ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

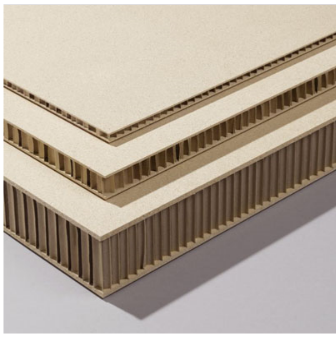
Owner of the Declaration	**Fritz EGGER GmbH & Co. OG**
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-EGG-20150312-IBD1-EN
Issue date	20.11.2015
Valid to	19.11.2020

Lightweight boards EUROLIGHT raw

Fritz EGGER GmbH & Co. OG

Institut Bauen und Umwelt e.V.

www.bau-umwelt.com / https://epd-online.com



1. General Information

Fritz EGGER GmbH & Co. OG

Programme holder
IBU - Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Declaration number
EPD-EGG-20150312-IBD1-EN

This Declaration is based on the Product Category Rules:
Wood based panels, 07.2014
(PCR tested and approved by the SVR)

Issue date
20.11.2015

Valid to
19.11.2020

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

Dr. Burkhart Lehmann
(Managing Director IBU)

EUROLIGHT® raw

Owner of the Declaration
Fritz EGGER GmbH & Co. OG
Holzwerkstoffe
Weiberndorf 20
A - 6380 St. Johann in Tirol

Declared product / Declared unit
1 square meter of EGGER raw lightweight boards EUROLIGHT raw (8 mm top layer; 44.5 mm average overall thickness)

Scope:
This document refers to raw lightweight boards manufactured by Holzwerkstoffe GmbH & Co. OG in the Wörgl and St. Johann in Tirol (Austria) plants. This document is translated from the German Environmental Product Declaration into English. It is based on the German original version EPD-EGG-20150312-IBD1-DE. The verifier has no influence on the quality of the translation.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 CEN Norm /EN 15804/ serves as the core PCR

Independent verification of the declaration according to /ISO 14025/

☐ internally ☒ externally

Matthias Klingler
(Independent verifier appointed by SVR)

2. Product

2.1 Product description
EUROLIGHT is a lightweight board with a raw chipboard as top layer and a cardboard comb core inside. The sandwich board offers maximum weight reduction without loss of load capacity and rigidity. An average product with an overall thickness of 44.5 mm and an area weight of 12 kg/m² is being considered. The overall thickness and the area weight of the product represent average values, which were weighted with the production volumes of the various thicknesses.

2.2 Application
Raw lightweight boards are used in decorative interior design, furniture, as well as door construction. They are employed, for example, in the kitchen area as worktop or as interior door. Lightweight boards are used where a massive look with low weight is desired.

2.3 Technical Data

Structural engineering data
Data for lightweight boards with 8 mm top layer and a thickness of 38, 50 and 60 mm.

Name	Value	Unit
Density 38mm according to /DIN EN 323/	325	kg/m^3
Density 50mm according to /DIN EN 323/	254	kg/m^3
Density 60mm according to /DIN EN 323/	217	kg/m^3
Grammage	12	kg/m²
Bending strength after 28 days 38mm according to /DIN 68874-1/, test load 150kg/m2, axis distance 1000mm	≤ 4.0	mm
Bending strength after 28 days 50mm according to /DIN 68874-1/, test load 150kg/m2, axis distance 1000mm	≤ 3.0	mm
Bending strength after 28 days 60mm according to /DIN 68874-1/, test load 150kg/m2, axis distance 1000mm	≤ 2.0	mm
Material moisture when delivered according to /EN 322/	5-9	%
Tensile strength rectangular according to /EN 319/	0.15	N/mm²
Compressive strength according	≤ 1.5	kg/cm^2

to /CEN/TS 00112189:2012.2/ according to /CEN/TS 00112189:2012.2/		
Thickness tolerance according to /EN 324/	+- 0.3	mm
Thermal conductivity according to /EN 13986/ for chipboard top layers	0.12 - 0.18	W/(mK)
Water vapour diffusion resistance factor for chipboard top layers	15	µ-feucht
Water vapour diffusion resistance factor for chipboard top layers	50	µ-trocken
Sound insulation R'w 38mm	28	dB
Sound insulation R'w 50mm	26.5	dB
Sound insulation R'w 60mm	25.5	dB

2.4 Placing on the market / Application rules

Regulation (EU) no. 305/2011 applies to bringing the product into circulation in the EU/EFTA (with the exception of Switzerland). The products require a declaration of performance according to /DIN EN 13986:2005-03, Wood-based panels for use in construction – Characteristics, evaluation of conformity and marking; German version (applicable to top layers)/ and the CE marking.
The following also apply:
/DIN EN 312:2010-12; Chipboards - Requirements; German version (applicable to top layers)/
For the use of products the relevant national specifications apply.

2.5 Delivery status

Full format raw boards
5,610 x 2,070 x 38 / 50 / 60 mm
Half-format raw boards:
2,800 x 2,070 x 38 / 50 / 60 mm
Various sizes and configurations can be delivered upon request.

2.6 Base materials / Ancillary materials

Raw materials

Wood mass: Decorticated, fresh wood from forest thinnings as well as sawmill waste, main wood type spruce and pine, are used exclusively for the production of lightweight boards.
UF glue: consisting of urea-formaldehyde resin. The aminoplastic glue sets fully through polycondensation during the pressing process.
Paraffin wax emulsion: A paraffin wax emulsion is added to the recipe during application as a water repellent (improves moisture resistance).
PUR: Two-component formaldehyde-free adhesive system consisting of polyol (Elastopor H 1101/5) and isocyanate (IsoPMDI 92140); the adhesive system reacts in a polyaddition without elimination of other substances into a solid mass.
Paper/cardboard: Cardboard comb core as medium layer

Composition

Top layers (thin chipboards):

- Wood chips, wood type mainly spruce and pine, approximately 84-86 %
- Water approx. 4-7 %
- UF glue (urea resin) approx. 8-10%
- Paraffin wax emulsion <1 %

Medium layers:

- Hexagon honeycomb of recycled cardboard with 15 + -2 mm cell width
- Sinus honeycomb made from recycled cardboard

Gluing of medium and top layers:

- PUR adhesive system

2.7 Manufacture

Production of rawboards (top layer) in Wörgl

1. Roundwood cutting
2. Wood chip preparation
3. Waste wood treatment
4. Drying the chips to approximately 2 – 3 % residual moisture
5. Applying glue to the chips
6. Spreading the glue-coated chips onto a forming belt
7. Compression of the chip cake in a continuously operating calander hot press
8. Sanding the upper and lower sides
9. Cutting and trimming the board strand into rawboard formats
10. Piling into large stacks

Production of lightweight boards in St. Johann

1. Separation of both connected raw boards via longitudinal circular saws and cross cutting blades
2. Glue-coating of both top layers with the PUR adhesive system
3. Expansion of the hexagonal honeycomb in a tunnel dryer
4. Connection of glue-coated top layer with the medium layer
5. Calibration of the calibration element in a continuous calibration press
6. Trimming and setting of separating cuts
7. Stacking and packing the plates

2.8 Environment and health during manufacturing

The maximum admissible workplace concentration during the manufacturing processes (MAC values) are permanently monitored internally and checked by an external safety body (TÜV Süd). The EGGER health management has been awarded the Austrian seal of quality for workplace health promotion /BGF/. It includes measures such as physio-therapeutic assistance directly in the workplace, and the regular checking and improvement of all production workplaces through personal inspection by the company physician.
The plants Wörgl (thin chipboard production) and St. Johann in Tirol (lightweight board production) have been awarded an /ISO 9001/-certified quality management and an /ISO 14001/-certified environmental management system.
The plant St. Johann in Tirol has been awarded /EFB+/ as disposal specialised facility.

2.9 Product processing/Installation

EGGER lightweight boards can be sawed and drilled with regular (electrical) machines. Wear a respiratory mask if using hand tools without a dust extraction device. The usual processing safety measures (protective goggles, dust mask in case of dust) shall be taken. Observe all liability insurance association regulations for commercial processing operations. Detailed information and processing recommendations are available in the documents "EUROLIGHT

Transport and Storage Instructions" and "EUROLIGHT Processing Guidelines", which can be downloaded at www.egger.com.

2.10 Packaging
Raw Eurolight boards are delivered in composite systems for further processing. The stacked pallets are wrapped with cardboard and fixed in place with packaging straps.

2.11 Condition of use
The component materials comply in terms of their proportions to those of the basic material composition described in no. 2.6. In the course of pressing thin chipboards, the bonding agent (UF glue) is cross-linked in three dimensions by a polycondensation reaction under the addition of heat. It is chemically stable and mechanically bonded to the wood under normal conditions.

2.12 Environment and health during use
No impairment of or damage to health is to be expected when the lightweight boards are used normally and in accordance with the intended purpose. Natural wood constituents may be released in small quantities. With the exception of minor amounts of formaldehyde in quantities that are harmless to health, no emissions of hazardous substances can be detected (see Chap. 7, Certificates). Hazards to water, air and the soil cannot occur when used as intended.

2.13 Reference service life
No reference service life is specified, as the service life depends on the application area.
Changes relative to lightfastness, scratch-resistance, and surface wear depend on the coating system used.

2.14 Extraordinary effects

Fire
Fire behaviour according to /EN 13501-1/
Fire protection

Name	Value
Building material class	D
Burning droplets	d0
Smoke gas development	s2

Water
No water-polluting substances are washed out. Lightweight boards are not resistant against continuous water influence, damaged parts however can be locally replaced.

Mechanical destruction
The fracture pattern of a lightweight board shows relatively brittle behaviour, with the possibility of sharp edges where the boards break (risk of injury).

2.15 Re-use phase
On renovation or discontinuation of the utilisation phase of a building, EGGER lightweight boards can, in the event of selective demolition, be easily collected separately and be reused again for the same or a different application.

2.16 Disposal
Rests of EGGER lightweight boards remaining on the construction site, as well as those from demolition works, must be collected separately by type of waste. If not mixed with other materials, lightweight boards can be processed and returned to the manufacturing of wood-based materials, that is, used in materials. If this is not possible, energetic recycling is recommended due to the high calorific value. When disposing of the material in incineration facilities, the provisions of local authorities are to be taken into account.
Waste code according to /European waste catalogue/: 170201/030105
Calorific value: approx. 16 MJ/kg with an equilibrium moisture content of 12%

2.17 Further information
www.egger.com

3. LCA: Calculation rules

3.1 Declared Unit
The declaration relates to the manufacture of one square meter of Eurolight board.
Raw Eurolight boards display an average area weight of 12 kg/m² and an average overall thickness of 44.5 mm. The average was weighted according to the production volumes of the individual thicknesses.

Specification of the declared unit

Name	Value	Unit
Declared unit	1	m²
Surface weight	12	kg/m²
Conversion factor to 1 kg	83	-

3.2 System boundary
This is a "from cradle to factory gate, with options" EPD. The life cycle analysis for the products under consideration encompasses the following segments of the life cycle: “Product stage” and “Credits and charges beyond the limits of the product system”. The systems therefore encompass the following stages according to /EN 15804/: Product stage (module A1-A3):

- Module A1 Procurement and processing of raw materials as well as processing of secondary raw materials serving as inputs
- Module A2 Transportation to the manufacturer
- Module A3 Production

Disposal stage (C3)
- Module C3: in the sense of climate neutrality, biogenic carbon dioxide emissions are declared in C3

Credits and debits beyond the limits of the product system (module D):
- Module D includes the recovery potential of the net flows leaving the system border at the end of the life cycle. The product reaches the *end-of-waste* status after being removed from the building and 100% of it is thermally utilised in a biomass facility. The effects of the

thermal utilisation and the credits of the generated energy are declared in Module D.

3.3 Estimates and assumptions

The emulsion used in manufacturing is evaluated as a paraffin-water mixture. For the polyol/isocyanate used, a 1:1 polyether-polyol and methylene-diisocyanate mixture is used. The composition of the sanding belts is estimated with cardboard, sand, resin and polyester materials.
The estimations listed represent estimations as close to reality as possible, from which a slight effect on the overall result is to be expected.
It is assumed that the product can be reused for energy recovery. Given that the Eurolight boards can be expected to be reused in the EU area, the assumption of the substitution of thermal energy and electricity in accordance with EU-27 Energy Mix corresponds to realistic conditions.

3.4 Cut-off criteria

The packaging of the raw Eurolight boards is not integrated in the model, as these are delivered in composite systems for further processing and only small amounts of waste are incurred in this respect. The transport of thin chipboards from Wörgl to St. Johann was also neglected.
It can therefore be assumed that the sum of disregarded processes does not exceed 5% of the impact categories and cut-off criteria according to /EN 15804/ are fulfilled.

3.5 Background data

All relevant background datasets were taken from the database of the /GaBi 7/ software, which is not older than 10 years. The data used have been collected subject to consistent time and methodology constraints.

3.6 Data quality

For the products under review, the data were collected directly by EGGER at the production sites of Wörgl and St. Johann for the 2013 business year based on a questionnaire prepared by thinkstep, the consulting company. The data made available for EGGER were checked for plausibility. It can therefore be assumed that the datas are highly representative.

3.7 Period under review

All primary data from the 2013 EGGER operational data collection were taken into account, i.e., all starting materials used in the composition, the energy needs, and all direct production waste were included in the assessment. Actual transport distances and transport means were applied for inputs and outputs.

3.8 Allocation

Energy credits for the electricity and thermal energy produced in the biomass power plant at the *end of the life* cycle are allocated according to the heating value of the inputs and based on the efficiency of the plant. The credit for thermal energy is calculated based on the dataset "EU-27: Thermal energy from natural gas PE"; the credit for electricity is calculated based on the dataset "EU-27: Strom-Mix PE" (EN: Electricity Mix PE). The calculation of the emissions dependent on the input (e.g., CO2, HCl, SO2 or heavy metals) at the *end of life* was performed according to the material composition of the introduced ranges. The technology-dependent emissions (e.g. CO) are allocated according to the exhaust emission quantity. Waste materials were also added in the total of the production.
The upstream chain for harvesting was recorded according to /Hasch 2002/ in the update by Rüter and Albrecht (2007). As regards residual sawmill wood, the forestry process and associated transport are added to wood according to volume proportion (respectively dry mass), from the sawmill processes no encumbrances are added to residual sawmill wood. A calculation key is applied in the manufacturer's controlling in order to mark off material flows from other products manufactured in the plant.
The differentiation of the respective input and output flows was done for the thin chipboard based on produced volume, and for the lightweight boards based on produced square meters. When calculating the values for the various thicknesses, the dependence of the product composition on top and medium layer thickness was taken into account.

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.

4. LCA: Scenarios and additional technical information

The following technical information represents the basis for the declared module and can be used for the development of specific scenarios in the context of a building evaluation.

End of life cycle (C1-C4)

Name	Value	Unit
Energy recovery	12.4	kg

Reuse, recuperation and recycling potential (D), relevant scenarios

The *end of life* cycle assumes the thermal use of Eurolight boards as secondary fuel, given that wood-based materials reach the end of the waste status after removal from the building. The thermal recovery is modelled on a 100% processing rate of Eurolight boards. This scenario represents an assumption. When using the data set in the context of the building, it is necessary to assume a realistic processing rate. At *end of life*, Eurolight boards are burned in a biomass power plant which corresponds to the EU average. Therefore, emission factors, current decoupling, and efficiency are adapted to the EU average.

Name	Value	Unit
Moisture during thermal reuse	12	%
Calorific value, wood (assumed equilibrium moisture of 12%)	16	MJ/kg

5. LCA: Results

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	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	X	MND	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m² raw Eurolight board

Parameter	Unit	A1-A3	C3	D
Global warming potential	[kg CO_2-Eq.]	-9.85E+14	1.97E+13	-1.18E+14
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.35E+14	-	-5.67E+14
Acidification potential of land and water	[kg SO_2-Eq.]	2.37E+14	-	-7.38E+13
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	6.35E+14	-	5.50E+14
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	5.68E+14	-	9.95E+14
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	6.68E+13	-	-1.37E+14
Abiotic depletion potential for fossil resources	[MJ]	1.44E+13	-	-1.61E+14

RESULTS OF THE LCA - RESOURCE USE: 1 m² raw Eurolight board

Parameter	Unit	A1-A3	C3	D
Renewable primary energy as energy carrier	[MJ]	4.55E+14	-	-
Renewable primary energy resources as material utilization	[MJ]	1.85E+14	-	-
Total use of renewable primary energy resources	[MJ]	2.30E+14	-	-2.86E+14
Non-renewable primary energy as energy carrier	[MJ]	1.24E+13	-	-
Non-renewable primary energy as material utilization	[MJ]	2.67E+13	-	-
Total use of non-renewable primary energy resources	[MJ]	1.50E+14	-	-2.12E+14
Use of secondary material	[kg]	3.26E+2	-	0.00E+0
Use of renewable secondary fuels	[MJ]	0.00E+0	-	1.85E+14
Use of non-renewable secondary fuels	[MJ]	0.00E+0	-	2.67E+13
Use of net fresh water	[m³]	3.23E+14	-	-4.13E+14

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES:
1 m² raw Eurolight board

Parameter	Unit	A1-A3	C3	D
Hazardous waste disposed	[kg]	1.63E+14	-	-7.43E+14
Non-hazardous waste disposed	[kg]	4.91E+13	-	2.42E+14
Radioactive waste disposed	[kg]	2.42E+14	-	-2.03E+14
Components for re-use	[kg]	0.00E+0	-	-
Materials for recycling	[kg]	0.00E+0	-	-
Materials for energy recovery	[kg]	-	1.24E+2	-
Exported electrical energy	[MJ]	-	-	-
Exported thermal energy	[MJ]	-	-	-

6. LCA: Interpretation

During the production of the raw product, a large proportion of the environmental impact and the use of primary energy is caused by the upstream chain, i.e. the production of the base materials.
The pre-chains of the adhesive system used can be identified as a significant impact factor in all environmental impact categories. In addition to the adhesive system, the provision of energy in the form of thermal energy from natural gas is a major driver of the global warming potential (**GWP**).
The negative contribution of the procurement of raw materials towards potential global warming (**GWP**) is attributed to the use of wood-based raw materials. This effect is explained by the carbon capture during tree growth. The use of wood-based raw materials also shows a direct correlation to the use of renewable primary energy, which can be explained to a large extent by the use of woodchips and the procurement of logs.
In the categories acidification (**AP**), eutrophication (**EP**) and summer smog (**POCP**), the effect is also visibly compounded in the manufacturing phase by the electrical energy use, the manufacturing of the comb, and the supply of other raw materials, in addition to the adhesive system.
The ozone depletion potential (**ODP**) is significantly marked by the electrical energy provision and the comb, in addition to the adhesive system.
In fossil abiotic resource use (**ADPf**), the contribution of the thermal energy from natural gas plays a significant role, in addition to the glue system.
The elementary abiotic resource use (**ADPe**) is largely due to the glue system.

The renewable primary energy use is influenced by the use of the biomass in the production process. Non-renewable primary energy is primarily used for the glue system and the thermal energy provision.

7. Requisite evidence

7.1 Formaldehyde
Measurement authority: WKI Fraunhofer Wilhelm-Klauditz-Institute, testing and certification facility, Braunschweig, DE.
Test report 1: QA-2013-2312
EGGER thin chipboard E1 P2 CE 3 mm
valid for thickness range ≤ 12 mm
Result: The formaldehyde content of top layers was tested using the perforator method according to /DIN EN 120/. The results for thin chipboards confirm compliance with the threshold of 6.5 mg (at 6.5% moisture). Calculated for 6.5% moisture, the boards receive, according to the test report, on average 5.2 mg.
Test report 2: QA-2013-0945
EUROLIGHT Decor E1 50 mm
valid for the thickness range 12≤60 mm
Result: The formaldehyde emission of the laminated lightweight board was tested using the gas analysis method according to /DIN EN 717-2:1995-01/. At 0.2 mg, the results are far below the threshold of ≤ 3.5 mg HCOH /(h*m2).

7.2 MDI
Measurement site: Wessling Beratende Ingenieure GmbH, D
Test report: IAL-00491-08
Date: 04 September 2008
Method: BIA 7670, sampling volume 100 L, exchange of air 1
Result: The emission of MDI and other isocyanates in the test chamber were, after 24 hours, below the detection limit of the analytical method for both the tested raw chipboards and the lightweight boards. Given that the recipe hasn't changed, the said test report maintains its validity.

7.4 Fire gas toxicity
Measurement site: epa Energie- und Prozesstechnik Aachen GmbH, Aachen, Germany
Test report: No. 17/2014, EGGER Eurolight raw
Date: 25 June 2014
Method: Testing the toxic fire gases according to /DIN 4102 Part 1/ - Category A at 400°C
Results: Under the selected test conditions, it was not possible to establish any chlorine compounds (HCI detection limit 1 ppm) or any sulphur compounds (SO2 detection limit 1 ppm). The hydrocyanic acid concentration (HCN detection limit 2 ppm) corresponds to the concentration as emitted by wood under the same conditions. The gaseous contents released under the selected test conditions correspond largely to the emissions released by wood under the same conditions.

7.5 VOC emissions
Unspecified as optional with shortened validity of EPD.

7.6 Lindane/PCP
Measurement centre: EPH Entwicklungs- und Prüflabor Holztechnologie, Dresden, DE commissioned by WKI Fraunhofer Wilhelm-Klauditz-Institut Prüf-, Überwachungs- und Zertifizierungsstelle, Braunschweig, DE
Test reports, date: Test report 2513168_4366-1 (16.4.2013) / QA-2013-0899 (07.05.2013)
Third-party monitoring of wood-based boards with respect to the content of pentachlorophenol (PCP) and γ-hexachlorocyclohexane (lindane) for EGGER thin chipboard 3.2 mm
valid for the thickness range ≤12mm
Result: After extracting the substances of content, the solutions were derivatised, prepared and then analysed using gas-phase chromatography. The values for PCP and lindane are below the determination limit of 0.05 mg/kg. The stipulations of the /Chemicals Regulation/ for wood and wood-based materials with regard to PCP and lindane are observed.

8. References

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DIN EN 120:2011-11, Wood-based materials - Determining the formaldehyde content - Extraction method (called the perforator method); German version prEN 120:2011

DIN EN 312:2010-12, Chipboards - Requirements; German version EN 312:2010

DIN 68874-1:1985-01, Furniture insert shelves and shelf bearers; Requirements and testing of furniture

DIN EN 319:1993-08, Chipboards and fibreboards; Determination of tensile strength perpendicular to board; German version EN 319:1993

DIN EN 322:1993-08:
Wood-based panels; determining the moisture content; German version EN 322:1993

EN 323:1993;Wood-based materials; determining the bulk density; German version EN 323:1993

DIN EN 324-1:1993-08, Wood-based materials - determining the board mass - Part 1: determining the thickness, width and length; German version EN 324-1:1993

DIN EN 324-2:1993-08, Wood-based materials - determining the board mass - Part 2: Determining the squareness and straightness of edges; German version EN 324-2:1993

DIN EN 717-2:1995-01, Wood-based materials - Determination of formaldehyde emission – Part 2: Formaldehyde emission according to the gas analysis method

DIN 4102-1: 1998-05, Fire behaviour of building materials and components – Part 1: Building materials; terminology, requirements and tests

DIN EN 13986:2005-03, Wood material for use in building construction - characteristics, assessment of the conformity and labelling; German Version EN 13986:2004

EFB+: disposal companies registered in the UMG register which use environmental management systems equivalent to EMAS according to the UMG register VO StF: Federal Official Journal I II No. 152/2012. The Register Regulation is stipulated on the basis of art. 15 para. 5 of the Environmental Management Act (UMG), Federal Official Journal I No. 96/2001 in the version of the Federal Law Federal Official Journal I No. 99/2004.

ISO 14001:2004, Environmental management systems - Requirements with guidance for use ; German and English version EN ISO 14001:2004

DIN EN ISO 9001:2008-12, Quality management systems – Success through quality

BGF Quality mark for workplace health promotion, Austrian Network for Workplace Health Promotion, www.netzwerk-bgf.at

DIN EN 13501-1:2007-05+A1:2009, Classification of building products and construction methods by fire behaviour - Part 1: Classification with the results of tests on the reaction to fire of building products; German version EN 13501-1:2007

EAK, "*European Waste Catalogue EWC*" in the version of the Commission Decision 2001/118/EC of 16 January 2001 regarding the amendment of Decision 2000/532/EC regarding a waste catalogue

ChemVerbotsV, Chemicals Regulation in the version of the Communication of 13 June 2003 (Federal Official Journal I p. 867, 1644), modified by article 5 paragraph 40 of the Law of 24 February 2012 (Federal Official Journal I p. 212)

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GaBi 7
GaBi Software-*System and Databases for the Life Cycle Engineering*, Copyright, TM. Stuttgart, Leinfelden-Echterdingen 1992-2015.

Institut Bauen und Umwelt
Institut Bauen und Umwelt e.V., Berlin(pub.): Generation of Environmental Product Declarations (EPDs);

General principles
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www.bau-umwelt.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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