycling for substrate production is considered and assumed as a close loop, meaning all of the environment impact from recycling of substrate scraps, and flooring scraps from cutting and edging treatment and benefit of using recycled material to avoid waste treatment for substrate production are allocated to the process of flooring production.

For recycling and disposal process at the end of life stage, as described above, the benefits of recycling and recovery is out of boundary of the product system, and will not be allocated to flooring product.

For process-related allocations, a distinction is made between multi-input and multi-output processes.

- Multi-input processes

For data sets in this study, the allocation of the inputs from coupled processes is generally carried out via the mass. For literature data, the source is generally referred to. In this study one allocation occurs on BBL flooring production, in allocating the input and output, i.e. energy within the production site such as electricity, natural gas and etc. and some other raw material such as diesel, emission such as off gas among the various series of flooring products, allocation is done via both mass and size of the specific series of product produced on a yearly average. The principle for choosing the mass and size is based on the linear relationship of the product output to the environmental impacts.

- Multi-output processes

In this study, there is no other by products produced from the production line, hence there is quite little occasion that required allocation for multi-output processes. One allocation occurs on the environmental emissions allocation, especially in the area of waste treatment. In the end of life stage, the allocation within the disposal scenario follows mass allocation, which applies to waste treatment process inventory adopted from Ecoinvent data.

**Cut-off rules:**

It is estimated that the largest omitted mass flow in the product life cycle is associated with production stage, but it does not exceed 1% of total mass flow in the worst cases scenario. It is estimated that environmental relevance over impact categories during whole product life cycle does not exceed 1% in the worst cases scenario.

Cut-off criteria were applied to capital equipment production and maintenance. It was assumed that the impacts associated with these aspects were sufficiently small enough to fall below cut-off when it is scaled down to the declared unit.

Material and energy flows known to have the potential to cause significant emissions into air and water or soil related to the environmental indicators of this study will be included in the assessment. So far according to review of the Material Safety Data Sheet (MSDS) and relevant physical, chemical and other information of the flows listed in table above, no significant negative emission to the environment from above listed flows is identified.

*Table 2 Cut off flows*

Flow name	Process stage	Mass %	Total Mass %
Waste filter cotton	Production process waste gas treatment	8.5 E-05, <<1%	8.5 E-05, <<1%
Waste residue	Production process	7 E-05, <<1%	1.55 E-04, <<1%
Waste rag	Production process	1 E-04, <<1%	2.55 E-04, <<1%
Waste heat conducting oil	Production process	2.8 E-04, <<1%	5.35 E-04, <<1%

**Electricity source:**

In this report, the electricity is based on State Grid Corporation of China (SGCC) inventory, the inventory is prepared by Ecovane LCA consultant, taking into account the power plant efficiency, emission factor, power grid loss and also traced back to raw energy materials such as coal and natural gas.

The electricity inventory is based on the year of 2020 for Chinese electricity generation (China Energy Statistics). In 2020, the content of power supply is 68.5% thermal power, 17.4% hydropower, 4.7% nuclear power, and 6.0% wind power. And coal is the main fuel for thermal power, accounting for about 90%, followed by gas for 8%, and the rest is fuel oil and other fuels. The transmission of electricity in all cases is taken from the power station via a high voltage electricity grid to low voltage electricity suitable

for domestic use, with a loss factor of 7.52% of the electricity produced at the power station, and a loss of 6.15% by the electricity consumption at the power plants.

**Life cycle assessment scenarios:**

According to BBL, installation for flooring product is a relatively simple task and only a few tools like cutting instruments (knife, scissors) are necessary for installation. In this LCA study we assume the floor is flat and the energy or material required to do floor preparation is omitted. As tools are reusable, the production and disposal stage of tools is also omitted. Approximately 10% of the total material is cut off as waste, according to estimation by BBL. For the simplicity of the study, we assume that the scrape of the installation is treated following the normal end of life disposal scenarios used in the target market.

The disposal of packaging materials is also included in the installation stage. According to BBL, the target market of flooring products including North America, Europe and the Asian-Pacific region. The disposal of packaging materials will adopt a rough country and region weighted average disposal mode following literature review. For packaging disposal in North America, the waste disposal scenario from US is set default, and for packaging disposal in the Asian-Pacific region, the waste disposal scenario from Australia is set default, as US and Australia are the main markets in North America and the Asia Pacific region according to BBL. The table below demonstrates the packaging disposal in the target market.

Table 3 Packaging disposal in the target market

Nation/region		Ratio	Material type	Recycling Rate	Landfill Rate	Incineration Rate
EU <sup>1</sup>		30%	paper	81.50%	9.30%	9.20%
			wood	32.00%	39.00%	29%
			plastic	37.60%	23.80%	38.60%
North America	US <sup>2</sup>	50%	paper	68.00%	26%	6.00%
	The rest market		wood	17.00%	67%	16.00%
			plastic	8.50%	76%	15.50%
the Asia Pacific region	Australia <sup>3</sup>	20%	paper	55.00%	45%	0%
	The rest market		wood	80.00%	20%	0%
			plastic	13%	87%	0%

Source:

<sup>1</sup> Eurostat, Recovery and recycling rates for packaging. 2020. (Last updated March 2023)

<sup>2</sup> Advancing Sustainable Materials Management: 2018 Fact Sheet. (Released December 2020)

<sup>3</sup> National Waste Report 2022. (Released December 2022)

Very little effort is required in order to use BBL flooring product, hence in the usage stage the focus is put on maintaining the floor tile in terms of protecting its integrity and functionality. In normal condition, routine vacuuming, cleaning and surface conditioning is required. The energy and detergent consumption data is based on estimation from BBL and study of average product's usage data, the table below demonstrates the amount used in this report.

Table 4 Inputs in maintenance stage

	Amount	Units	Scenario
Electricity	0.052	kWh/m2/yr.	Based on weekly vacuuming and 0.001kWh/m2 square assumption
Detergent	0.052	kg/m2/yr.	Based on weekly mopping and 0.001kg/m2 detergent usage assumption;

According to BBL, most of flooring products are used in Europe, North America, and the Asian-Pacific region. The disposal of the used flooring product will adopt a region average disposal mode following literature review. End of life disposal treatment process (C4) fromecoinvent will be used in this LCA study. For the waste scenario, 100km of road transportation (C2) from home to waste treatment site is assumed. According to BBL, the tile can be manually removed from the floor, hence input and output is omitted in deconstruction (C1), and waste processing (C3) stage of the tile life cycle. Table below shows the disposal in the target market.

Table 5 Disposal in the target market

Nation/region		Ratio	Recycling Rate	Landfill Rate	Incineration Rate
EU <sup>1</sup>		30%	49.2%	19%	30.2%
North America	US <sup>2</sup>	50%	18.5%	65.5%	16%
	The rest market				
the Asia Pacific region	Australia <sup>3</sup>	20%	80%	20%	0%
	The rest market				

Source:

<sup>1</sup> Eurostat, Recovery and recycling rates for packaging. 2020. (Last updated March 2023)

<sup>2</sup> Advancing Sustainable Materials Management: 2018 Fact Sheet. (Released December 2020)

<sup>3</sup> National Waste Report 2022. (Released December 2022)

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage						End of life stage				Resource recovery stage	
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing		Disposal
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	X	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	CN	CN	CN	GLO	GLO	ND	GLO	ND	ND	ND	ND	ND	GLO	GLO	GLO	GLO	GLO
Specific data used	>90%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	27.40%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Content information

Product components	EPC (5.0)	LVT (2.5)	LVT click (4.2)	PP (4.2)	SPC (5.0)	WPC (5.0)
Stone powder	65.60%	70.10%	70.10%	64.50%	67.40%	62.30%
PVC	23.30%	16.30%	16.30%	-	20.50%	28.50%
Other additive	0.90%	-	-	2.00%	0.60%	0.90%
Wearlayer	8.30%	7.50%	7.50%	-	10.00%	5.10%
Wearlayer-PVC free	-	-	-	9.20%	-	-
Stabilizer	1.30%	1.30%	1.30%	0.00%	1.10%	0.20%
UV coating	0.20%	0.20%	0.20%	0.20%	0.20%	0.20%
Carbon black	0.20%	0.20%	0.20%	0.10%	0.10%	0.20%
Lubricant	0.30%	-	-	0.20%	0.50%	0.80%
Film	0.10%	0.20%	0.20%	-	0.10%	0.10%
Film-PVC free	-	-	-	0.20%	-	-
DOTP	-	9.20%	9.20%	-	-	2.00%
PP	-	-	-	23.60%	-	-
ixpe	-	-	-	-	-	0.50%

Packaging materials	Weight, kg/DU	Weight biogenic carbon, kg C/DU
Packaging box	0.146	0.051
Tray	0.095	0.047
Wrapping film	0.019	0
Packing belt	0.01	0

## Results of the environmental performance indicator

BBL's resilient flooring series has a total of six series of products, including LVT (Luxury Vinyl Tile), LVT click (Luxury Vinyl Tile click), PP (Polypropylene), SPC (Stone Plastic Composite), EPC (Engineered

Plastic Composite) and WPC (Wood Plastic Composite), among which the environmental impact of WPC flooring is the largest. Therefore, the environmental impact value of WPC is selected as representative product for disclosure in this EPD report.

### Mandatory impact category indicators according to EN 15804

Results per declared unit										
Impact category	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
GWP - total	kg CO <sub>2</sub> eq	1.24E+01	2.48E+00	1.88E-01	4.19E+00	0.00E+00	1.02E+00	0.00E+00	1.39E+00	- 3.17E+00
GWP - fossil	kg CO <sub>2</sub> eq	1.26E+01	2.48E+00	1.73E-02	3.53E+00	0.00E+00	1.02E+00	0.00E+00	1.03E+00	- 3.36E+00
GWP - biogenic	kg CO <sub>2</sub> eq	-3.60E-01	4.79E-04	1.71E-01	- 3.34E+00	0.00E+00	3.14E-04	0.00E+00	3.60E-01	1.89E-01
GWP - luluc	kg CO <sub>2</sub> eq	1.52E-01	1.54E-03	2.12E-06	4.00E+00	0.00E+00	1.12E-04	0.00E+00	1.17E-04	-3.17E-03
ODP	kg CFC11 eq	4.88E-06	5.21E-07	4.05E-10	4.34E-07	0.00E+00	2.22E-07	0.00E+00	1.84E-08	-1.36E-06
AP	mol H <sup>+</sup> eq	5.90E-02	5.75E-02	2.33E-05	3.64E-02	0.00E+00	6.46E-03	0.00E+00	1.15E-03	-1.54E-02
EP-freshwater	kg P eq	4.34E-03	1.15E-04	5.35E-07	2.40E-02	0.00E+00	1.83E-05	0.00E+00	1.20E-04	-1.22E-03
EP-marine	kg N eq	1.28E-02	1.41E-02	1.27E-04	3.38E-02	0.00E+00	2.60E-03	0.00E+00	6.93E-03	-2.99E-03
EP-terrestrial	mol N eq	1.22E-01	1.56E-01	7.97E-05	1.20E-01	0.00E+00	2.85E-02	0.00E+00	3.97E-03	-2.93E-02
POCP	kg NMVOC eq	3.70E-02	4.13E-02	4.24E-05	2.05E-02	0.00E+00	1.00E-02	0.00E+00	1.07E-03	-9.50E-03
ADP-minerals&metals*	kg Sb eq	1.25E-04	4.20E-06	7.40E-09	5.81E-05	0.00E+00	8.91E-07	0.00E+00	4.23E-07	-4.53E-05
ADP-fossil*	MJ	2.20E+02	3.42E+01	3.62E-02	3.92E+01	0.00E+00	1.39E+01	0.00E+00	1.74E+00	- 6.93E+01
WDP*	m <sup>3</sup> depriv.	5.26E+00	8.56E-02	1.92E-03	1.36E+01	0.00E+00	1.25E-02	0.00E+00	1.03E-01	- 1.66E+00
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption									

\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator. The estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks

### Additional mandatory and voluntary impact category indicators

Results per declared unit										
Indicator	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
GWP-GHG	kg CO <sub>2</sub> eq.	1.28E+01	2.48E+00	1.73E-02	7.53E+00	0.00E+00	1.02E+00	0.00E+00	1.03E+00	3.36E+00

### Resource use indicators

Results per declared unit										
Impact category	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
PENRE	MJ	2.43E+02	3.33E+01	3.67E-02	4.67E+01	0.00E+00	1.34E+01	0.00E+00	1.79E+00	-
PERE	MJ	1.95E+01	2.88E-01	1.26E-03	1.25E+02	0.00E+00	5.44E-02	0.00E+00	7.29E-02	-
PENRM	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	-
PERM	MJ	1.14E+00	0.00E+00	-						
PENRT	MJ	2.43E+02	3.33E+01	3.67E-02	4.67E+01	0.00E+00	1.34E+01	0.00E+00	1.79E+00	-
PERT	MJ	2.06E+01	2.88E-01	1.26E-03	1.25E+02	0.00E+00	5.44E-02	0.00E+00	7.29E-02	-
FW	m <sup>3</sup>	9.05E+00	4.53E-01	1.94E-03	4.55E+00	0.00E+00	6.22E-02	0.00E+00	1.06E-01	-
SM	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	-
RSF	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	-
NRSF	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	-
Acronyms		PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; PERT = Total use of renewable primary energy resources; FW = Use of net fresh water; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels								

### Waste indicators

Results per declared unit										
Impact category	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
Hazardous waste disposed	kg	3.00E-03	0.00E+00	-						
Non-hazardous waste disposed	kg	4.50E-01	0.00E+00	1.07E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-

Radioactive waste disposed	kg	0.00E+00	-								
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## Output flow indicators

Results per declared unit										
Impact category	Unit	A1-A3	A4	A5	B2	C1	C2	C3	C4	D
Components for re-use	kg	0.00E+00	-							
Material for recycling	kg	0.00E+00	0.00E+00	4.59E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.20E+00	-
Materials for energy recovery	kg	0.00E+00	0.00E+00	1.70E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.40E+00	-
Exported electrical energy	MJ, per energy carrier	0.00E+00	0.00E+00	1.41E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.52E+00	-
Exported thermal energy	MJ, per energy carrier	0.00E+00	-							

## References

General Programme Instructions of the International EPD<sup>®</sup> System. Version 4.0.

PCR 2019:14. CONSTRUCTION PRODUCTS. Version 1.2.5

EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products.

ISO 14025:2006 Environmental labels and declaration – Type III environmental declarations – Principles and procedures.

ISO 14040:2006 /Amd 1:2020 Environmental management- Life cycle assessment - Principles and framework.

ISO 14044:2006/Amd 2:2020 Environmental management - Life cycle assessment - Requirements and guideline.

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