ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804

Owner of the Declaration	FEICA - Association of the European Adhesive and Sealant Industry
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-FEI-20160086-IBG1-EN
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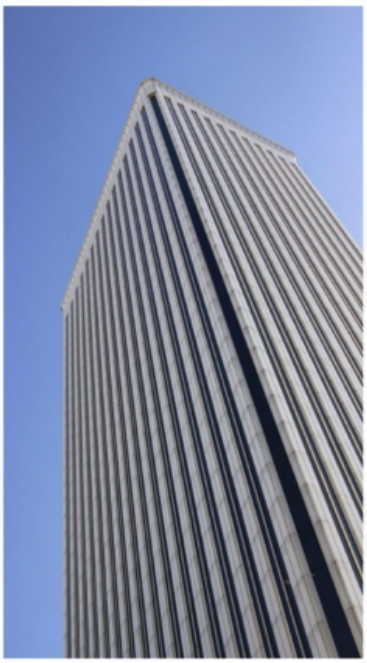
Dispersion-based products, solvent-free

FEICA - Association of the European Adhesive and Sealant Industry

Institut Bauen und Umwelt e.V.

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

ECO PLATFORM EPD EN 15804 VERIFIED



1. General Information

FEICA - Association of the European Adhesive and Sealant Industry

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

Declaration number
EPD-FEI-20160086-IBG1-EN

This Declaration is based on the Product Category Rules:
Coatings with organic binders, 07.2014
(PCR tested and approved by the SVR)

Issue date
29.08.2016

Valid to
28.08.2022

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

Dr. Burkhart Lehmann
(Managing Director IBU)

Dispersion-based products, solvent-free

Owner of the Declaration
FEICA - Association of the European Adhesive and Sealant Industry
Avenue E. van Nieuwenhuyse 4
1160 Brussels
Belgium

Declared product / Declared unit
1 kg / 1 kg; density 1,000 - 1,500 kg/m³

Scope:
This validated Declaration entitles the holder to bear the symbol of the Institut Bauen und Umwelt e.V. It exclusively applies for products produced in Europe and for a period of five years from the date of issue. This EPD may be used by FEICA members and their members provided it has been proven that the respective product can be represented by this EPD. For this purpose a guideline is available at the FEICA secretariat. The members of FEICA are listed on its website. 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

Mr Olivier Muller
(Independent verifier appointed by SVR)

2. Product

2.1 Product description

Solvent-free, dispersion-based products comprise organic binding agents based on synthetic and/or natural resins, mineral fillers such as chalk as well as water and smaller volumes of auxiliaries (thickening agents, defoaming agents, surface-active agents, preservatives etc.). They dry physically through evaporation of the water contained therein.
They comply with manifold, often specific, tasks in the construction, furnishing and repair of buildings. Using dispersion-based products decisively improves the fitness for use of structures and extends their life expectancy.
The product displaying the highest environmental impacts within the class of dispersion-based products considered was used as a representative product for calculating the Life Cycle Assessment results (worst case-approach).

2.2 Application

Dispersion-based products are used for the following applications:
Module 1: *Dispersion adhesives, fixatives, pre-coatings and primers for floor coverings and parquet flooring*
Adhesives for, e.g.
- tufted carpets with various backing
- woven textile coverings, fibre-bonded and natural-fibre coverings
- resilient coverings (PVC, rubber)
- linoleum
- insulating bases and underlays
- parquet, laminate and wood blocks

on surfaces ready for laying. The products are suitable for normal wear in residential and commercial areas, also on heated floor constructions.
Module 2: *Dispersion-based tile adhesive*
Products for bonding ceramic tiles and paving as well as natural stone for internal and external installations on walls, floors and ceilings
Module 3: *Dispersion-based adhesives, coatings and sealants*
As structural adhesives, coatings and sealants:
· structural and repair adhesives
· dispersion filler compounds
· joint sealants

Module 4: *Dispersion-based products for waterproofing of buildings*

Module 5: *Dispersion-based primers and bonding agents for concrete and floor screeds*
Module 6: *Dispersion-based products for surface protection of concrete*
To increase the durability of concrete and reinforced steel structures as well as for new concrete and for maintenance and repair work (for areas without vehicle traffic)
Module 7: *Dispersion-based primers, barrier coatings, varnishes and glazes for coating of buildings, structural elements and components for decorative, functional or protective purposes*

2.3 Technical Data

Module 1: *Dispersion adhesives, fixatives, pre-coatings and primers for floor coverings and parquet flooring*
Dispersion adhesives for floor coverings have to comply with the requirements of the /EN 14259:2003/. Fixatives do not usually comply with these requirements; their strengths are lower in accordance with their specifications. The performance characteristics of pre-coatings and primers are subject to the manufacturer's technical documentation / declaration of performance.
Dispersion adhesives for parquet: The test procedures and requirements of the /EN 14293:2006/ have to be fullfilled.
Module 2: *Dispersion-based tile adhesive*
The minimum requirements in accordance with /EN 12004:2012/ must be maintained. These are:
- Shear adhesion strength after dry storage (/EN 1324:2007/)
- Shear adhesion strength after heat ageing (/EN 1324:2007/)
- Open time: tensile adhesion strength (/EN 1346:2007/)

Other performance characteristics in accordance with the manufacturer's technical documentation / declaration of performance
Module 3: *Dispersion-based adhesives, coatings and sealants*
Performance characteristics in accordance with the manufacturer's technical documentation / declaration of performance
Module 4: *Dispersion-based products for waterproofing of buildings*
The minimum requirements of the /ETAG 022:2007/ must be maintained.
The performance characteristics must be indicated in accordance with the European Technical Assessment (ETA, no.).
Module 5: *Dispersion-based primers and bonding agents for concrete and floor screeds*
Performance characteristics in accordance with the manufacturer's technical documentation / declaration of performance
Module 6: *Dispersion-based products for surface protection of concrete*
Dispersion-based products for surface protection systems of concrete comply with the following requirements (characteristics for all intended uses in accordance with /EN 1504-2:2005/, Tables 1 and 5):
- Permeability to CO2 (/EN 1062-6:2002/)
- Water vapour permeability (/EN ISO 7783-1/-2:2012/)
- Capillary absorption and permeability to water (/EN 1062-3:2008/)
- Measurement of bond strength by pull-off (/EN 1542:1999/)

Other performance characteristics in accordance with the manufacturer's technical documentation / declaration of performance
Module 7: *Dispersion-based primers, barrier coatings, varnishes and glazes for coating of buildings, structural elements and components for decorative, functional or protective purposes*
The requirements of the /Decopaint Directive 2004/42/EC/ must be maintained
- for unpigmented primers
- for pigmented dispersion varnishes and dispersion primers in Decopaint product group d
- for water-soluble glazes in Decopaint product groups e or f
- for barrier primers in Decopaint product group g
- for single-component special varnishes in Decopaint product group i,

all of which are water-based.
Performance characteristics in accordance with the manufacturer's technical documentation / declaration of performance.

2.4 Placing on the market / Application rules

For the placing on the market in the EU/EFTA (with the exception of Switzerland) products falling under the Regulation (EU) No 305/2011 need a Declaration of Performance taking into consideration either the relevant harmonised European standard or the European Technical Assessment as cited in chapter 2.3 and the CE-marking.
For the application and use of the products the respective national provisions apply.

2.5 Delivery status

Liquid or pasty in containers made of plastic or metal. Typical container sizes contain 1 to 30 kg, usually 10 to 20 kg of product on pallets. For larger applications, vats with approx. volumes of 200 kg (litres) or IBCs (intermediate bulk containers) with a capacity in excess of 1 tonne (m^3) are also used.
A plastic container was modelled for the Life Cycle Assessment.

2.6 Base materials / Ancillary materials

Dispersion-based products usually comprise at least one synthetic resin dispersion, natural or synthetic resins dispersed in water, mineral fillers (e.g. chalk) and/or pigments. Auxiliaries such as thickening agents, defoaming agents, surface-active and dispersing agents as well as preservatives are used to fine-tune the product features.
On average, the products covered by this EPD contain the following range of base materials and auxiliaries (% by mass):
- Synthetic resin dispersion (solids portion): 5 - 65
- Natural resins, natural resin derivatives: 0 - 25
- Mineral fillers: 0 - 60
- Pigments: 0 - 35
- Water: 15 - 95
- Auxiliaries: 1 - 5
- Thickening agents: < 3
- Dispersing agents / Emulsifying agents: < 2
- Wetting agent: 2
- Other: 0 - 2

The biocidal products used contain agents which can be marketed in accordance with Biocidal Products Regulation (EU) No 528/2012.
In individual cases, it is possible that substances on the list of particularly harmful substances for inclusion in Annex XIV of the /REACH/ regulation are contained in concentrations of exceeding 0.1%. If this is the case,

this information can be found on the respective safety data sheet.

2.7 Manufacture

Dispersion-based products are usually mixed discontinuously in batch mode, i.e. in individual batches or series of individual batches, and filled into the delivery containers. The quality of the products and safe handling thereof is ensured by the corresponding regulations such as /ISO 9001:2008-12/ and the provisions outlined in the relevant regulations such as the Industrial Safety Regulation and Federal Pollution Control Act.

2.8 Environment and health during manufacturing

As a general rule, no particular environmental or health protection measures other than those specified by law are necessary.

2.9 Product processing/Installation

Dispersion-based products are processed on site using suitable tools, usually by hand. The products are applied by trowelling/knife-coating, painting, rolling or spraying, whereby health and safety measures (gloves and goggles, ventilation) are to be taken and consistently adhered to in accordance with the information on the safety data sheet and conditions on site.
Depending on the application and product specifications, between 50 and 1,500 g/m² are applied.

2.10 Packaging

A detailed description of packaging is provided in section 2.5. Empty containers and clean foils can be recycled.

2.11 Condition of use

During the use phase dispersion-based products are existent as hardened film.
They are long-lasting products which protect our buildings in the form of primers, coatings or sealants as well as making an essential contribution towards their appearance, function and sustainability.

2.12 Environment and health during use

Option 1 – Products for applications outside indoor areas with permanent stays by people
No risks are known for water, air and soil if the products are used as designated.
Option 2 – Products for applications inside indoor areas with permanent stays by people
When used in indoor areas with permanent stays by people, evidence of the emission performance of construction products in contact with indoor air must be submitted according to national requirements. No further influences on the environment and health by emanating substances are known.

2.13 Reference service life

Dispersion-based products fulfil manifold, often specific, tasks in the construction, refurbishment or renovation of building structures. They decisively improve the usability of building structures and significantly extend their original service lives.

The anticipated reference service life depends on the specific installation situation and the exposure associated with the product. It can be influenced by weather factors as well as by mechanical or chemical loads.

2.14 Extraordinary effects

Fire
In terms of their application volumes, dispersion-bound products usually have no or only a subordinate influence on the fire characteristics of the structure in which they have been used.

Water
Dispersion-based products are only water-resistant to a certain degree and their strength can deteriorate when exposed to water for longer periods of time, detaching from the surface in a worst-case scenario. The primary components of dispersion-based products are not hazardous to water or only slightly hazardous to water. Owing to the overall low volumes of dispersion-based products used on buildings, no relevant contribution towards environmental damage can be anticipated by buildings featuring dispersion-based products in the event of extraordinary exposure to water.

Mechanical destruction
The mechanical destruction of dispersion-bound products does not lead to any decomposition products which are harmful for the environment or health.

2.15 Re-use phase

According to present knowledge, no known environmentally-hazardous effects in terms of disposal are to be generally anticipated through dismantling and recycling components to which hardened, dispersion-bound products adhere.

2.16 Disposal

The portion of a dispersion-based product applied at an other construction product is rather low. These low amounts do not play any role when the construction product is disposed. They do not interfere with the disposal/recycling of other components / building materials.
Hardened product residue mechanically removed from substrates must be disposed of as commercial / construction waste.
The following waste codes according to the European List of Waste (/2000/532/EC/) can apply: Hardened product residue:
08 01 12 waste paint and varnish other than those mentioned in 08 01 11
08 04 10 waste adhesives and sealants other than those mentioned in 08 04 09

2.17 Further information

More information is available in the manufacturer's product or safety data sheets and is available on the manufacturer's Web sites or on request. Valuable technical information is also available on the associations' Web sites.

3. LCA: Calculation rules

3.1 Declared Unit

This EPD refers to the declared unit of 1 kg dispersion-based product with a density of 1.000 - 1.500 kg/m³ in the mixing ratio required for processing the components in accordance the PCR part B for Coatings with organic binders.
Consumption per unit area of the products to be applied extensively can range between 50 - 1.500 g/m².
The results of the Life Cycle Assessment provided in this declaration have been calculated from the product with the highest environmental impact (worst-case scenario).

Declared unit

Name	Value	Unit
Conversion factor to 1 kg	1	-
Declared unit	1	kg

3.2 System boundary

Modules A1-A3, A4, A5 and D are taken into consideration in the LCA:

- A1 Production of preliminary products
- A2 Transport to plant
- A3 Production (incl. provision of energy, production of packaging as well as auxiliaries and consumables, waste treatment)
- A4 Transport to site
- A5 Installation (disposal of packaging & installation losses and emissions during installation)
- D Credits from incineration of packaging materials & installation losses

The declaration is therefore from "cradle to gate - with options".

3.3 Estimates and assumptions

Where no specific /GaBi/ processes were available, the individual constituent materials of the formulations were estimated based on information provided by the manufacturerer or literature sources.

3.4 Cut-off criteria

All raw materials submitted for the formulations and production data were taken into consideration.
The manufacture of machinery, plants and other infrastructure required for production of the products under review was not taken into consideration in the LCA.
Transport of packaging materials is also excluded.

3.5 Background data

Data from the /GaBi/ 6 database was used as background data. Where no background data was available, data gaps were complemented by manufacturer information and literature research.

3.6 Data quality

Representative products were selected for this EPD. The product displaying the highest environmental impacts in a group was selected for calculating the LCA results. The datasets are less than 5 years old. Data for production and packaging are based on details
provided by the manufacturer. The formulation used for evaluation refers to a specific product.

3.7 Period under review

Representative formulations were accepted by FEICA Ltd and collected in 2011.

3.8 Allocation

No allocations were applied for production. A multi-input allocation with a credit for electricity and thermal energy was used for incineration of production residues and packaging materials. The credits achieved through packaging disposal are declared in 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. In this case, 1 kg dispersion-based product was selected as the declared unit. Depending on the application, a corresponding conversion factor such as the specific weight per surface area must be taken into consideration.

4. LCA: Scenarios and additional technical information

The following technical information is a basis for the declared modules or can be used for developing specific scenarios in the context of a building assessment if modules are not declared (MND).

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	0.0016	l/100km
Transport distance	1000	km
Capacity utilisation (including empty runs)	85	%
Gross density of products transported	1000 - 1500	kg/m³
Capacity utilisation volume factor	1	-

Installation into the building (A5)

Name	Value	Unit
Material loss	0.01	kg
VOC in the air	0.001	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	X	X	MND	MND	MNR	MNR	MNR	MND	MND	MND	MND	MND	MND	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 kg dispersion-based product, solvent-free

Parameter	Unit	A1-A3	A4	A5	D
Global warming potential	[kg CO_2-Eq.]	9.92E-1	4.87E-2	1.60E-1	-6.90E-2
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.02E-10	2.24E-13	4.99E-13	-2.28E-11
Acidification potential of land and water	[kg SO_2-Eq.]	2.92E-3	1.20E-4	1.69E-5	-1.10E-4
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	3.55E-4	2.78E-5	3.47E-6	-1.11E-5
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	6.78E-4	-3.37E-5	3.66E-4	-1.16E-5
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	4.85E-7	3.25E-9	1.53E-9	-1.18E-8
Abiotic depletion potential for fossil resources	[MJ]	2.65E+1	6.71E-1	2.67E-2	-9.48E-1

RESULTS OF THE LCA - RESOURCE USE: 1 kg dispersion-based product, solvent-free

Parameter	Unit	A1-A3	A4	A5	D
Renewable primary energy as energy carrier	[MJ]	2.64E+0	IND	IND	IND
Renewable primary energy resources as material utilization	[MJ]	0.00E+0	IND	IND	IND
Total use of renewable primary energy resources	[MJ]	2.64E+0	3.82E-2	3.97E-3	-1.57E-1
Non-renewable primary energy as energy carrier	[MJ]	1.61E+1	IND	IND	IND
Non-renewable primary energy as material utilization	[MJ]	1.24E+1	IND	IND	IND
Total use of non-renewable primary energy resources	[MJ]	2.85E+1	6.74E-1	3.16E-2	-1.16E+0
Use of secondary material	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of renewable secondary fuels	[MJ]	0.00E+0	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	0.00E+0
Use of net fresh water	[m^3]	8.33E-3	9.56E-5	3.83E-4	-2.44E-4

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 kg dispersion-based product, solvent-free

Parameter	Unit	A1-A3	A4	A5	D
Hazardous waste disposed	[kg]	2.35E-8	5.09E-8	5.80E-11	-4.48E-10
Non-hazardous waste disposed	[kg]	1.14E-2	5.66E-5	1.45E-3	-4.13E-4
Radioactive waste disposed	[kg]	7.85E-4	9.63E-7	1.96E-6	-8.45E-5
Components for re-use	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for recycling	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for energy recovery	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported electrical energy	[MJ]	0.00E+0	0.00E+0	2.42E-1	0.00E+0
Exported thermal energy	[MJ]	0.00E+0	0.00E+0	5.58E-1	0.00E+0

6. LCA: Interpretation

The majority of life cycle energy consumption takes place during the production phase (A1-A3). Significant contributions to Primary Energy Demand – Non-renewable (PENRT) derive from the energy resources used in the production of raw materials. The largest contributor to Primary Energy Demand – Renewable (PERT) is the consumption of renewable energy resources required for the generation and supply of electricity. During manufacturing (A1-A3) relevant influence also arises due to the wooden pallets used as packaging that need solar energy for photosynthesis. It should be noted that Primary Energy Demand – Renewable (PERT) generally represents a small percentage of the production phase primary energy demand with the bulk of the demand coming from non-renewable energy resources.

Transportation to the construction site (A4) and the installation process (A5) make a minor contribution to almost all impacts. The only exception is the photochemical ozone creation potential (POCP) that is significantly influenced by the installation of the product due to emissions of volatile substances of maximum 0.1%. This leads to a contribution of the installation phase of up to 35% on the overall life cycle of the product. Emissions associated with the manufacturing of products (A3) only have a negligible influence on POCP.

In module A4, transport to construction site, values for POCP are negative due to emission profile modelled for the selected transportation process and of the characterisation method used in /CML 2001/ for the calculation of the POCP. Transportation processes are responsible for the emission of NO_x in the ground layer

atmosphere. NO in particular can have an ozone depleting effect that is reflected in /CML 2001/ by assigning a negative characterisation factor to this substance. However, although these negative values may appear unusual, it should be considered that POCP is only one of the analysed environmental impact categories. All other potential impacts would increase with greater transportation distances, showing that transportation is a process leading to net environmental burdens. Furthermore, even for POCP, transportation processes needed for supply of materials and product distribution only have limited counterbalance effects on the overall LCA results. Scrap burdens and energy credit from incineration of packaging material reported in module D are of little importance.
In general, CO_2 is the most important contributor to Global Warming Potential (GWP). For the Acidification Potential (AP), NO_x and SO_2 contribute to the largest share.

7. Requisite evidence

7.1 VOC

Special tests and evidence have not been carried out or provided within the framework of drawing up this Model EPD. Some member states require special documentation on VOC emissions into indoor air for specific areas of application. This documentation, as well as documentation for voluntary VOC labelling, has to be provided separately and is specific for products in question.

Evidence pertaining to VOC emissions shall show
- either an attestation of compliance with,
- or documentation of test data that are required in,

any of the existing regulations or in any of the existing voluntary labeling programs for low-emitting products, as far as these
(1) include limits for the parameters TVOC, TSVOC, carcinogens, formaldehyde, acetaldehyde, LCI limits for individual substances (including but not limited to the European list of harmonized LCIs), and the R value;
(2) base their test methods on /CEN/TS 16516/ (or /EN 16516/, after the on-going revision of /CEN/TS 16516/);
(3) perform testing and apply the limits after 28 days storage in a ventilated test chamber, under the conditions specified in /CEN/TS 16516/; some regulations and programs also have limits after 3 days, on top of the 28 days limits;
(4) express the test results as air concentrations in the European Reference Room, as specified in /CEN/TS 16516/.

Examples of such regulations are the Belgian /Royal Decree C-2014/24239/, or the German /AgBB/. Examples of such voluntary labeling programs are EMICODE, Blue Angel or Indoor Air Comfort.

Relevant test results shall be produced either by an /ISO 17025/ accredited commercial test lab, or by a qualified internal test lab of the manufacturer.
Examples for the applied limits after 28 days storage in a ventilated test chamber are:
- TVOC: 1000 µg/m³
- TSVOC: 100 µg/m³
- Each carcinogen: 1 µg/m³
- Formaldehyde: 100 µg/m³
- LCI: different per substance involved
- R value: 1 (meaning that, in total, 100% of the combined LCI values must not be exceeded).

Informative Annexes (2 tables):
The table shown below is an overview of the most relevant regulations and specifications as of April 2015, as regards requirements after 3 days storage in a ventilated test chamber.

	TVOC [µg/m³]	Sum of carcinogens. C1A,CA2 [µg/m³]	Formal-dehyde [µg/m³]	Acet-aldehyde [µg/m³]	Sum of Form- and Acet-aldehyde
German DIBt/AgBB regulation	10 000	10	-/-	-/-	-/-
draft Lithuanian regulation	10 000	10	-/-	-/-	-/-
EMICODE EC1	1 000	10	50	50	50 ppb
EMICODE EC1 *PLUS*	750	10	50	50	50 ppb

	TVOC [µg/m³]	TSVOC [µg/m³]	Each carcinogen C1A,CA2 [µg/m³]	Formaldehyde [µg/m³]	Acetaldehyde [µg/m³]	LCI	R value	Specials	Sum non-LCI & non-identified [µg/m³]
Belgian regulation	1000	100	1	100	200	Belgian list	1	Toluene 300 µg/m³	-/-
French regulations class A+	1000	-/-	-/-	10	200	-/-	-/-	List of 8 VOCs, 4 CMR	-/-
French regulations class A	1500	-/-	-/-	60	300	-/-	-/-	List of 8 VOCs, 4 CMR	-/-
French regulations class B	2000	-/-	-/-	120	400	-/-	-/-	List of 8 VOCs, 4 CMR	-/-
French regulations class C	>2000	-/-	-/-	>120	>400	-/-	-/-	List of 8 VOCs, 4 CMR	-/-
German DIBt/AgBB regulation	1000	100	1	100	1200	German AgBB list	1	-/-	100
draft Lithuanian regulation	1000	100	1	product type specific	-/-	Lithua-nian list	1	-/-	-/-
EMICODE EC1	100	50	1	(after 3 days)	(after 3 days)	-/-	-/-	-/-	-/-
EMICODE EC1 *PLUS*	60	40	1	(after 3 days)	(after 3 days)	German AgBB list	1	-/-	40
Finnish M1, sealants	20	-/-	1	10	-/-	-/-	-/-	Ammonia, odour	-/-
Finnish M1, adhesives	200 µg/m²h	-/-	5 µg/m²h	50 µg/m²h	-/-	-/-	-/-	Ammonia, odour	-/-

The table above provides an overview of the most relevant regulations and specifications as of April 2015, as regards requirements after 28 days storage in a ventilated test chamber. Some details may be missing in the table due to lack of space. Values given represent maximum values/limits.

7.2 Leaching:
Dispersion-based products in outdoor applications are not used in areas with contact to soil and groundwater. There are currently no European or national assessment criteria or emission scenarios in place for scenarios involving watered components.

7.3 Fire gas toxicity
The fire gases incurred by organic products contain hazardous substances but no particularly hazardous emissions. Testing toxicity of the fire gases makes sense particularly in the system configuration of the products and is therefore not carried out for individual coatings as the fire gases are essentially influenced by the type of substrate involved.

8. References

PCR 2013, Part A: 2013-04
Institut Bauen und Umwelt e.V., Berlin (pub.): Product Category Rule for Construction Products from the range of Environmental Product Declarations of Institute Bauen und Umwelt (IBU), Part A: Calculation rules for the Life Cycle Assessment and requirements on the Background Report
www.bau-umwelt.de

PCR 2013, Part B: 2013-07
Product Category Rules for Construction Products, Part B: Requirements on the EPD for coatings with organic binding agents

GaBi 6 2014:
Software and data base for comprehensive analysis. LBP, University of Stuttgart and PE International, 2014

GaBi 6 2014b:
Documentation of GaBi 6 data sets from the data base

for comprehensive analysis LBP, University of Stuttgart and PE International, 2014 http://documentation.gabi-software.com/

CEN/TS 14472:2003-10
Resilient, textile and laminate floor coverings - Design, preparation and installation – Part 1: General; Part 2: Textile floor coverings; Part 3: Laminate floor coverings; Part 4: Resilient floor coverings

EN 14259:2004-07
Adhesives for floor coverings – Requirements for mechanical and electrical performance

EN 14293:2006-10
Adhesives – Adhesives for bonding parquet to subfloor – Test methods and minimum requirements

EN 12004:2014-02
Adhesives for tiles – Requirements, evaluation of conformity, classification and designation

EN 1324:2014-08
Adhesives for tiles – Determination of shear adhesion strength of dispersion adhesives

EN 1346:2007-11
Adhesives for tiles – Determination of open time

EN ISO 9001:2009-12
Quality management systems – Requirements

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