ENVIRONMENTAL PRODUCT DECLARATION

as per /ISO 14025/ and /EN 15804/

Owner of the Declaration	**BASF SE & Karl Bachl Kunststoffverarbeitung GmbH & Co.KG**
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
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Valid to	22.07.2021

Insulation board made of Neopor® Plus BMB

BASF SE & Karl Bachl Kunststoffverarbeitung GmbH & Co.KG

Institut Bauen und Umwelt e.V.

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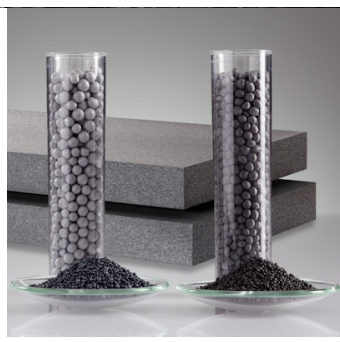

1. General Information

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Karl Bachl Kunststoffverarbeitung GmbH & Co.KG

Programme holder
IBU - Institut Bauen und Umwelt e.V.
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Germany

Declaration number
EPD-BAS-20190059-IBA1-EN

This declaration is based on the product category rules:
Insulating materials made of foam plastics, 06.2017
(PCR checked and approved by the SVR)

Issue date
23.04.2019

Valid to
22.07.2021

Prof. Dr.-Ing. Horst J. Bossenmayer
(President of Institut Bauen und Umwelt e.V.)

Dr. Alexander Röder
(Managing Director IBU)

Insulation board made of Neopor® Plus BMB

Owner of the declaration

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D-67056 Ludwigshafen

Karl Bachl Kunststoffverarbeitung GmbH & Co.KG
Deching 3
D-94133 Röhrnbach

Declared product / declared unit
1 m³ insulation board made of Neopor® Plus BMB

Scope:
This EPD describes an insulation board made of Neopor® Plus BMB (Biomass Balance approach). The granulate is manufactured at the BASF SE site in Ludwigshafen and further processing as boards is carried out by Karl Bachl Kunststoffverarbeitung GmbH & Co. KG in Röhrnbach.

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.

Verification

The standard /EN 15804/ serves as the core PCR
Independent verification of the declaration and data according to /ISO 14025:2010/
☐ internally ☒ externally

Dr. Frank Werner
(Independent verifier appointed by SVR)

2. Product

2.1 Product description / Product definition

Insulation boards made of Neopor® Plus BMB are expandable polystyrenes (EPS) with polymer flame retardants (Polymer FR).

“BMB” stands for “Biomass Balance” products. The Biomass Balance method uses renewable raw materials such as bio-naphtha or biogas in the manufacture of chemical base products by the production network of BASF along with fossil raw materials. The organic content is then allocated to certain BASF sales products such as Neopor® Plus BMB granulate in accordance with a certified method /TÜV Süd Standard CMS 71/. BMB products display the same quality as non-BMB products as the product formulation is identical to that of its fossil equivalent.

The BMB approach applied by BASF supports the use of renewable raw materials which leads to savings in fossil resources and lower greenhouse gas emissions. The biomass used requires proof of sustainability in the form of a certificate of a standard recognised by the Renewable Energy Directive. Neopor® Plus BMB granulate is manufactured from biogas extracted from kitchen waste. The biogas used is certified in accordance with the /REDcert/ system.

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 /EN 13163:2012+A1:2015/, Thermal insulation materials for buildings – Factory-made expanded polystyrene (EPS) products – Specifications, and CE marking. Use is governed by the respective national regulations.

2.2 Application

Insulation boards made of Neopor® Plus BMB are suitable for use in many applications. The product described in this document is used in applications such as wall insulation, pitched roof insulation, External Thermal Insulation Composite System (ETICS), cavity wall insulation, ceiling insulation, insulation for building equipment, and industrial installations.

2.3 Technical Data

Performance data of the product in accordance with the Declaration of Performance with respect to its essential characteristics according to /EN 13163:2012+A1:2015 – Thermal insulation materials for buildings – Factory-made expanded polystyrene (EPS) products – Specification/

Construction data

Name	Value	Unit
Gross density	15	kg/m³
Compressive strength acc. to /EN 826/	60	N/mm²
Flexural strength acc. to /EN12089/	115	N/mm²
Thermal conductivity (GER)	0.032	W/(mK)
Thermal conductivity (EU)	0.031	W/(mK)

2.4 Delivery status

Neopor® Plus BMB expandable beads are supplied to Karl Bachl Kunststoffverarbeitung GmbH & Co. KG as lens-shaped granulate (1100 kg in 14 kg paper bag with a PE/PA inliner). Karl Bachl Kunststoffverarbeitung GmbH & Co. KG supplies insulation boards made of Neopor® Plus BMB to the consumer (0.04 kg PE film for 1 m³ product).

2.5 Base materials / Ancillary materials

Insulation boards made of Neopor® Plus BMB are made of polystyrene (87% by mass). The pentane used as a blowing agent (up to 5.5% by mass) is a C5 carbon. The pentane is released during the manufacturing and storage processes.

For the preparation of flame-retardant polystyrene granulate, a polymeric flame retardant (Polymer FR) with approx. 1.1% by mass is added. Polymer FR is a brominated styrene-butadiene copolymer (CAS no. 1195978-93-8) that is not subject to the REACH Regulation for Substances of Very High Concern (SVHC). To improve insulation performance, graphite is added (<6% by mass). As a result, the reflection and absorption behaviour of heat radiation is changed, whereby the insulating performance of the products is improved with low layer thickness. In addition to the standard raw materials, the manufacturer also uses expanded polystyrene foam waste that is reused during the production process.

No other additives are used in relevant amounts. Neopor® Plus BMB contains neither so-called substances of very high concern (SVHC) in accordance with the List of Candidates, Article 59 (1, 10) European REACH Regulation (EC) No. 1907/2006 in concentrations exceeding 0.1% by mass nor category 1A or 1B CMR substances which are not on the List of Candidates. No biocide products are added to the product.

Biogas (manufactured from kitchen waste) instead of natural gas and naphtha (fossil alternative) is used as feedstock for the production of Neopor® Plus BMB granulate.

2.6 Manufacture

Production of insulation boards made of Neopor® Plus BMB entails a multi-stage production process. The granulate is initially produced at the BASF SE site in Ludwigshafen followed by the foaming process at the Karl Bachl Kunststoffverarbeitung GmbH & Co. KG site in Röhrnbach. The conversion process of EPS granulate to foamed insulation boards consists of the following manufacturing stages: pre-foaming, interim storage and foaming.

During the pre-foaming stage, the granulate is foamed with the aid of steam and the blowing agent pentane. Subsequently, the expanded granulate is stored in air-permeable silos. Thanks to the diffusing air, the EPS foam particles receive the necessary stability for further processing.

The most commonly used method of producing insulation boards is block foaming followed by cutting. For this purpose, the EPS foam particles are filled into cuboid block moulds and foamed with steam at 110 °C to 120 °C. After a short cooling time, the blocks are demoulded and deposited. Then the blocks are cut into boards using mechanical or thermal cutting equipment. Production waste is fully reused for the production of primary material.

2.7 Environment and health during manufacturing

Pentane leaks during the storage and processing of insulation boards made of Neopor® Plus BMB. Particularly when cutting the foams with heated wires, good ventilation in the working area is necessary, as vapour contains pentane and small amounts of styrene. The MAK values (maximum workplace concentration) for styrene and pentane must be taken into account.

No ozone-depleting substances such as CFCs or HCFCs are used as blowing agents for the production of insulation boards made of Neopor® Plus BMB.

2.8 Product processing/Installation

Insulation boards made of Neopor® Plus BMB are easy to process and work with due to their relatively low weight.

The insulation boards are dimensionally stable and they absorb virtually no moisture. This is not only of great importance for the entire life cycle of the building, but also for the construction phase.

For all applications, the relevant standards and guidelines (e.g. quality guidelines/controls of the Federal Quality Assurance Department for EPS Rigid Foam /BFA QS EPS/ and professional rules of craft workers' associations) and manufacturer instructions must be observed.

The boards are fastened to the facade by bonding and possibly additional mechanical attachment. The panels are then plastered. The application is system-bound and requires a general building authority approval which defines the system components as well as the processing.

2.9 Packaging

Insulation boards made of Neopor® Plus BMB are packed in polyethylene film (0.04 kg PE film for 1 m^3 product). The packaging materials are disposed of by qualified disposal companies.

2.10 Condition of use

Most of the pentane blowing agent required for the foam structure is released during the manufacturing process.

Emissions during the storage and use phases are dependent on various parameters such as the foam structure, the ambient temperature, the open surface and the air exchange rate when installed. The air-filled foam ensures its very good thermal insulation properties.

When installed, all materials are resistant to ageing and moisture, whereby the insulation performance and mechanical properties remain unchanged during the entire life expectancy.

2.11 Environment and health during use

In most applications, insulation boards made of Neopor® Plus BMB do not have direct contact with the environment or indoor air. When non-installed EPS insulation boards were tested for VOC emissions in indoor applications, the emissions proved to be below the requisite limit values in countries with such regulations (see section 7.1).

2.12 Reference service life

If applied correctly, the lifetime of EPS insulation boards is equal to the building lifetime (usually without requiring any maintenance). Durability studies on applied EPS insulation boards show no loss of technical properties after 40 years.

Reference service life is not relevant due to exclusion of module B.

2.13 Extraordinary effects

Fire

The raw material achieves the fire classifications Euroclass E according to /DIN EN 13501-1/ and B1 according to /DIN 4102-1/.

The insulation boards produced usually display at least Euroclass E according to /DIN EN 13501-1/. EPS insulation boards produced in accordance with the quality criteria of /BFA QS EPS/ also achieve fire classification B1 (flame resistant) in accordance with /DIN 4102-1/.

Fire protection

Name	Value
Building material class	E
Burning droplets	-
Smoke gas development	-

Water

EPS insulation boards are chemically neutral and not water soluble. No water-soluble substances are released which could lead to pollution of ground water, rivers or seas. Because of their closed cell structure, the insulation boards can be used even under moist conditions. In the case of unintended water ingress, e.g. through leakage, there is normally no need to replace the insulation boards. The insulation performance remains largely unchanged.

Mechanical destruction

Information on product performance, including possible impacts on the environment following unforeseeable influence of water, is not relevant.

2.14 Re-use phase

As a general rule, construction techniques should be designed in such a way that it is possible to separate insulation boards made of Neopor® Plus BMB at their end of life. Only this way is recycling possible. Another option for reuse is to leave the insulation boards in place to achieve a higher energy standard for the building.

2.15 Disposal

EPS insulation boards have been reused for many years. Production residue such as cut-offs or edge profiles are reused in the production process.

If building materials are sorted by type, the recycling of EPS waste to produce new EPS insulation boards is possible. Ground recycled material from insulation boards made of Neopor® Plus BMB can be used as a lightweight aggregate for mortar and concrete. It is also used as an aggregate for PS light concrete, insulating plaster and light plaster as well as in the clay industry.

EPS insulation boards can also be recycled using a solvent-based technology. The recycled polystyrene can be used again for construction applications www.polystyreneloop.org. These processes are still in the research and development phase and are not being practiced yet.

At the end of its life cycle, a second option enables the product to be directed to incineration with energy recovery. Due to the high calorific value of polystyrene, energy embedded in the insulation boards can be reused in municipal waste incinerators equipped with energy recovery units for steam and electricity generation and for district heating.

The material is assigned to waste code 17 06 04 in accordance with the /European Waste Catalogue/.

2.16 Further information

Additional information can be found at www.mit-sicherheit-eps.de and www.basf.com/biomassbalance.

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is 1 m³ insulation board made of Neopor® Plus BMB. The conversion factors are listed in the following table.

Declared unit

Name	Value	Unit
Declared unit	1	m^3
Gross density	15	kg/m^3
Conversion factor to 1 kg	0.067	-

3.2 System boundary

Type of EPD: Cradle-to-Gate – with options

Modules considered in the Life Cycle Assessment:

- A1: Raw material supply
- A2: Transport to manufacturer
- A3: Manufacturing
- A4: Transport to site
- A5: Assembly
- C2: Transport to waste treatment
- C4: Disposal
- D: Reuse, recovery or recycling potential

The analysis of the product life cycle comprises the production and transport of base materials, manufacturing of the product and packaging materials, and is declared in Modules A1-A3. Production residue from A3 such as blanks or edge profiles are reused in the production process. This was taken into consideration when calculating the LCA parameters. Transport of the product is considered in Module A4. Disposal of the packaging materials as well as the production, transport and disposal of offcuts incurred on the construction site are considered in Module A5. Energy gained from incineration processes are declared in Module D, beyond the system boundary.

The use phase is not taken into consideration in the LCA calculations.

The EoL scenarios include transport to the End-of-Life stage (C2) and disposal of the product via incineration (C4).

The LCA for biomethane from kitchen waste comprises all of the relevant process steps from the extraction of raw materials to manufacture (Cradle-to-Gate). Kitchen waste does not have any economic value and is therefore considered clear of any encumbrances. It loses its waste status as soon as it is converted into biogas.

The absorption of biogenic carbon dioxide from the atmosphere is considered in line with the biogenic carbon content in the BMB product (A1-A3). During disposal of the product, biogenic CO2 emissions are released again which are considered in C4.

3.3 Estimates and assumptions

All inputs and outputs of the production of granulate and insulation boards in Germany were considered in the calculation.

Generic data was used for raw materials purchased from external suppliers as these materials are not produced by BASF SE or its contractors.

Assumptions were made for Modules A2, A5, C2 and D. Transport distances of raw materials to the manufacturing site (A2) were determined using the supplier's postal addresses. Approx. 1.3% installation waste was assumed for Module A5 and a distance of 50 km by truck (Euro 5, 17.3 t payload capacity, 10.4% utilisation) for Module C2. Credits for the avoided production of electricity and steam in another product system, due to incineration processes, were considered.

Biogas is considered as a base material for manufacturing and the evaluation of the environmental impacts of the BMB product.

3.4 Cut-off criteria

All primary data of the production processes was considered. No cut-off criteria were applied.

3.5 Background data

The /GaBi ts 8.5/ software from thinkstep AG was used to calculate the LCA of the declared insulation board made of Neopor® Plus BMB.

3.6 Data quality

The GaBi ts software system for Life Cycle Engineering and the GaBi ts data base were used for life cycle assessment of the products under review. The volumes produced for 2017 were provided by the manufacturers and used as primary data.

3.7 Period under review

The period under review is 2017. All internal data was collated for this period.

3.8 Allocation

No co-products arise during the production of insulation boards made of Neopor® Plus BMB. Therefore, no allocation is necessary. All credits from energy recovered from packaging waste and other incineration processes are allocated to module D.

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.

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Only background data from the /GaBi ts 8.5/ software was considered in this LCA in order to guarantee the comparability of results.

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). The values refer to the declared unit of 1 m³.

Transport to construction site (A4)

Name	Value	Unit
Transport distance	150	km
Capacity utilisation (including empty runs)	10.4	%
Gross density of products transported	15	kg/m³
Capacity utilisation volume factor	1	-

Utilisation was adapted on the basis of the density of one insulation board made of Neopor® Plus BMB.

Installation in the building (A5)

The amount of installation waste varies. Approx. 1.3% installation waste was considered for calculation of the environmental impacts of insulation boards made of Neopor® Plus BMB. Module A5 considers manufacture, transport to the construction site and disposal (incineration) of this waste.

End of Life (C1-C4)

The transport distance to the disposal site is 50 km. For the EoL stage, 100% incineration (incineration plant with R1 value < 0.6) with energy recovery (Module C4) was considered. Under German conditions, the incineration of insulation boards results in energy credits which are considered in Module D.

Reuse, recovery and/or recycling potentials (D)

Module D includes the credits for the incineration process (incineration of EPS and packaging material), i.e. credits for electricity and steam. Credits are awarded via average German data for electric and thermal energy.

5. LCA: Results

The following tables depict the results of environmental relevance according to /EN 15804/ for 1 m³ insulation board made of Neopor® Plus BMB (Biomass Balance approach). The EoL scenario is depicted in Modules C4 and D and reflects thermal treatment with energy recovery.

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

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	X	X	MND	MND	MNR	MNR	MNR	MND	MND	MND	X	MND	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m3 Neopor® Plus BMB Platte

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
Global warming potential	[kg CO_2-Eq.]	16.22	0.82	1.19	0.27	49.98	-24.27
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	4.55E-9	3.41E-14	6.15E-11	1.14E-14	2.74E-13	-1.83E-11
Acidification potential of land and water	[kg SO_2-Eq.]	1.20E-1	2.46E-3	1.75E-3	8.20E-4	3.91E-3	-2.36E-2
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	1.78E-2	6.05E-4	2.69E-4	2.01E-4	8.80E-4	-4.12E-3
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	2.88E-1	-9.19E-4	3.88E-3	-3.06E-4	2.82E-4	-2.22E-3
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	2.30E-5	6.69E-8	3.15E-7	2.23E-8	1.32E-7	-8.47E-6
Abiotic depletion potential for fossil resources	[MJ]	661.17	11.16	9.26	3.72	6.26	-313.68

RESULTS OF THE LCA - RESOURCE USE: 1 m3 Neopor® Plus BMB Platte

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
Renewable primary energy as energy carrier	[MJ]	1559.33	0.59	37.06	0.20	587.52	-75.38
Renewable primary energy resources as material utilization	[MJ]	594.30	0.00	-7.92	0.00	-586.38	0.00
Total use of renewable primary energy resources	[MJ]	2153.63	0.59	29.14	0.20	1.14	-75.38
Non-renewable primary energy as energy carrier	[MJ]	764.81	11.22	12.54	3.47	6.87	-353.83
Non-renewable primary energy as material utilization	[MJ]	1.84	0.00	-1.84	0.00	0.00	0.00
Total use of non-renewable primary energy resources	[MJ]	766.65	11.22	10.70	3.74	6.87	-353.83
Use of secondary material	[kg]	17.32	0.00	0.00	0.00	0.00	0.00
Use of renewable secondary fuels	[MJ]	0.00	0.00	0.00	0.00	0.00	0.00
Use of non-renewable secondary fuels	[MJ]	0.00	0.00	0.00	0.00	0.00	0.00
Use of net fresh water	[m³]	2.42E-1	1.08E-3	5.18E-3	3.59E-4	9.45E-2	-4.81E-2

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 m3 Neopor® Plus BMB Platte

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
Hazardous waste disposed	[kg]	1.29E-6	5.92E-7	2.84E-9	1.97E-7	5.12E-9	-1.99E-7
Non-hazardous waste disposed	[kg]	2.95E+0	9.01E-4	4.10E-2	3.00E-4	5.34E-2	-1.92E-1
Radioactive waste disposed	[kg]	4.15E-2	2.34E-5	5.66E-4	7.81E-6	2.40E-4	-1.59E-2
Components for re-use	[kg]	0.00	0.00	0.00	0.00	0.00	0.00
Materials for recycling	[kg]	0.00	0.00	0.00	0.00	0.00	0.00
Materials for energy recovery	[kg]	0.00	0.00	0.00	0.00	0.00	0.00
Exported electrical energy	[MJ]	0.00	0.00	1.55	0.00	76.50	0.00
Exported thermal energy	[MJ]	0.00	0.00	3.57	0.00	176.47	0.00

The results of environmental relevance in accordance with /EN 15804/ for 1 m³ insulation board manufactured from Neopor® Plus based on the fossil raw materials naphtha and natural gas are depicted in a separate EPD.

6. LCA: Interpretation

Virtually all impact categories are significantly influenced by the provision of raw materials and production (A1 + A5). The polystyrene used in the production process already contains a large portion of the environmental burden. The GWP impact category is also influenced (by approx. 50%) by the incineration process (C4) for the insulation board made of Neopor® Plus BMB.

In the EP, AP, ADPe and ADPf impact categories, granulate production has a 70-90% influence on the result of A1-A3. The Ozone Depletion Potential is largely caused by the production of polystyrene granulate (approx. 99% of the impacts of A1-A3).

The foaming process for the declared product also contributes significantly to the environmental impacts of Modules A1-A3. Overall, the emissions of pentane during the production and ageing process contribute to 90% of the Photochemical Ozone Creation Potential (POCP).

The effort (additional energy and material) for the EoL scenario (C4) and the ensuing energy credits in the form of electricity and steam due to incineration in Module D are considered separately. This results in negative values in Module D.

Transport (A2, A4 and C2) has a minor influence on all impact categories compared to the contributions made by the other modules.

7. Requisite evidence

7.1 VOC emissions

Like all EPS products, insulation boards made of Neopor® Plus BMB can be used for indoor applications. They are not, however, typically directly exposed to indoor air but are rather covered by a covering layer such as gypsum board.

Within the framework of a European study, emissions by EPS insulation boards have been measured for samples based upon 12 different kinds of EPS raw material. The measurements according to /CEN TS 16516/ and /ISO 16000 3-6-9-11/ were carried out by /Eurofins/ in April 2016. The insulation materials tested comply with the requirements of the /AgBB/ scheme for using construction products in indoor applications. The insulation materials tested can be rated A+ in accordance with the French VOC regulation.

VOC emissions

Name	Value	Unit
AgBB overview of results (28 days)	25	µg/m^3
TVOC (C6 - C16) (3 days)	75	µg/m³
R (dimensionless)	0.084	-
Carcinogenic Substances	1	µg/m³

To make it easier for architects and developers to find low-emission materials, the /Greenguard/ label indicates products that meet the strict emissions limits for Volatile Organic Compounds (VOCs). There are limits for over 360 VOCs. The insulation boards made of Neopor® Plus BMB meet the criteria in accordance with /Greenguard/ and /Greenguard Gold/. The latter also meets the requirements of the Californian Department of Public Health Services which means it may also be used in schools and health facilities.

7.2 Leaching

Leaching is not of relevance for insulation boards made of Neopor® Plus BMB.

8. References

/AgBB/
Evaluation scheme Health-related Evaluation Procedure for Volatile Organic Compounds Emissions (VOC and SVOC) from Building Products, Committee for Health-related Evaluation of Building Products, Status May 2010

/BFA QS EPS/
Bundesfachabteilung Qualitätssicherung EPS Hartschaum
Qualitätsrichtlinien BFA QS EPS, Heidelberg

/CEN TS 16516/
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/DIN EN 13501-1/
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/Foto Titelseite/
BASF Wohnen + Bauen GmbH/ Geisler

/GaBi ts 8.5/
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/Greenguard Gold/
UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

/ISO 16000 parts 3-6-9-11/
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/REDcert/
Gesellschaft zur Zertifizierung von nachhaltig erzeugter Biomasse e.V.
REDcert GmbH, Bonn, www.redcert.org

/TÜV Süd Standard CMS 71/
Mass Balance for the traceability of renewable raw materials in chemistry (abbreviated: Renewable Chemicals), Version 02/2013

/IBU 2016/
IBU (2016): General Programme Instructions for the Preparation of EPDs at the Institut Bauen und Umwelt e.V., Version 1.1 Institut Bauen und Umwelt e.V., Berlin.
www.ibu-epd.de

/ISO 14025/
DIN EN /ISO 14025:2011-10/, Environmental labels and declarations — Type III environmental declarations — Principles and procedures

/EN 15804/
/EN 15804:2012-04+A1 2013/, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

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