nikpol™

laminate

material safety data sheets

ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	Fritz EGGER GmbH & Co. OG Holzwerkstoffe
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-EGG-2010264-IBA1-EN
Issue date	31.07.2014
Valid to	30.07.2019

EGGER Laminate

Fritz EGGER GmbH & Co. OG Holzwerkstoffe

Institut Bauen und Umwelt e.V.

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

1. General Information

FRITZ EGGER GmbH & Co. OG	EGGER Laminate
Programme holder IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany	**Owner of the Declaration** FRITZ EGGER Gmbh & Co. OG Holzwerkstoffe Weiberndorf 20 6380 St. Johann in Tirol Austria
Declaration number EPD-EGG-2010264-IBA1-EN	**Declared product / Declared unit** One square meter of EGGER Laminate with a nominal thickness of 0.8mm.
This Declaration is based on the Product Category Rules: Laminates, 07.2014 (PCR tested and approved by the independent expert committee)	**Scope:** This document refers to the laminate manufactured by EGGER Kunststoffe GmbH & Co. KG in its Gifhorn (Germany) plant. 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.
Issue date 31.07.2014	
Valid to 30.07.2019	**Verification** The CEN Norm EN 15804 serves as the core PCR Independent verification of the declaration according to ISO 14025 ☐ internally ☒ externally
Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)	
Dr. Burkhart Lehmann (Managing Director IBU)	Matthias Klingler (Independent tester appointed by SVA)

2. Product

2.1 Product description

EGGER laminates are decorative laminates based on curable resins (laminates). Laminates consist of cellulose fibre web (paper) impregnated with heat-setting resins. They have a multilayer structure and consist of melamine resin impregnated decorative paper and one or more layers of soda kraft paper impregnated with phenolic resins, which are laminated under high pressure and heat. The laminate structure, the resin and paper quality, the surface texture, use of special overlays and the press parameters during production determine the laminate quality and therefore the subsequent use or area of application.

2.2 Application

Laminates are non-weight-bearing and serve as lamination materials. EGGER laminates are only suitable for indoor applications. The laminate is used for the lamination of wood-based materials or other coreboards as so-called composite elements for indoor applications in furniture construction and interior design.

2.3 Technical Data

EGGER Laminate is tested according to the testing procedure described in the /EN438-2:2016/ and fulfils the requirements described in /EN 438-3:2016/. The technical data sheet "EGGER Laminate" provides detailed information regarding quality features and product properties. www.egger.com/laminates

Laminate HGP

Name	Value	Unit
Density	≥ 1350	kg/m³
Resistance to abrasion * according to EN 438	≥ 150	U
Impact resistance (small sphere) according to EN 438	≥ 20	Newton
Resistance to scratches (textured finishes) according to EN 438	3	Degree
Resistance to scratches (smooth finishes) according to EN 438	2	Degree
Lightfastness according to EN 438	4 - 5	Greyscale
Dimensional deviation Thickness tolerance	± 0.10	mm
Dimensional deviation Length and width tolerance	+10/-0	mm

* Initial point IP

The mass per unit area is calculated using the following formula:

Mass per unit area [kg/m²] = Density 1350 [kg/m³] x Laminate thickness [m]

2.4 Placing on the market / Application rules

The product corresponds to standard /EN 438-3/ - High-Pressure Decorative Laminates (HPL) – Sheets based on thermosetting resins (laminates) - Part 3: Classification and specifications for laminates less than 2 mm thick intended for bonding to supporting substrates; German version /EN 438--3:2016/. Corresponding national regulations apply to use.

2.5 Delivery status

EGGER Laminates are delivered as format ware.
Form of delivery - format:

- Min. length: 800 mm
- Maximum length: 5,600 mm
- Maximum width: 1,310 mm
- Nominal thickness: 0.40 to 1.20 mm

Form of delivery - format - roll:

- Max. roll length: 400 m
- Max. roll width: 1,310 mm
- Nominal thickness: 0.40 to 0.60 mm

2.6 Base materials / Ancillary materials

Name	Value	Unit
Paper percentage	57	%
Resin percentage	42	%
Additive	1	%

EGGER Laminates consist of:
- decor paper (50 -125 g/m²)
- soda kraft paper (60 – 150 g/m²)
- backing paper (50 – 100 g/m²)
- overlay paper (20 – 25 g/m²)
- melamine-formaldehyde resin
- phenol-formaldehyde resin

2.7 Manufacture

EGGER laminates are only produced using a continuous process. Dual-belt presses allow the continuous production of various laminate thicknesses and grades. This grade or type of laminate production is generally known as CPL (Continuous Pressed Laminate). Depending on the pressure during production, EGGER laminates are produced in accordance with or based on /EN 438-3:2016/.

The laminates consist of layers of cellulose fibre webs (usually paper) that are impregnated with curable resins. The one-sided outer layer(s) with decorative colours or patterns is (are) impregnated with melamine-based resins. The core layers are impregnated with phenolic resins. Applying heat and pressure causes the resins to flow and subsequently cure. Cross-linking of the resins, reinforced by the cellulose fibres of the papers, results in a very dense material with a sealed surface.

2.8 Environment and health during manufacturing

The manufacturing plant is certified according to the international environmental management standard /ISO 14001/. The management system includes the constant improvement of the environmental performance assessment, the continuous reduction of environmental risks, as well as the implementation of environmental protection measures.

Due to the manufacturing conditions no measures for health protection are necessary over and above the legislative and other regulations. Values in all areas of the plant are significantly below the maximum allowable concentration /MAC/ (Germany).

Air: Exhaust air from the production process is cleaned in accordance with the applicable legal regulations. Emissions are significantly below the /TG Air/ (Technical Guideline to Keeping Air Clean).
Water / ground: There is no contamination of water or the ground. Waste water from the production process is fed into the sewer system.
Noise protection measurements showed that all the values determined within and outside of the production plant were far below the minimum requirements applicable for Germany. Sections of the plant where high noise levels are produced have been shielded by suitable construction measures.

2.9 Product processing/Installation

The product is used for the lamination of classical wood-based materials, such as chip, MDF (medium-density fibreboard), and HDF (high-density fibreboard) boards. It may be processed with conventional urea-formaldehyde resin glue and dispersion glue in presses (flat, short cycle and dual-belt presses) using the hot or cold process. Conventional wood processing machines such as a panel saw, table saw, circular saw or jigsaw may be used to cut laminates to size. Laminates are usually cut to size using a panel saw or table saw. Breathing protection should be worn when processing laminates without a dust / chip extraction system.
Extensive information and processing recommendations are available under www.egger.com/laminates.

2.10 Packaging

The laminates are packaged and delivered on non-returnable or returnable wood pallets. Other packaging material includes: cardboard, wood-based materials, PE films, and PET strapping.
The cardboard, wood-based materials, and plastic components can be thermally processed after use.

2.11 Condition of use

Ingredients in utilisation state:
The components of laminates correspond in their proportions to those of the base material composition in Section 2.6 “Base Materials/Ancillary materials".

2.12 Environment and health during use

Environmental protection: When the described products are used properly in accordance with the area of application, there is no risk of water, air or ground contamination according to the current state of knowledge.
Health protection: No impairment of or damage to health is to be expected when laminates are used normally and in accordance with the intended purpose.

With the exception of minor amounts of formaldehyde in quantities that are harmless to health, no emissions of hazardous substances can be detected.

2.13 Reference service life

A reference period of use was not declared in this study since the period of use was not taken into account in the model.

2.14 Extraordinary effects

Fire

EGGER laminate complies with interior finishing requirements for fire protection: little smoke formation, no softening and no flaming droplets. Laminate is a coating material and is used for manufacturing composite elements. Classification in a building material class depends on the support material used.

Water

No substances of content that could be hazardous to water are washed out. All leachable substances are significantly below legal thresholds. Laminates are not resistant against continuous exposure to water (standing water).

Mechanical destruction

Mechanical destruction does not lead to the release of hazardous substances, there is no environmental impact. The fracture pattern of laminates indicates brittle characteristics. The fracture edges are sharp so that wearing protective gloves is essential.

2.15 Re-use phase

Since laminates are usually used as composite materials, reuse is not possible as a rule.

Reclamation for energy generation (in approved facilities):
Due to the high heating value of approximately 15-16 MJ/kg, reclamation for the generation of process energy and electricity (cogeneration plants) is possible.

2.16 Disposal

Energetic recovery or disposal (/waste key according to European Waste Catalogue/: 17 02 01/03/).

Packaging: Transport packaging can be recycled in the case of separate collection. In some cases, external disposal can be arranged with the manufacturer.

2.17 Further information

Extensive information and processing recommendations are available under www.egger.com/laminates.

3. LCA: Calculation rules

3.1 Declared Unit

The declared unit is one square meter laminate 0.8mm (1.08kg/m2).

Declared unit

Name	Value	Unit
Declared unit	1	m^2
Grammage	1.08	kg/m^2
Conversion factor to 1 kg	-	-

3.2 System boundary

Type of EPD: Cradle to plant gates – with options
The lifecycle analysis for the products under consideration encompasses the following segments of the lifecycle: “Product stage” and “Credits and charges beyond the limits of the product system”.
The systems therefore encompass the following stages according to /DIN EN 15804/:
Product stage (module A1-A3):
A1 Procurement and processing of raw materials as well as processing of secondary raw materials serving as inputs
A2 Transportation to the manufacturer
A3 Production
The product stages A4-A5, B1-B7, C1, C2, and C4 were not examined in this study.
Once the product has reached the *end-of-waste status*, it is assumed that the product, along with the support wood-based material, will be transferred to biomass incineration for the production of thermal energy and electricity. The resulting effects and credits are declared in module D.

3.3 Estimates and assumptions

The end-of-life system limit between waste disposal and module D is set where outputs such as secondary material or fuel reaches its *end-of-waste status* (/DIN EN 15804/, Section 6.4.3).

3.4 Cut-off criteria

All data from the operational data acquisition has been taken into account. Therefore material flows with a proportion of less than 1% of mass were also included in the assessment. It can therefore be assumed that the sum of disregarded processes does not exceed 5% of the impact categories. The cut-off rules according to /DIN EN 15804/ can therefore be assumed to be met.

3.5 Background data

All relevant background datasets were taken from the database of the /GaBi 6/ software (GABI 6 2013), which is not older than ten years. The data used have been collected subject to consistent time and methodology constraints.

3.6 Data quality

Data recording for the products investigated took place directly at the production site, and refers to the production processes of the financial year from 1.5.2007 to 30.04.2008, on the basis of the questionnaire devised by PE International. The manufacturer-specific data are older than 5 years. However, Fritz EGGER GmbH & Co OG Holzwerkstoffe has confirmed that the production process has not changed since then, and thus these data can be considered as realistic. The input and output data were provided by EGGER and reviewed for plausibility. It can therefore be assumed that the data are highly representative.

3.7 Period under review

The data is representative for the production processes between 01.05.2007 and 30.04.2008.

3.8 Allocation

Waste materials from production undergo energy recovery. Energy credits for the electricity and thermal energy produced in the biomass power plant at the end of the lifecycle 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 "DE: Thermische Energie aus Erdgas PE" (DE: Thermal Energy from Natural Gas PE); the credit for electricity is calculated based on the dataset "DE: Strom-Mix PE“ (DE: Electricity Mix PE) (GaBi 6 2013).
Since other laminates are produced in Gifhorn in addition to the laminates Flex, MED and Micro and the packaging information refers to the total production quantities, they were allocated according to mass and assigned to the laminates under review. The total laminate quantity was converted to the total mass of produced laminates. The laminates under review account for 82% of all laminates produced by the plant. As a result, 82 % of the packaging quantity was assigned to the laminates under review, which was in turn allocated to the individual laminates based on the quantity produced

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 calculated scenario includes the recycling of Egger laminates in a biomass power plant

End of life (C1-C4)

Name	Value	Unit
Energy recovery	1.08	kg

5. LCA: Results

The following tables show the results of the environmental impact assessment differentiated by CML environment categories, resource utilisation, output flows, and waste categories, scaled to the functional unit of 1 m².

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 BOUNDARYS
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement[1)]	Refurbishment[1)]	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 laminate (1.08 kg/m²)

Parameter	Unit	A1-A3	C3	D
Global warming potential	[kg CO_2-Eq.]	2.29E+0	1.70E+0	-1.18E+0
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	1.16E-9	2.33E-12	-2.00E-10
Acidification potential of land and water	[kg SO_2-Eq.]	8.49E-3	3.22E-3	-1.73E-3
Eutrophication potential	[kg $(PO_4)^{3-}$ Eq.]	1.47E-3	1.45E-4	-1.52E-4
Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen Eq.]	1.37E-3	1.42E-4	-1.96E-4
Abiotic depletion potential for non fossil resources	[kg Sb Eq.]	3.98E-6	4.14E-9	-6.49E-8
Abiotic depletion potential for fossil resources	[MJ]	6.19E+1	3.69E-1	-1.82E+1

RESULTS OF THE LCA - RESOURCE USE: 1 m² laminate (1.08 kg/m²)

Parameter	Unit	A1-A3	C3	D
Renewable primary energy as energy carrier	[MJ]	1.26E+1	1.09E-2	-6.43E-1
Renewable primary energy resources as material utilization	[MJ]	7.02E+0	0.00E+0	0.00E+0
Total use of renewable primary energy resources	[MJ]	1.96E+1	1.09E-2	-6.43E-1
Non renewable primary energy as energy carrier	[MJ]	5.50E+1	3.84E-1	-1.96E+1
Non renewable primary energy as material utilization	[MJ]	1.02E+1	0.00E+0	0.00E+0
Total use of non renewable primary energy resources	[MJ]	6.52E+1	3.84E-1	-1.96E+1
Use of secondary material	[kg]	0.00E+0	0.00E+0	0.00E+0
Use of renewable secondary fuels	[MJ]	1.28E-3	2.99E-4	-2.21E-4
Use of non renewable secondary fuels	[MJ]	1.34E-2	3.11E-3	-2.32E-3
Use of net fresh water	[m³]	1.45E-2	2.66E-4	-1.97E-3

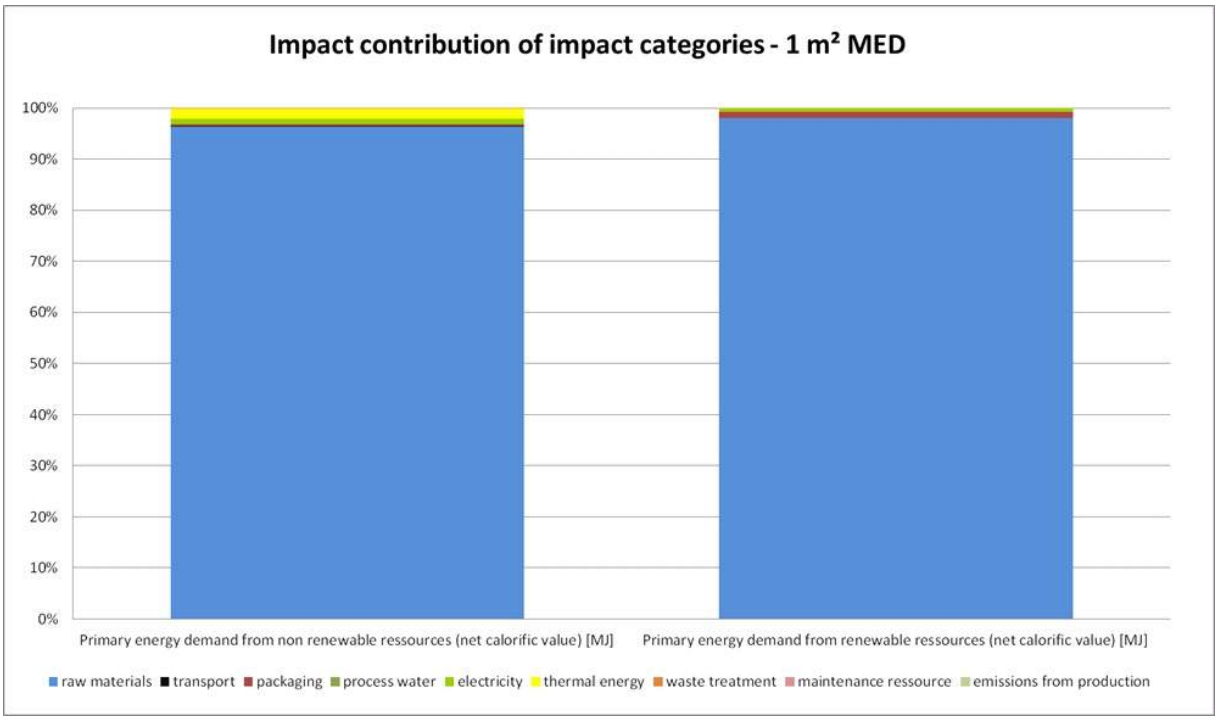
RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 m² laminate (1.08 kg/m²)

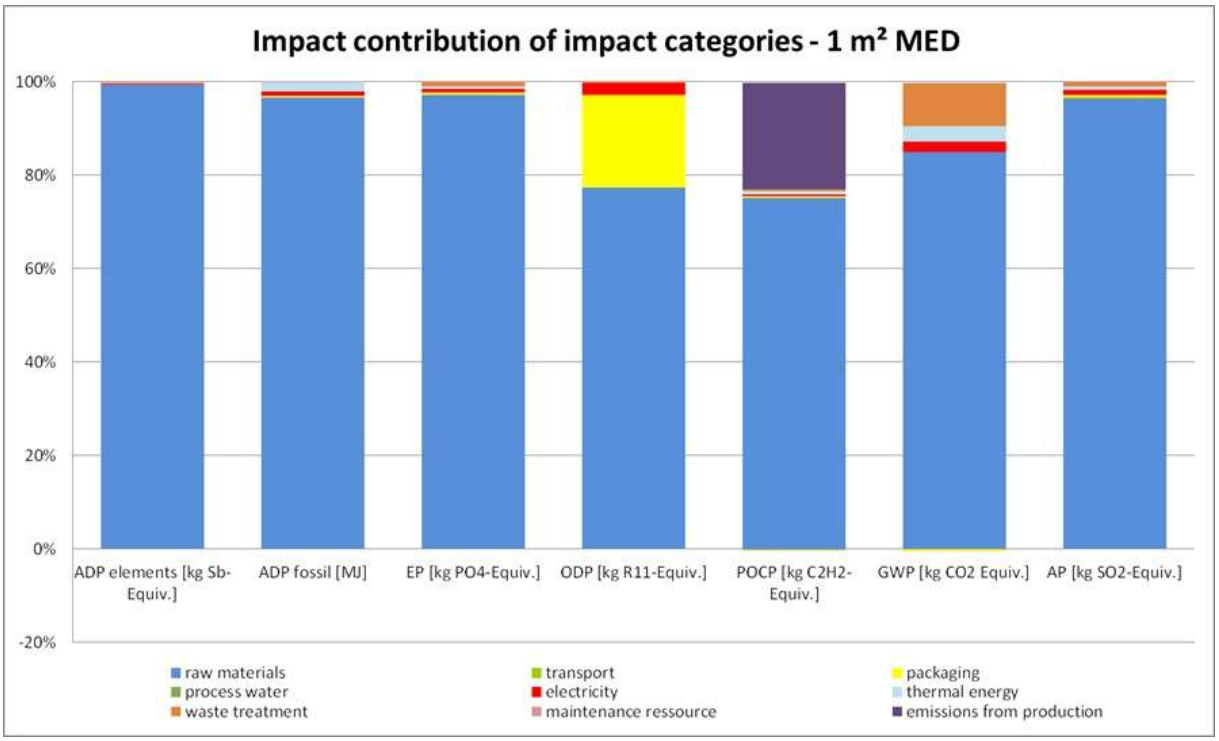
Parameter	Unit	A1-A3	C3	D
Hazardous waste disposed	[kg]	1.68E-2	1.16E-5	0.00E+0
Non hazardous waste disposed	[kg]	3.40E-2	2.51E-2	-3.62E-3
Radioactive waste disposed	[kg]	1.36E-3	6.24E-6	-5.66E-4
Components for re-use	[kg]	IND	IND	IND
Materials for recycling	[kg]	IND	IND	IND
Materials for energy recovery	[kg]	IND	IND	IND
Exported electrical energy	[MJ]	IND	1.44	IND
Exported thermal energy	[MJ]	IND	14.50	IND

6. LCA: Interpretation

The effect estimation results are only relative statements that do not make any statements about „end points“ of the effect categories, overshooting of limit values, safety margins or about risks.
The environmental performance assessment and estimated effects are based on the specifications of the European standard (CML, 2001-Nov 2010).
The relevant influences on the various impact categories and the use of primary energy are determined within the scope of a dominance analysis of the environmental performance assessment results for laminates in reference to the declared unit of 1 m².
The interpretation was carried out under consideration of the assumptions and restrictions of the EPD as well as the methodology and data. Very high data quality can generally be expected. All primary data from the operational data acquisition by EGGER GmbH in the year 2007-2008 were taken into account.
As a matter of principle, PE International conducts numerous different audits throughout the course of the entire project in order to ensure that the project is realised at a high level of quality. This encompasses an extensive review of the project-specific environmental performance assessment model as well as the underlying datasets that are used.
Modelling the environmental impact of Egger laminates is based on certain assumptions and limitations. Waste and waste water occurring during production are reintroduced in the process. Grinding dust and stamping waste resulting during production are transformed in waste incineration systems into thermal energy and electricity. A recycling quota of 100% of the

product is assumed for the *End of Life* (EoL). The model assumes that the product reaches incineration. Thus, the total quantity produced ends up in biomass incineration, where electricity credits such as EU-27 electricity mix are modelled (market share: Germany 38%, Austria 28%, France 9%, the rest is sold within Europe, up to 2% outside Europe). The transport distances used in the model are based on Egger records.
Results for the laminate are interpreted below.





Water consumption
The net fresh water consumption for 1 m² of Egger Laminate is at 1.45E-02 m³ water during the product stage (A1-A3). At stage D -1,97E-03 m³.
Most of the water consumption results from the net fresh water consumption during decor and soda kraft paper production (more than 90% of total consumption during production).
Primary energy renewable and non-renewable
The non-renewable demand for primary energy is influenced primarily by the supply of raw materials (96%). The decor and soda kraft paper production has the largest contribution, with a total of 94% of the non-renewable energy requirements arising during laminate manufacturing. The thermal energy requirements are the second largest driver, with 1.9% of the primary energy requirements from non-renewable resources. Renewable primary energy reaches 98% in the supply for raw materials.
Waste
The largest proportion of the waste that is produced consists of disposed, non-hazardous waste. Discarded radioactive waste results mainly from decor and soda kraft paper production.
Global warming potential
The global warming potential is dominated by the production of carbon dioxide. Through the use of wood, CO2 is bound in the renewable raw materials required for production.
86% of emissions relevant for the *global warming potential* (GWP) are due to the supply of raw materials (production of decor and soda kraft paper). Waste processing contributes 9% to the GWP. Due to the credit for bound carbon dioxide, part of the greenhouse gas emissions that are generated is substituted.
Ozone depletion potential
The ozone depletion potential is dominated primarily by the supply of raw materials (77%) and the packaging of laminates (20%). Through the substitution of energy that is used by EGGER laminates at the end of the lifecycle, the overall ozone depletion potential is reduced. Here, organic emissions containing halogen are responsible for the ozone depletion potential.
Acidification potential
The acidification potential is primarily due to the supply of raw materials (97%), with decor, kraft, and soda kraft paper production as the main driver. Here, sulphur dioxide, ammonia and nitrogen oxides have the largest share of the acidification potential.
Eutrophication potential
Similar to the acidification potential, the supply of raw materials is responsible for about 97% of the eutrophication potential of the laminate production. Decor paper, kraft paper, and soda kraft paper production is the main driver in this case as well.
Photochemical oxidant formation potential
The photochemical oxidant formation potential results mainly from emissions from the supply of raw materials (75%) and process emissions (23%). In the supply of raw materials, the production of decor and soda kraft papers are mainly responsible for the photochemical oxidant formation potential. Non-methane volatile organic compounds (NMVOCs) have the largest share of the photochemical oxidant creation potential.
A negative POCP value is presented for transportation. This is due to the NO emissions from transportation. NO is offset against POCP (see image).
Abiotic resource consumption (fossil)
The fossil abiotic resource consumption is above all created through the consumption of non-renewable fossil energy carriers such as for example natural gas, petroleum, and anthracite coal.
The consumption is mainly caused by the supply of raw materials (decor and soda kraft paper production) with a share of 97% and the thermal energy used with a share of 2%.
Abiotic resource consumption (elementary)
The elementary abiotic resource consumption is mainly caused by non-renewable material resources, such as rock salt and colemanite ore.
The consumption results mainly from the production of decor, soda kraft, and kraft paper.

7. Requisite evidence

7.1 Formaldehyde

Measurement authority: WESSLING GmbH, Altenberge

Test report, date: CAL13-091627-2/tep, 03.12.2013

Results: Emission chamber test of wood-based materials / products pursuant to DIN EN 717-1. The formaldehyde equalisation concentration pursuant to DIN EN 717-1 was reached after 7 days. According to the /Chemical Prohibition Ordinance/ Art. 1, Appendix, Paragraph 3, there is a threshold of 0.1 ppm specified for formaldehyde. The investigated board complies with the abovementioned threshold for what regards formaldehyde emissions, as well as with the requirements of formaldehyde class E1.

Measurement authority: Fraunhofer-Institut für Verfahrenstechnik und Verpackung (Fraunhofer Institute for Process Technology and Packaging), Freising

Test report, date: PA/4415/14, 23.6.2014

Results: Determining specific migration according to /EN 1186-5/ and evaluation according to the European Plastics Regulation/ (EU) No. 10/2011/. Egger Laminate complies with the threshold for the specific migration of formaldehyde.

7.2 Melamine

Measurement authority: Fraunhofer-Institut für Verfahrenstechnik und Verpackung (Fraunhofer Institute for Process Technology and Packaging), Freising

Test report, date: PA/4415/14, 23.6.2014

Results: Determining specific migration according to /EN 1186-5/ and evaluation according to the European Plastics Regulation/ (EU) No. 10/2011/. Egger Laminate complies with the threshold for the specific migration of 2,4,6triamino-1,3,2-triazine (melamine).

7.3 Total migration
Measurement authority: Fraunhofer-Institut für Verfahrenstechnik und Verpackung (Fraunhofer Institute for Process Technology and Packaging), Freising
Test report, date: PA/4263/14, 02.06.2014

Result: Determining total migration according to /EN 1186-5/ and evaluation according to the European Plastics Regulation/ (EU) No. 10/2011/. EGGER Laminate complies with the total migration value in contact with all aqueous and acidic foods.

7.4 Eluate Analysis
Measurement authority: Fraunhofer-Institut für Verfahrenstechnik und Verpackung (Fraunhofer Institute for Process Technology and Packaging), Freising

Test report, date: PA/4533/13, Part 2, 15.11.2013.

Results: The investigated laminate MED complies with the maximum extraction thresholds for arsenic, barium, cadmium, chromium, mercury, lead, antimony and selenium listed in Toys Standard /EN 71-3/.

7.5 Phenol
Measurement authority: WESSLING GmbH, Altenberge

Test report, date: CAL13-091627-2/tep, 03.12.2013

Results: Analysis for phenols pursuant to the /VDI Guideline 3485/. The tested product complies with the requirements of /RAL-UZ 76/ with regard to phenol.

8. References

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DIN EN ISO 14044:2006-10, Environmental Management – Life Cycle Assessment – Requirements and Guidelines (ISO 14044:2006); German and English Version EN ISO 14044:2006

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DIN EN 438-1:2016, High-Pressure Decorative Laminates (HPL) – Sheets based on thermosetting resins (usually called laminates) - Part 1: Introduction and general information.

DIN EN 438-2:2016, High-Pressure Decorative Laminates (HPL) – Sheets based on thermosetting resins (usually called laminates) - Part 2: Determination of properties.

DIN EN 438-3:2016, High-Pressure Decorative Laminates (HPL) – Sheets based on thermosetting resins (usually called laminates) - Part 3: Classification and specifications for laminates less than 2 mm thick intended for bonding to supporting substrates.

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

DIN CEN/TS 13130-23:2005, Materials and articles in contact with foodstuffs – Plastics substances subject to limitation.

DIN CEN/TS 13130-27:2005-05, Materials and articles in contact with foodstuffs – Plastics substances subject to limitation.

German Consumer Goods Ordinance (2005) and Article 2 EU Directive 10/2011/EC.

DIN EN 1186:2002, Materials and articles in contact with foodstuffs - Plastics.

DIN EN 71-3:20022013, Safety of toys - Part 3: Migration of certain elements.

DIN EN 717-1:2004, Wood-based materials – determination of the formaldehyde emissions – Part 1: Formaldehyde emissions according to the chamber test method.

Chemicals prohibition directive - Directive on prohibitions and restrictions on bringing hazardous substances, preparations and products into circulation according to the Chemicals Act.

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