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)
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Valid to	13.07.2020

EGGER Laminate Flammex

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 Flammex
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-20150066-IBA1-EN	**Declared product / Declared unit** One square meter of EGGER Laminate Flammex with a nominal thickness of 0.8 mm.
This Declaration is based on the Product Category Rules: Laminates, 07.2014 (PCR tested and approved by the SVR)	**Scope:** This document refers to the laminate Flammex produced by EGGER Kunststoffe GmbH & Co.KG (a subsidiary of Fritz EGGER GmbH & Co. OG) in the Gifhorn plant (Germany). This document is translated from the German Environmental Product Declaration into English. It is based on the German original version EPD-EGG-20150066-IBA1-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.
Issue date 14.07.2015	**Verification** The CEN Norm /EN 15804/ serves as the core PCR Independent verification of the declaration according to /ISO 14025/ ☐ internally ☒ externally
Valid to 13.07.2020	
Prof. Dr.-Ing. Horst J. Bossenmayer (President of Institut Bauen und Umwelt e.V.)	
Dr. Burkhart Lehmann (Managing Director IBU)	Manfred Russ (Independent verifier appointed by SVR)

2. Product

2.1 Product description

The EGGER laminates Flammex 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 quality Flammex can be classified according to the standard /EN 438:2016/ as laminate type **F** –Flame-retardant. The laminate Flammex complies in the case of fire with the special requirements of building material class B1, according to /DIN 4102-1: 1998-05/ or the French fire behaviour category M1 according to /NF P 92-501/. The laminate structure, the resin and paper quality, the surface texture, the 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 only serve as lamination materials. EGGER laminates are only suitable for indoor applications. The laminate quality Flammex is used primarily for laminating doors, partition walls, and where flame-retardant elements are required.

2.3 Technical Data

EGGER laminate Flammex is tested according to the testing procedure described in /EN438-2:2016/ and complies with the requirements stipulated in /EN 438-3:2016/. The technical sheet "EGGER Laminate Flammex" contains detailed information concerning quality features and product characteristics. www.egger.com/laminates

Laminate Flammex HGF

Name	Value	Unit
Density	≥ 1350	kg/m³
Resistance to abrasion * according to /EN 438-2/	≥ 150	U
Impact resistance (impact small ball) according to /EN 438-2/	≥ 20	Newton
Resistance to scratches (smooth finishes) according to /EN 438-2/	2	Degree
Resistance to scratches (textured finishes) according to /EN 438-2/	3	Degree

Lightfastness according to /EN 438-2/	4 - 5	Greyscale
Dimensional deviation Width tolerance	+10/-0	mm
Dimensional deviation Thickness tolerance	± 0,10	mm

* Initial point IP
The mass per unit area is calculated using the following formula:
Mass per unit [kg/m²] = raw density 1350 [kg/m³] x laminate thickness [m]

2.4 Placing on the market / Application rules

The product complies with the standard 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; German version /EN 438-3:2016/. Relevant national regulations apply to use.

2.5 Delivery status

The EGGER laminates Flammex are delivered as dimensioned or rolled goods depending on customer requirements and the laminate thickness.

Delivery format - sheet:

- Min. length: 800 mm
- Max. length: 5,600 mm
- Max. width: 1,310 mm
- Nominal thickness: 0.60 and 0.80 mm

Delivery format - roll:

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

2.6 Base materials / Ancillary materials

Name	Value	Unit
Paper percentage	62	%
Resin percentage	37	%
Additive	1	%

EGGER laminates Flammex 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 Laminates). 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 in line with the international environmental standard /ISO 14001/. The management system includes the continuous improvement of the ecobalance, the continuous reduction of environmental crises, 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 are well below the /OEL/ (occupational exposure limits) according to the /Ordinance on Hazardous Substances/ (Germany) in all areas of the plant.

Air: The exhaust air that is created in relation to the product is purified according to the legislative regulations. Emissions are significantly below the /TA Air/ (Technical Guideline for Keeping Air Clean).
Water/Soil: There is no impact on water or soil. Waste water from the production process is cleaned internally and 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 laminating classical wood-based materials, such as chipboard 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. Panel saws or bench circular saws are generally used to cut the worktops to size. Breathing protection should be worn when processing laminates without a dust / chip extraction system.
In principle, all persons transporting and / or handling laminates should wear personal protective equipment such as gloves, safety footwear and suitable work clothing.
Extensive information and processing recommendations are available under www.egger.com/laminates.

2.10 Packaging

The laminates are packaged and delivered as formatted or rolled goods on non-returnable or returnable wood palettes. Other packaging material includes: Wood-based materials, PE film, and PET packaging strips. Wood-based materials and plastic components may be reused thermally after use.

2.11 Condition of use

Ingredients in utilisation state:

The component materials of Flammex laminate comply in terms of their proportions to those of the basic material composition described in no. 2.6 "Raw materials/Auxiliary 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
The laminate quality Flammex can be classified according to the standard /EN 438:2016/ as laminate type **F** –Flame-retardant. The laminate Flammex complies in the case of fire with the special requirements of building material class B1, according to /DIN 4102-1: 1998-05/ or the French fire behaviour category M1 according to /NF P 92-501/. The laminate is considered building material and is used for laminated composite boards. Flame-retardant glues, such as resorcinol resin glues, must be used for glueing.

Fire protection

Name	Value
Building material class /DIN 4102-1: 1998-05/	B1
Building material class /NF P 92-501/	M1

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
No hazardous substances are released during mechanical destruction, there is no negative impact on the environment. 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 14-15 MJ/kg, reclamation for the generation of process energy and electricity (cogeneration plants) is possible.

2.16 Disposal

Energetic utilization or disposal (waste code according to /European Waste Catalogue/: 170201/03).

Packaging: Transport packaging can be collected separately and recycled appropriately. 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 Flammex laminate 0.8 mm (1.080 kg/m2).

Declared Unit

Name	Value	Unit
Declared unit	1	m^2
Grammage	1.08	kg/m^2
Conversion factor to 1 kg	0.926	-

3.2 System boundary

The present study represents a cradle-to-gate approach with options. Module A1-A3, Module C4, and Module D are considered. The system thus includes raw material procurement, transport, manufacturing, and the energetic utilisation of the product.
The data collection reference year is 2013 in the Gifhorn, Germany plant.
The following life cycle phases are taken into account:
- product stage
- disposal stage
- credits and charges outside the system limits

The EPD system limits follow the modular approach of /EN 15804/.

3.3 Estimates and assumptions

Waste and wastewater occurring during production are returned to the process.
Waste occurring during production are converted into thermal energy and electricity with the help of waste incinerators. A product reutilisation quota of 100% is assumed for the end-of-life (EoL).
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).
Relevant GaBi data sets are used for raw materials used in production.
If no exactly matching data sets were available, the raw materials were evaluated as closely as possible.

It is assumed that laminates are entirely incinerated at the end of their life cycle.
Transport distances used in the model are based on EGGER records.

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 percent of the 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/ (GABI 6 2013) 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 at the production site for the 2013 business year and refer to the production processes of the year 2013 based on a questionnaire prepared by PE International, the consulting company. The input and output data were provided by EGGER and reviewed for plausibility. It can therefore be assumed that the data are highly representative.
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. Naturally, this encompasses an extensive review of the project-specific environmental performance assessment model as well as the underlying datasets that are used.
Very high data quality can generally be expected.

3.7 Period under review

The data is representative for the production processes between 01.01.2013 and 31.12.2013.

3.8 Allocation

Residual materials occurring during production are subjected to energetic reutilisation. Energy credits for the electricity and thermal energy produced in the incineration 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 "EU-27: Thermal energy from natural gas PE"; the credit for electricity is calculated based on the dataset "EU-27:
Current Mix PE" (GaBi software)
Since other laminates are produced in Gifhorn in addition to the laminates Flammex and the packaging information refers to the total production quantity, these were allocated according to surface and assigned to the laminates under review. As such, the quantity of produced Flammex was converted to the entire quantity of produced laminates.
The values of thermal and electrical energy as well as auxiliary materials are based accordingly during data collection on the product to be declared. This division is done by surface and was performed by Fritz Egger GmbH & Co. OG.

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 complete reutilisation of EGGER laminates in a waste incineration plant.

5. LCA: Results

The following tables show the results of the environmental impact analysis, differentiated by CML environmental categories, resource use, output flows, and waste categories, scaled for the functional unit of 1 m² laminate.

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	MND	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m² Schichtstoff Flammex (1.080 kg/m²)

Parameter	Unit	A1-A3	C4	D
Global warming potential	[kg CO_2-Eq.]	3.69E+0	2.07E+0	-5.42E-1
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	3.13E-10	7.23E-12	-1.87E-10
Acidification potential of land and water	[kg SO_2-Eq.]	2.09E-2	1.93E-3	-1.45E-3
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	3.56E-3	4.93E-4	-9.83E-5
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	2.02E-3	1.19E-4	-1.19E-4
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	3.24E-6	2.24E-8	-5.51E-8
Abiotic depletion potential for fossil resources	[MJ]	7.67E+1	8.42E-1	-7.58E+0

RESULTS OF THE LCA - RESOURCE USE: 1 m² Schichtstoff Flammex (1.080 kg/m²)

Parameter	Unit	A1-A3	C4	D
Renewable primary energy as energy carrier	[MJ]	4.54E+1	4.84E-2	-9.45E-1
Renewable primary energy resources as material utilization	[MJ]	5.47E+0	0.00E+0	0.00E+0
Total use of renewable primary energy resources	[MJ]	5.09E+1	4.84E-2	-9.45E-1
Non-renewable primary energy as energy carrier	[MJ]	7.20E+1	9.28E-1	-9.27E+0
Non-renewable primary energy as material utilization	[MJ]	9.03E+0	0.00E+0	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	8.10E+1	9.28E-1	-9.27E+0
Use of secondary material	[kg]	0.00E+0	0.00E+0	0.00E+0
Use of renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0
Use of non-renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0
Use of net fresh water	[m³]	2.49E+0	5.65E-2	-8.48E-1

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 m² Schichtstoff Flammex (1.080 kg/m²)

Parameter	Unit	A1-A3	C4	D
Hazardous waste disposed	[kg]	2.61E-3	4.74E-5	-2.69E-6
Non-hazardous waste disposed	[kg]	3.17E-1	4.32E-3	-2.79E-3
Radioactive waste disposed	[kg]	1.74E-3	3.43E-5	-6.72E-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	1.86E+0	IND
Exported thermal energy	[MJ]	IND	4.31E+0	IND

6. LCA: Interpretation

The environmental life cycle assessment and the effect estimate are based on the specifications of the European standard /CML, 2001-2013/.

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 (10.76 square feet).

The interpretation was carried out under consideration of the assumptions and restrictions of the EPD as well as the methodology and data.

The results for the manufacturing of the Flammex laminate (Module A1-A3) are interpreted below.

The abiotic consumption of elementary resources (ADPE) is mainly dominated by raw material supply (98 %). 94 % of the abiotic consumption of fossil resources (ADP fossil) is based on raw material supply.

The eutrophication potential (EP) is 94%, the photochemical oxidants potential is 94%, the global warming potential (GWP) is 79%, and the acidification potential is 95% of the raw material supply.

Raw material supply clearly outweighs all other provision categories. Only in the case of the global warming potential (GWP), waste incineration also plays an important role, with 12%. Process emissions also have a noticeable effect in the case of the photochemical oxidants potential.

93% of the primary energy consumption of non-renewable fuels is due to raw material supply, as well

as the pre-chains of raw materials.
The primary consumption of renewable fuels is also due to raw materials supply - to a degree of 98%. Paper is key among raw materials. However, in the categories abiotic resource consumption (ADPE) and primary energy needs from fossil fuels, resins and hardeners have a somewhat greater impact than papers.

Paper plays a dominant role within raw materials supply. However, the adhesive system also has a great impact in the categories ADP fossil (52%) and GWP (46%).

Module C4 represents the effect of laminate incineration in a waste incineration plant. The GWP value also includes the released biogenic CO2, which was bound in the paper.

7. Requisite evidence

7.1 Formaldehyde
Measurement authority: WESSLING GmbH, Altenberge

Test report, date: CAL13-091621-3/tec, 17.12.2013

Results: Emission chamber test of wood-based materials / products pursuant to /EN 717-1/. The formaldehyde equalisation concentration pursuant to /EN 717-1/ was reached after 13 days. According to the /Regulation of Chemical Interdiction/ (ChemVerbotsV) Art. 1, Paragraph 3, there is a formaldehyde threshold of 0.1 ppm. The investigated board complies with the the above threshold with regard to formaldehyde emissions, as well as with formaldehyde class E1 requirements.

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

Test report, date: PA/4263/14, 2.6.2014

Results: Determining specific migration according to /EN 1186-5/ and assessment according to the European Plastics Regulation /(EU) No. 10/2011/. The EGGER laminate Flammex complies with the formaldehyde specific migration threshold.

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 assessment according to the /European Plastics Regulation /(EU) No. 10/2011/. The EGGER laminate Flammex complies with the 2,4,6-triamino-1,3,2-triazine specific migration threshold (migration).

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 assessment according to the European Plastics Regulation /(EU) Nr. 10/2011/. The EGGER laminate Flammex complies with the total migration threshold 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 Flammex laminate complies with the maximum extraction thresholds for arsenic, barium, cadmium, chromium, mercury, lead, antimony and selenium stipulated by the Toy Standard /EN 71-3/.

7.5 Phenol
Measurement authority: WESSLING GmbH, Altenberge

Test report, date: CAL14-019117-1/akn, 24.02.2014

Result: Analysis for phenols pursuant to the VDI Guideline 3485. The tested product meets the requirements of RAL-UZ 76, section 3.4.

8. References

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

General principles
for the EPD range of Institut Bauen und Umwelt e.V. (IBU), 2013/04
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

Waste catalogue on the basis of the European Waste Catalogue Version: 2002 -Report Years 2012**.**

CML 2001- April 2013: Institute of Environmental Sciences, Leiden University, The Netherlands: Handbook on impact categories "CML 2001 ", http://www.leidenuniv.nl/cml/ssp/projects/lca2/index.html

DIN 4102-1: 1998-05**,** Reaction to fire of building materials and components – Part 1: Building materials; Terminology, requirements and tests

DIN EN ISO 14040: 2006-10, Environmental Management – Life Cycle Assessment – Principles and Framework (ISO 14040:2006); German and English Version

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

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 438-9: 2010+A1, High-Pressure Decorative Laminates (HPL) – Sheets based on thermosetting resins (usually called laminates) - Part 9: Classification and specifications for laminates with alternative core structure.

DIN EN ISO 14001:2015, Environmental Management Systems - Requirements with guidance for use.

Ordinance on protection against hazardous substances: December 2010 (Ordinance on Hazardous Substances - GefStoffV)

OEL (occupational exposure limits): January 2006, OEL according to the Technical Rules for Hazardous Substances 900 (TRGS 900).

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

EN 71-3: 2013, Safety of toys - Part 3: Migration of specific elements.

NF P92-501: Fire safety - Buildings - Reaction to fire tests - Test by radiation applicable to rigid materials or rendered as such (laminated materials) of any thickness and flexible materials thicker than 5 mm

VDI Guideline 3485: Measuring gaseous emissions; Measuring phenols; p-nitroaniline procedure.

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

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

RAL-UZ 76:2011, Low-emission wood-based boards.

Regulation (EU) No. 10/2011, Regulation on plastic materials and articles intended to come into contact with food.

GaBi Software
GaBi 6. Integrated assessment software and database. LBP, Stuttgart University and PE International, 2013.

GaBi documentation
GaBi 6: Documentation of the GaBi 6 datasets of the integrated assessment database. LBP, Stuttgart University and PE International, 2013.

Product category rules, Part A: Calculation rules for the ecological balancing and requirements towards the background report. 2013-04.

Product category rules, Part B:
Requirements for EPD laminates, Version 1.5, Institut Bauen und Umwelt e.V., www.bau-umwelt.com, 2013

Technical Guideline for Keeping air Clean(TA Air), First General Administrative Provision on the Federal Pollution Control Act 2002

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