ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	Vitrulan Textile Glass GmbH
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-VIT-20230430-CBC1-EN
Issue date	09.01.2024
Valid to	08.01.2029

Woven glass fibre wall covering

Vitrulan Textile Glass GmbH

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Vitrulan
Textile Glass

General Information

Vitrulan Textile Glass GmbH

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-VIT-20230430-CBC1-EN

This declaration is based on the product category rules:

Wall coverings, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

09.01.2024

Valid to

08.01.2029

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

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Woven glass fibre wall covering

Owner of the declaration

Vitrulan Textile Glass GmbH
Bernecker Straße 8
95509 Marktschorgast
Germany

Declared product / declared unit

1 m^2 of woven glass fibre wall covering with an average grammage of around 0.145 kg/m^2.

Scope:

This specific EPD document refers to woven glass fibre wall covering produced by Vitrulan Textile Glass GmbH. The production data was recorded in 2021. The production plant is located in Marktschorgast, Germany.

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.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR				
Independent verification of the declaration and data according to ISO 14025:2011				
	☐	internally	☒	externally

Vito D'Incognito,
(Independent verifier)

Product

Product description/Product definition

Woven glass fibre wall covering, manufactured by Vitrulan Textile Glass GmbH, is made of glass yarns and used for both, functional and decorative purposes. It is generally distinguished from wall paperings based on a paper substrate by a high-quality special glass woven fabric which is used as the substrate material. The glass fibre wall covering is a structured, patterned or practically smooth fabric comprising glass yarns arranged vertically and horizontally. Generally, it is glued on walls and ceilings and painted afterwards. It may include white pigments to reduce processing time on the construction site. It is particularly easy to handle: it does not shrink or stretch, is easy to cut and produces perfect seams. It reinforces walls, covers cracks, and prevents new cracks from forming.

During application, the wall or ceiling is pasted and then the strip of wall covering is hung on the prepared paste bed, or, alternatively, the wall covering comes with a water-activatable adhesive which is already applied to the wall covering's backing – this adhesive can be easily activated by water using the 'Aqua-Quick device' specially developed for this purpose. Vitrulan's Aqua Technology facilitates work and reduces processing times for the user.

Since woven glass fibre wall coverings are designed to reinforce walls and ceilings, they are bonded to the building's structure. This means that they are disposed of as construction waste. Waste arising from installation can generally be disposed of as household waste since glass fibre wall coverings are not classed as special waste. Our woven glass fibre wall covering is OEKO-TEX-certified and completely non-hazardous to health. Sustainable interior design and premium product quality are hallmarks of all our textile glass fibre wall coverings.

For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) *Regulation (EU) No. 305/2011 (CPR)* applies. The product needs a declaration of performance taking into consideration *EN 15102:2007+A1:2011* and the CE-marking. For application and use, the respective national provisions apply.

Application

Woven glass fibre wall coverings are used indoors on ceilings and walls in the following steps. More details are to be found in the technical data sheets.

1. PREPARATION: Substrates should be dry, clean, smooth and stable. Pretreat absorbent substrates with a suitable primer. Do not apply with room and surface temperatures below +8 °C. Use the same serial numbers when applying to adjacent areas. One drop = wall height plus 5–10 cm.
2. APPLYING ADHESIVE: (a) Without Aqua Technology, apply sufficient latex adhesive with a paint roller or airless spray gun evenly to the wall over a width of 1–2 sheets. Observe the adhesive manufacturer's application notes. This also applies for applications with a wall-papering device. (b) With Aqua Technology the wall covering comes with a water-activatable adhesive which is already applied to the wall covering's backing. This adhesive can be easily activated by water using the 'Aqua-Quick device'. At normal room temperature/climate (18 °C, 60 %) the drying time is 12–24 hours. When applicating under extreme climatic conditions, the duration can change significantly.
3. AVOIDING TEXTURAL DIFFERENCES: Never paste the wall covering upside down or inside out. Some products have a handy mark on the back of the wall covering which serves as a guide. These marks are spaced at approximately 1 m intervals from one length to the next. Butt-joining: Make sure that the edges butt up smoothly where one length joins another. Important: Make sure that the thread path in the weave of each subsequent length lines up with the previous one at eye level. With straight match: We weave an alignment guide into wallcoverings with large-format repeated patterns to make it easier to align them: a yellow thread which is visible on both sides of the covering. When applying each consecutive length, simply make sure that the yellow thread is perfectly aligned with the yellow thread in the previous length.
4. PRESSING ON AND TRIMMING: Use a (hard plastic) wallpaper spatula and press down firmly across the entire length, smoothing out any air bubbles. Carefully press (the) overlapping fabric into the corners and cut with a sharp knife.
5. PAINTING: Apply the paint evenly, once the wall covering has completely dried. Follow the paint manufacturer's instructions. The need for further coatings depends on the paint quality, degree of gloss, shade, expected stress, lighting situation and desired surface appearance. With raised fibres: Slight sanding between coatings is possible.

Technical Data

Main characteristics of our woven glass fibre wall covering are:

- Superb reaction to fire: B-s1, d0 according to *DIN EN 13501-1*
- Wall reinforcing and crack bridging
- Impact and perforation resistant
- Abrasion and scrub resistant (depending on the coating)
- Resistant to disinfectants and cleaning agents (depending on the coating)
- Non-toxic and food-safe: OEKO-TEX-certified
- Water vapour permeable
- Suitable for allergy sufferers
- In addition to the many technical benefits, our woven glass fibre wall coverings provide almost limitless scope for creativity when it comes to interior design

Constructional data

Name	Value	Unit
Fire behaviour according to DIN EN 13501-1	B-s1, d0	-
Release of formaldehyde max. < 120 mg/kg according to DIN EN 12149	passed	-
Migration of heavy metals (max.) and certain other elements to DIN EN 12149	passed	-
Vinyl chloride monomer (VCM) content max. < 0,2 mg/kg according to DIN EN 12149	passed	-
Sound absorption according to EN ISO 354, EN ISO 11654	NPD	-
Thermal resistance according to EN 12667, EN 12524	NPD	-

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to *EN 15102:2007+A1:2011*, Decorative wall coverings – Roll and panel form.

Base materials/Ancillary materials

Our woven glass fibre wall covering contains ca. 0.116 kg/m^2 glass yarns and ca. 0.029 kg/m^2 coating based on starch, polymeric materials and inorganic additives. It is produced in three main phases:

Glass fibre manufacture: The basic components of a glass batch are silica sand, limestone, kaolin, and boric acid. These components are fused at approx. 1250˚C. The molten glass flows by gravity through the nozzles of a bushing plate made of platinum alloy to form filaments. A surface coating called a 'size' is applied to the individual filaments before they are gathered into a strand. The size largely determines the processing characteristics of the glass fibre material. The glass filaments are directed across a picking roll which combines the individual filaments as glass fibre strands before winding them on a bobbin. These spools are then subjected to a drying process. The textile glass yarns are partially textured to give the fabric's structure more volume.

Warp beam manufacture and weaving fabrics: It involves attaching the textile glass yarns to fibre creels and combining as warp beams. In the weaving area, gripper needle and air-jet weaving looms generate textile glass fabric from the weft and warp materials. This is referred to as manufacturing fabric from glass yarns which are manufactured on weaving looms by means of crossing two thread systems.

Coating and dispatch: In the coating area, these textile glass fabrics are attributed a finishing treatment that completely coats the fabrics. The finish is normally applied using a special technique in which both sides of the unprocessed fabrics are impregnated and then dried. The finish determines essential product characteristics such as stability, warp thread bonding, cutting capability, flexibility, feel, and surface roughness. Basically, the finish primes the surface optimally for subsequent application and painting. The finish for our pre-pigmented glass fabrics contains high-quality white pigments – this makes painting works on the construction site highly economical and significantly reduces labour and material costs. In the packing area, the dried and coated fabrics are wound and shortened in line with customer specifications. In the packaging area, the picked rolls are packaged individually before being sent for dispatch.

According to the *REACH* regulation, these products are considered articles which do not fall under this regulation. With regard to *REACH*, we can confirm that all raw materials we use are registered and approved for use.

These products contain substances listed in the Substances of Very High Concern candidate list (date: 15 June 2023) exceeding 0.1 percentage by mass: No.

Reference service life

The reference service life according to *ISO 15686:1*, *-2, -7* and *-8* are not indicated. The product is applied on internal walls and ceilings. Since it is designed to reinforce walls and ceilings, it is bonded to the building's structure. If well maintained, there is no lifetime limitation. It creates the ideal substrate for decorative coatings and can be repainted over time and again without losing its performance.

LCA: Calculation rules

Declared Unit

The declared unit refers to 1 m^2 of woven glass fibre wall covering with an area weight of 0.145 kg/m².

Declared unit and mass reference

Name	Value	Unit
Declared unit	1	m^2
Grammage	0.145	kg/m^2
Layer thickness	0.0006	m

System boundary

Type of EPD according to *EN 15804*: "cradle to gate with options, modules C1–C4, and module D". The following modules are declared: A1–A3, C, D and additional modules: A4 + A5.

The following life cycle stages are considered:

Production - Modules A1-A3

The product stage includes:

- Raw material supply (A1): glass yarns and coating based on starch besides polymeric materials and inorganic additives.
- Transport to the manufacturer (A2)
- Manufacturing (A3), including provision of all materials, products and energy, as well as waste processing up to the end-of-waste state.

Construction Stage - Modules A4- A5

The construction process stage includes:

- Transport to the construction site (A4)
- Treatment of packaging material (A5) credits for potential avoided burdens due to energy substitution of electricity and thermal energy generation are declared in module D. Installation losses are also included in this module.

End-of-Life Stage - Modules C1-C4

- Mechanical dismantling is considered (C1)
- Transport to EoL (C2)
- Disposal (C4) - landfill of the glass fibre wall covering

Benefits and Loads beyond product system boundary

No credits were accounted from the EoL scenario(C4) in module D. The credits in D are solely accounting for the avoided burdens calculated by the inversion of electricity grid mix and thermal energy from natural gas during packaging treatment (A5).

Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Europe

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.
Sphera LCA FE (GaBi ts) serves as background database for the calculation. The *CUP* version 2022.2 is used.

LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

For 1 m^2 of woven wall covering, the biogenic carbon content is declared below:

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product (coating based on starch)	0.00568	kg C
Biogenic carbon content in accompanying packaging	0.00912	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Transport to the building site (A4)

Name	Value	Unit
Litres of fuel	0.000338	l/100km
Transport distance	100	km
Capacity utilisation (including empty runs)	50	%
Gross weight of products transported	0.145	kg

Installation into the building (A5)

The environmental results cover the cutting losses during installation. The wall covering can come with/without aqua technology (self-adhesive layers). During application, the wall or ceiling is pasted and then the strip of wall covering is hung on the prepared paste bed, or, alternatively, the wall covering comes with a water-activatable adhesive which is already applied to the wall covering's backing – this adhesive then can be easily activated by water using the 'Aqua-Quick device' specially developed for this purpose. Vitrulan's Aqua Technology facilitates work and reduces processing times for the user. The Public annexe to the EPD for the aqua technology is declared in an attachment.

Name	Value	Unit
Material loss (Cuttings waste at installation)	0.00654	kg
Cardboard (waste packaging to incineration)	0.0121	kg/m2
Wooden pallets (waste packaging to incineration)	0.00799	kg/m2
Polyethylene film (waste packaging to incineration)	0.00115	kg/m2
Paper (waste packaging to incineration)	0.000154	kg/m2

End of life (C1-C4)

Name	Value	Unit
Collected separately waste type wall covering(send to landfill)	0.145	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

For the thermal and electrical energy generated in Module A5 due to the packaging treatment, avoided burdens have been calculated by the inversion of electricity grid mix and thermal energy from natural gas, using European datasets and grouped to Module D.

LCA: Results

The following table depicts the results of the indicators concerning the estimated impact, use of resources as well as waste and other output flows in relation to 1 m² of woven wall covering with the weight of 0.145 kg/m².

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

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	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m2 Woven glass fibre wall covering

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	7.04E-01	1.04E-03	7E-02	1.49E-03	6.13E-04	0	2.3E-02	-6.46E-03
GWP-fossil	kg CO_2 eq	7.52E-01	1.03E-03	3.86E-02	1.48E-03	6.06E-04	0	2.16E-03	-6.42E-03
GWP-biogenic	kg CO_2 eq	-4.74E-02	4.31E-06	3.14E-02	1.33E-05	2.54E-06	0	2.08E-02	-3.29E-05
GWP-luluc	kg CO_2 eq	2.44E-04	7.05E-06	1.19E-05	3.13E-07	4.16E-06	0	3.98E-06	-7.07E-07
ODP	kg CFC11 eq	3.8E-12	1.03E-16	1.76E-13	2.17E-14	6.07E-17	0	5.07E-15	-4.35E-14
AP	mol H^+ eq	3.63E-03	1.13E-06	1.73E-04	3.25E-06	7.3E-07	0	1.53E-05	-8.46E-06
EP-freshwater	kg P eq	5.4E-06	3.74E-09	2.46E-07	4.32E-09	2.21E-09	0	3.65E-09	-8.85E-09
EP-marine	kg N eq	7.85E-04	3.55E-07	3.84E-05	7.29E-07	2.43E-07	0	3.91E-06	-2.29E-06
EP-terrestrial	mol N eq	8.43E-03	4.27E-06	4.19E-04	7.65E-06	2.89E-06	0	4.3E-05	-2.46E-05
POCP	kg NMVOC eq	2.23E-03	9.66E-07	1.08E-04	1.97E-06	6.34E-07	0	1.19E-05	-6.42E-06
ADPE	kg Sb eq	1.62E-07	1.05E-10	7.45E-09	4.03E-10	6.23E-11	0	2.21E-10	-9.71E-10
ADPF	MJ	1.24E+01	1.37E-02	5.73E-01	2.69E-02	8.11E-03	0	2.82E-02	-1.09E-01
WDP	m^3 world eq deprived	1.02E-01	1.17E-05	8.78E-03	3.38E-04	6.91E-06	0	2.36E-04	-6.85E-04

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m2 Woven glass fibre wall covering

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	2.31E+00	9.52E-04	4.5E-01	1.49E-02	5.62E-04	0	4.24E-03	-3.01E-02
PERM	MJ	3.28E-01	0	-3.28E-01	0	0	0	0	0
PERT	MJ	2.64E+00	9.52E-04	1.22E-01	1.49E-02	5.62E-04	0	4.24E-03	-3.01E-02
PENRE	MJ	1.24E+01	1.38E-02	6.23E-01	2.69E-02	8.14E-03	0	2.83E-02	-1.09E-01
PENRM	MJ	4.95E-02	0	-4.95E-02	0	0	0	0	0
PENRT	MJ	1.24E+01	1.38E-02	5.73E-01	2.69E-02	8.14E-03	0	2.83E-02	-1.09E-01
SM	kg	9.57E-03	0	4.33E-04	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0
FW	m^3	4.89E-03	1.1E-06	3.2E-04	1.42E-05	6.49E-07	0	7.18E-06	-2.89E-05

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m2 Woven glass fibre wall covering

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	4.21E-07	7.29E-14	1.91E-08	2.32E-12	4.31E-14	0	1.45E-12	-1.48E-11
NHWD	kg	6.05E-02	2.25E-06	9.99E-03	2.02E-05	1.33E-06	0	1.45E-01	-5.53E-05
RWD	kg	4.95E-04	2.56E-08	2.3E-05	4.29E-06	1.51E-08	0	3.14E-07	-8.62E-06
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0
EEE	MJ	0	0	3.03E-02	0	0	0	0	0

EET	MJ	0	0	5.42E-02	0	0	0	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional:
1 m2 Woven glass fibre wall covering

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	4E-08	7.92E-12	1.86E-09	2.69E-11	4.86E-12	0	1.88E-10	-7.01E-11
IR	kBq U235 eq	5.34E-02	3.86E-06	2.5E-03	7.27E-04	2.28E-06	0	3.49E-05	-1.46E-03
ETP-fw	CTUe	3.8E+00	9.73E-03	1.78E-01	1.18E-02	5.75E-03	0	1.58E-02	-2.4E-02
HTP-c	CTUh	4.86E-10	2.01E-13	2.24E-11	3.38E-13	1.18E-13	0	2.42E-12	-1.1E-12
HTP-nc	CTUh	4.82E-08	1.08E-11	2.21E-09	1.24E-11	6.42E-12	0	2.67E-10	-4.23E-11
SQP	SQP	7.13E+00	5.81E-03	3.26E-01	9.68E-03	3.43E-03	0	5.88E-03	-1.95E-02

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

References

Standards

EN 12149
DIN EN 12149, Wallcoverings in roll form - Determination of migration of heavy metals and certain other elements, of vinyl chloride monomer and of formaldehyde release

EN 12524
DIN EN 12524:2000, Building materials and products - Hygrothermal properties - Tabulated design values

EN 12667
DIN EN 12667:2001, Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Products of high and medium thermal resistance

EN 13501
EN 13501-1, Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests

EN 15804
EN 15804:2012+A2:2019+AC:2021, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

ISO 354
DIN EN ISO 354:2003, Acoustics - Measurement of sound absorption in a reverberation room

ISO 11654
DIN EN ISO 11654:1997, Acoustics - Sound absorbers for use in buildings - Rating of sound absorption

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

ISO 15686
ISO 15686:1, -2, -7 and -8, Buildings and constructed assets — Service life planning

Further References

IBU 2021
Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021, www.ibu-epd.com

OEKO-TEX
OEKO-TEX Standard 100, label for textiles tested for harmful substances, https://www.oeko-tex.com/en/our-standards/oekotex-standard-100 (accessed on 13 July 2023)

PCR Part A
PCR - Part A: Calculation rules for the Life Cycle Assessment and Requirements on the Background Report, version 2.1, Institut Bauen und Umwelt e.V.,2021

PCR Part B
PCR – Part B: Requirements of the EPD for Wall coverings, v2, Institut Bauen und Umwelt e.V., 2023

REACH Regulation
REACH Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

Regulation No. 305/2011
Regulation (EU) No. 305/2011 of the European parliament and of the Council of 9 March 2011 laying down harmonised

conditions for the marketing of construction products and repealing Council Directive 89/106/EEC EN 15102:2007+A1:2011, Decorative wallcoverings - Roll and panel form products

Sphera LCA FE (GaBi ts)
GaBi ts dataset documentation for the software system and databases, LBP, University of Stuttgart and thinkstep, Leinfelden-Echterdingen, 2023 (https://www.gabi-software.com/support/gabi)

SVHC list
Substances of Very High Concern candidate list (published in accordance with Article 59(10) of the REACH Regulation) (accessed on 13 July 2023)

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