



SHI PRODUCT PASSPORT

Find products. Certify buildings.

SHI Product Passport No.:

12190-10-1004

Disbopox 447 E.MI Wasserepoxid

Product group: Coatings



CAPAROL Farben Lacke Bautenschutz GmbH
Roßdörfer Straße 50
64372 Ober-Ramstadt



Product qualities:



Köttner

Helmut Köttner
Scientific Director

Freiburg, 02 February 2026



Product:

Disbopox 447 E.MI Wasserepoxid

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The SHI Database is the first and only database for construction products whose comprehensive processes and data accuracy are regularly verified by the independent auditing company SGS-TÜV Saar





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SHI Product Assessment 2024

Since 2008, Sentinel Holding Institut GmbH (SHI) has been establishing a unique standard for products that support healthy indoor air. Experts carry out independent product assessments based on clear and transparent criteria. In addition, the independent testing company SGS regularly audits the processes and data accuracy.

Criteria	Product category	Assessment
SHI Product Assessment		Indoor Air Quality Certified
Valid untill: 07 August 2026		



Product:

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Product labels

In the construction industry, high-quality materials are crucial for a building's indoor air quality and sustainability. Product labels and certificates offer guidance to meet these requirements. However, the evaluation criteria of these labels vary, and it is important to carefully assess them to ensure products align with the specific needs of a construction project.



Product:

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Legal notices

(*) These criteria apply to the construction project as a whole. While individual products can positively contribute to the overall building score through proper planning, the evaluation is always conducted at the building level. The information was provided entirely by the manufacturer.

Find our criteria here: <https://www.sentinel-holding.eu/de/Themenwelten/Pr%C3%BCfverfahren/kriterien%20f%C3%BCr%20Produkte>

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Publisher

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DisboPOX® W 447

2K-EP-Universalharz, wässrig



Wässrige 2K-Epoxidharzversiegelung für Wandbeschichtungen und Bodenflächen mit geringer bis mittlerer Belastung.

Produktbeschreibung

Verwendungszweck

Bodenflächen:

Für mineralische Bodenflächen und Hartasphaltestriche im Innenbereich in Industrie und Gewerbe, wie z.B. in Versorgungs-, Sozialräumen, Heizzentralen, Lagern, Archiven, Magazinen, auf Gängen, Fluchtwegen, Nottreppen.

Wandflächen:

Für mineralische Wandflächen, die hohen Belastungen durch Chemikalien, Desinfektionsmittel oder Feuchtigkeit ausgesetzt sind, wie z.B. in Krankenhäusern, Lüftungsschächten, Laboratorien, Produktionsräumen der Lebens- und Genussmittelindustrie. Zwischen- und Schlussbeschichtung für Capaver Glasgewebe und Capaver AkkordVlies-Z.

Eigenschaften

- desinfektionsmittelbeständig
- Prüfung für die Anwendung in der Lebensmittelindustrie
- Dekontaminierbarkeit sehr gut (DIN 25 415/ ISO 8690)
- diffusionsfähig
- emissionsminimiert, (AgBB-konform & Eurofins IAC Gold zertifiziert)
- Ausgasungszertifikat CSM Qualitätsbescheinigung nach ISO 14644-15, Klasse -7.7, Prüfbericht Nr. DA 2403-1506
- Partikelemissionszertifikat CSM Qualitätsbescheinigung nach ISO 14644-1, Klasse 5, Prüfbericht Nr. DA 2403-1506
- Reinigbarkeit CSM - Riboflavintest, Exzellent - Prüfbericht Nr. DA 2403-1506
- H₂O₂-Absorption/Desorption CSM, nicht-absorbierend, Prüfbericht Nr. DA 2403-1506

Materialbasis

2K-Epoxidharz, wässrig

Farbtöne

5 kg Kunststoff-Kombi-Gebinde:

- ca. RAL 7032 (Kieselgrau)

10 kg Kunststoff-Kombi-Gebinde:

- ca. RAL 7023 (Betongrau)
- ca. RAL 7032 (Kieselgrau)
- ca. RAL 7035 (Lichtgrau)
- ca. RAL 7038 (Achatgrau)
- Weiß (ca. RAL 9016 Verkehrsweiß)

40 kg Gebinde(Komp. A: 24 kg Kunststoffhobbock, Komp. B: 16 kg Kunststoffeimer):

- ca. RAL 7032 (Kieselgrau)
- ca. RAL 7035 (Lichtgrau)
- ca. RAL 7038 (Achatgrau)
- Sonderfarbtöne auf Anfrage



	10 kg ColorExpress (Kunststoff-Kombi-Gebinde Basis 1 oder Basis 3):
	■ Wunschfarbton tönbar an den ColorExpress-Station
Glanzgrad	Seidenglänzend, G ₂
Lagerung	Kühl, trocken und frostfrei. Die Temperatur der Komponenten soll beim Mischvorgang zwischen 15 °C und 25 °C liegen. Originalverschlossenes Gebinde mindestens 24 Monaten lagerstabil.
Technische Daten	■ Dichte: ca. 1,4 g/cm³ ■ Trockenschichtdicke: ca. 35 µm/100 g/m² ■ Diffusionswiderstandszahl µ (H₂O): ca. 40.000 ■ Abrieb nach Taber (CS 10/1000 U/1000 g): 99 mg/30 cm²

Verarbeitung

Geeignete Untergründe	Der Untergrund muss eben, trocken, tragfähig, formstabil, fest, frei von losen Teilen, Staub, Ölen, Fetten und sonstigen trennend wirkenden Substanzen sein.
	Bodenflächen: Beton und Zementestrich sowie starre EP-Beschichtungen und Hartasphaltestriche im Innenbereich. Die Oberflächenzugfestigkeit des Untergrundes muss im Mittel min. 1,5 N/mm ² betragen. Der kleinste Einzelwert darf 1,0 N/mm ² nicht unterschreiten. Die zulässige Restfeuchte beträgt bei Beton und Zementestrich maximal 4 CM-%. Hartasphaltestriche müssen mind. der Härteklasse IC 15 entsprechen und dürfen sich unter den gegebenen Temperaturbedingungen und mechanischen Belastungen nicht verformen.
	Wandflächen: Capaver Glasgewebe, Capaver AkkordVlies-Z, DisboCRET® 505 Feinspachtel und Caparol-Akkordspachtel KF. Die Eignung von Putzen der Mörtelgruppe PII und PIII ist bauseits zu prüfen. Die Oberflächenzugfestigkeit des Untergrundes muss im Mittel 0,8 N/mm ² betragen. Der kleinste Einzelwert darf 0,5 N/mm ² nicht unterschreiten.
	Andere Untergrundarten bedürfen einer gesonderten Beratung durch Disbon.
Untergrundvorbereitung	Der Untergrund ist durch geeignete mechanische Verfahren, wie z.B. Kugelstrahlen oder Diamantschleiftechnik, vorzubereiten. Nicht ausreichend tragfähige Schichten und Verschmutzungen müssen entfernt werden. Poren und Lunker sind zu öffnen, der Untergrund muss eine feinraue Struktur aufweisen. Bei Hartasphaltestrich muss der Zuschlagstoff nach der Vorbereitung zu mind. 75 % sichtbar sein. Starre EP-Beschichtungen gründlich reinigen und bis zum Weißbruch anschleifen bzw. matt strahlen.
Materialzubereitung	Komponente A aufrühren. Komponente B der Komponente A zugeben, mit langsam laufendem Rührwerk (max. 400 U/min) intensiv mischen. Material in ein anderes Gefäß umfüllen (umtopfen) und nochmals gründlich mischen (nicht aus dem Liefergebinde verarbeiten). Gegebenenfalls langsam die erforderliche Menge DisboADD® 947 einrühren.
Mischungsverhältnis	Komponente A : Komponente B = 3 : 2 Gew.-Teile
Auftragsverfahren	Je nach Anwendung mit Pinsel, mittelfloriger Walze (11 mm Polyamid) oder Airlessgerät (ohne Filter, mind. 50 bar, Düse: 0,015–0,017 inch, Spritzwinkel: 45 °, Nachrollen wird empfohlen). Auf gleichmäßige Schichtdicken achten, da sonst Glanzunterschiede auftreten können.
Beschichtungsaufbau	Grundierung Stark saugende Untergründe mit DisboPOX® W 443 oder DisboFLOOR® 420 E.MI PLUS grundieren. Normal oder schwach saugende Untergründe können alternativ mit DisboPOX® W 447, 5–10 % mit Wasser verdünnt grundiert werden. Nichtsaugende Untergründe wie Altanstriche und Hartasphalt unverdünnt grundieren. Zur Egalisierung von Rautiefen kann eine Kratzspachtelung eingesetzt werden: Siehe Technische Information DisboFLOOR® 420 E.MI PLUS oder DisboPOX® W 453
	Versiegelung Zwischen- und Schlussanstrich unverdünnt auftragen. Zur Erzielung einer rutschhemmenden Oberfläche dem Schlussanstrich bis zu 4 Gew.-% DisboADD® 947 Glasperlen feine zugegeben.
	Oberflächengestaltungen DisboADD® 8255 Farbchips 1 - 2 mm oder DisboADD® 948 Farbchips 2 - 4 mm (nach Trocknung mit DisboPUR® W 458 versiegeln)

Verbrauch

Grundierung	
DisboPOX® W 443 <i>oder</i> DisboPOX® W 447 5 - 10 % mit Wasser verdünnt <i>oder</i> DisboFLOOR® 420 E.MI PLUS	ca. 200 g/m ² ca. 200 g/m ² ca. 400 g/m ²
Capaver Glasgewebe und Capaver AkkordVlies-Z DisboPOX® W 447 max. 5 % mit Wasser verdünnt	ca. 120–200 g/m ²
Versiegelung	
Bodenflächen DisboPOX® W 447	ca. 200 - 250 g/m ² je Auftrag
Bodenfläche rutschhemmend DisboPOX® W 447 DisboADD® 947 Glasperlen, fine (Slidestop) DisboADD® 8255 Farbchips	ca. 250 g/m ² für R9 ca. 2,5 g/m ² (1Gew.%) für R10 ca. 10 g/m ² (4 Gew.%) für R10 ca. 10 g/m ²
Wandflächen	ca. 120–180 g/m ² je Auftrag

Exakte Verbrauchswerte durch Musterlegung am Objekt ermitteln.

Verarbeitbarkeitsdauer

Bei 20 °C und 60 % relativer Luftfeuchtigkeit ca. 90 Minuten. Höhere Temperaturen verkürzen, niedrigere verlängern die Topfzeit. Das Ende der Topfzeit ist optisch nicht erkennbar. Ein Überschreiten führt zu Glanzgrad- und Farbtonveränderungen sowie zu niedrigeren Festigkeiten und Haftungsverlusten mit dem Untergrund.

Verarbeitungsbedingungen

Die Werkstoff-, Umluft- und Untergrundtemperatur muss mindestens 10 °C betragen und darf 30 °C nicht überschreiten.
Die relative Luftfeuchtigkeit darf 80 % nicht überschreiten. Die Untergrundtemperatur muss immer mindestens 3 °C über der Taupunkttemperatur liegen.
Während der Trocknungsphase für ausreichende Be- und Entlüftung sorgen, da durch das Verdunsten des enthaltenen Wassers die Luftfeuchtigkeit ansteigen kann. Zugluft vermeiden.

Wartezeiten

Die Wartezeiten zwischen den Arbeitsgängen sollten bei 20 °C mind. 6, max. 48 Stunden betragen. Bei längeren Wartezeiten muss die Oberfläche des vorangegangenen Arbeitsganges angeschliffen werden. Der angegebene Zeitraum wird durch höhere Temperaturen verkürzt, durch niedrigere verlängert.

Trocknung/Trockenzeit

Bei 20 °C und 60 % relativer Luftfeuchtigkeit nach ca. 6 Stunden begeh- und überarbeitbar, nach ca. 7 Tagen vollständig mechanisch und chemisch belastbar. Bei niedrigen Temperaturen entsprechend länger.
Während des Aushärtungsprozesses aufgetragenes Material vor Feuchtigkeit schützen, da sonst Oberflächenstörungen und Haftungsminderungen auftreten können.

Werkzeugreinigung

sofort nach Gebrauch und bei längeren Arbeitsunterbrechungen mit Wasser.

Hinweise

Auf zusammenhängenden Flächen nur Farbtöne einer Anfertigung (Charge) verwenden. Bei schwach deckenden Farbtönen (z.B. Gelb, Orange oder Rot) können mehrere Arbeitsgänge erforderlich sein. Ggf. sollte der erste Anstrich mit einem gut deckenden Grundierfarbton erfolgen.

Farbtonveränderungen und Kreidungserscheinungen sind bei UV- und Witterungseinflüssen möglich. Das BFS-Merkblatt 25 ist zu beachten. Organische Farbstoffe (z.B. in Kaffee, Rotwein oder Blättern) sowie verschiedene Chemikalien (z.B. Desinfektionsmittel, Säuren u.a.) können zu Farbtonveränderungen führen.

Die DISBON Bautenschutz-Verarbeitungshinweise für Fußböden sind zu beachten.

Gutachten

auf Anfrage

Reinigung und Pflege

DISBON Reinigungs- und Pflegehinweise für Fußböden beachten.

Gefahrenhinweise/
Sicherheitsratschläge
(Stand bei Drucklegung)

Nur für gewerbliche Anwender.

Komponente A:

Kann allergische Hautreaktionen verursachen. Ist ärztlicher Rat erforderlich, Verpackung oder Kennzeichnungsetikett bereithalten. Darf nicht in die Hände von Kindern gelangen. Nicht in die Augen, auf die Haut oder auf die Kleidung gelangen lassen. Schutzhandschuhe/ Augenschutz tragen. BEI BERÜHRUNG MIT DER HAUT: Mit viel Wasser und Seife waschen. Kontaminierte Kleidung ausziehen und vor erneutem Tragen waschen. Enthält: 3-Aminomethyl-3,5,5-trimethylcyclohexylamin, m-Phenylbis(methylamin). Achtung! Beim Sprühen können gefährliche lungengängige Tröpfchen entstehen. Aerosol oder Nebel nicht einatmen.

Komponente B:

Kann allergische Reaktionen hervorrufen. Enthält Reaktionsmasse aus 5-Chlor-2-methyl-2H-isothiazol-3-on und 2-Methyl-2H-isothiazol-3-on (3:1). Enthält epoxidhaltige Verbindungen.

Hotline für Allergieanfragen: 0800/1895000 (kostenfrei aus dem deutschen Festnetz).

Entsorgung

Nur restentleertes Gebinde zum Recycling geben.
Materialreste: Grundmasse mit Härter aushärten lassen und als Farbabfälle entsorgen. Nicht ausgehärtete Produktreste sind Sonderabfall.

EU-Grenzwert für den VOC-Gehalt

dieses Produktes (Kat. A/j): 140 g/l (2010). Dieses Produkt enthält max. 15 g/l VOC.

Giscode

RE 1/ Neue Einstufung ab 2019: RE 10

Nähere Angaben

zu Gefahrenhinweisen/ Sicherheitsratschlägen: Siehe Sicherheitsdatenblätter.
Bei der Verarbeitung der Materialien sind die DISBON Bautenschutz-Verarbeitungshinweise zu beachten.

CE-Kennzeichnung

EN 13813

Die EN 13813 "Estrichmörtel, Estrichmassen und Estriche – Estrichmörtel und Estrichmassen – Eigenschaften und Anforderungen" legt Anforderungen an Estrichmörtel fest, die für Fußbodenkonstruktionen in Innenräumen eingesetzt werden. Kunstharzbeschichtungen und -versiegelungen werden auch von dieser Norm erfasst.

Produkte, die der o.g. Norm entsprechen, sind mit dem CE-Kennzeichen zu versehen. Die Kennzeichnung erfolgt auf dem Gebinde sowie im Anhang der Leistungserklärung, die im Internet unter www.disbon.de abgerufen werden kann.

Technische Beratung

Alle in der Praxis vorkommenden Untergründe und deren technische Bearbeitung können in dieser Druckschrift nicht abgehandelt werden. Sollen Untergründe bearbeitet werden, die in dieser Technischen Information nicht aufgeführt sind, ist es erforderlich, mit uns oder unseren Außendienstmitarbeitern Rücksprache zu halten. Wir sind gerne bereit, Sie detailliert und objektbezogen zu beraten.

Technischer Beratungsservice

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E-Mail: kundenservicecenter@caparol.de



Erklärung zur Übereinstimmung von Produkten mit Umweltproduktdeklarationen (EPD)

Der Industrieverband Deutsche Bauchemie, in dem unser Unternehmen Mitglied ist, hat sogenannte Muster-Umweltproduktdeklarationen (Muster-EPD) entwickelt und durch das unabhängige Institut Bauen und Umwelt e.V. (IBU) verifizieren lassen. Diese, durch das IBU verifizierten Muster-EPDs wurden von der Deutschen Bauchemie und dem Institut Bauen und Umwelt veröffentlicht.

Als Mitgliedsunternehmen der Deutschen Bauchemie haben wir exklusiv die Möglichkeit mittels eines EPD-Leitfadens und anhand unserer Produktrezepturen zu überprüfen, ob unsere Produkte durch die Muster-EPD abgedeckt werden.

Mit dieser Erklärung bestätigen wir, dass die Produkte,

DisboFLOOR® 420 E.MI PLUS
DisboFLOOR® 498 ESD E.MI PLUS
DisboFLOOR® 475 E.MI PLUS
DisboPOX® W 442
DisboPOX® W 447
DisboPOX® W 453
DisboPOX® W 454 AS
DisboPOX® W 468 THIX
DisboPOX® W 477 AS
DisboPOX® W 5022 WHG

von der Muster-EPD

Products based on epoxy-resin, group 1

(Declaration number EPD-DBC-20220174-IBF1-EN; valid to 28.08.2027).

erfasst werden. Das heißt, dass die Ökobilanzen und die sonstigen Inhalte der beigefügten Muster-EPD auf die o.g. Produkte zutreffen und für die Bewertung der Nachhaltigkeit von Gebäuden, in denen die o.g. Produkte verbaut werden, herangezogen werden können.

Für Rückfragen stehen wir Ihnen gerne zur Verfügung.

DAW SE
20.03.2025



**DEUTSCHE
AMPHIBOLIN-WERKE
VON ROBERT MURJAHN**

Statement of conformity of products with Environmental Product Declarations (EPD)

The Industry Association Deutsche Bauchemie, of which our company is a member, has developed so-called model Environmental Product Declarations (model EPDs) and had them verified by the independent Institute Bauen und Umwelt e.V. (IBU). These IBU-verified model EPDs were published by Deutsche Bauchemie Association and the Institute Bauen und Umwelt.

Being part of the Deutsche Bauchemie gives us the unique chance to use a guide for EPD in addition to our product formulations to verify if our products match the model EPD.

We hereby affirm that the products,

DisboFLOOR® 420 E.MI PLUS
DisboFLOOR® 498 ESD E.MI PLUS
DisboFLOOR® 475 E.MI PLUS
DisboPOX® W 442
DisboPOX® W 447
DisboPOX® W 453
DisboPOX® W 454 AS
DisboPOX® W 468 THIX
DisboPOX® W 477 AS
DisboPOX® W 5022 WHG

are covered by the model EPD

Products based on epoxy-resin, group 1

(Declaration number EPD-DBC-20220174-IBF1-EN; valid to 28.08.2027).

Thus, life cycle assessments and other contents of the attached model EPD apply to the above-mentioned products and may be used to evaluate the sustainability of buildings having the above products installed.

Please contact us for further inquiries.

DAW SE
20.03.2025

Better Building Performance. Better Life. *Since 1895.*



ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration	DBC, EFCC, FEICA, IVK
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-DBC-20220174-IBF1-EN
Issue date	29.08.2022
Valid to	28.08.2027

Products based on epoxy-resin, group 1

DBC - Deutsche Bauchemie e.V.

EFCC - European Federation for Construction Chemicals

FEICA - Association of the European Adhesive and Sealant Industry

IVK - Industrieverband Klebstoffe e.V.

www.ibu-epd.com | <https://epd-online.com>



ECO PLATFORM

EPD
VERIFIED



1. General Information

DBC - Deutsche Bauchemie e.V.
EFCC - European Federation for Construction Chemicals
FEICA - Association of the European Adhesive and Sealant Industry
IVK - Industrieverband Klebstoffe e.V.

Programme holder

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

Declaration number

EPD-DBC-20220174-IBF1-EN

This declaration is based on the product category rules:

Reaction resin products, 01.2019
(PCR checked and approved by the SVR)

Issue date

29.08.2022

Valid to

28.08.2027

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

Dr. Alexander Röder
(Managing Director Institut Bauen und Umwelt e.V.)

Products based on epoxy-resin, group 1

Owner of the declaration

DBC, Mainzer Landstr. 55, D-60329 Frankfurt a.M.
EFCC, 172 Boulevard du Triomphe, B-1160 Brussels
FEICA, Rue Belliard 40, B-1040 Brussels
IVK, Völklingerstr. 4, D-40219 Düsseldorf

Declared product / declared unit

1 kg product based on epoxy-resin, group 1; density 1 - 2,5 g/cm³

Scope:

This verified EPD entitles the holder to bear the symbol of the Institut Bauen und Umwelt e.V. It exclusively applies to products produced in Europe and for a period of five years from the date of issue. This EPD may be used by members of DBC, EFCC, FEICA and IVK 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 secretariats of the four associations. The members of the associations are listed on their respective websites.

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

Matthias Schulz
(Independent verifier)

2. Product

2.1 Product description/Product definition

This EPD comprises reactive products based on epoxy (EP) resin and hardening agent; the Volatile Organic Content (VOC) content is ≤ 1 % (VOC definition according to *Decopaint Directive*). The aqueous systems can be formulated as aqueous dispersions on the resin or hardening agent side. They comply with multiple, often specific functions in the construction, furnishing and repair of structures. The product displaying the highest environmental impacts was used as a representative product for calculating the Life Cycle Assessment results (worst-case approach).

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

2.2 Application

Products based on epoxy-resins are used for the following applications:

Module 1: Reactive products for protecting and repairing concrete structures

Products for increasing the durability of concrete and reinforced concrete structures as well as for new concrete and for maintenance and repair work (requirements 1.1), products used to restore and/or to replace defective concrete and to protect reinforcement, necessary to extend the service life of a concrete structure exhibiting deterioration (requirements 1.2), products for structural bonding of strengthening materials to an existing concrete structure (requirements 1.3) and products for concrete injection for filling cracks, voids and interstices in concrete (requirements 1.4)

Module 2: Liquid-applied roof waterproofing kits

Reactive products for waterproofing roof constructions which are applied on site

Module 3: Reactive products for liquid-applied bridge deck waterproofing kits

Products for liquid-applied waterproofing for use on concrete bridge decks

Module 4: Reactive products for watertight covering kits

Products for waterproofing floors and/or walls in wet rooms inside buildings

Module 5: Reactive products for liquid-applied waterproofings

Liquid applied products for waterproofing of buildings

Module 6: Screed material, floor screeds and decorative floors

Products for screed/synthetic resin screed and decorative floors for use in floor constructions

Module 7: Reactive products for waterproofing and/or for pre-treating mineral substrates

Products to protect mineral substrates from the ingress of water

2.3 Technical Data

The density of the products is between 1,0 and 2,5 g/cm³, other relevant technical data can be found in the manufacturer's technical documentation.

Module 1: Reactive products for protecting and repairing concrete structures

1.1 The requirements on essential characteristics for all intended uses in accordance with *EN 1504-2*, Tables 1 and 5 must be maintained. These are:

- Permeability to CO₂ (*EN 1062-6*)
- Water vapour permeability (*EN ISO 7783-1/-2*)
- Capillary absorption and permeability to water (*EN 1062-3*)
- Adhesive strength by pull-off test (*EN 1542*)

1.2 The requirements on essential characteristics for all intended uses in accordance with *EN 1504-3*, Tables 1 and 3, must be maintained. These are

- Compressive strength (*EN 12190*)
- Chloride content (*EN 1015-17*)
- Adhesive strength by pull-off test (*EN 1542*)

1.3 Essential characteristics for all intended uses in accordance with *EN 1504-4*, Tables 3.1 and 3.2 (manufacturer's declaration of performance)

1.4 Requirements on essential characteristics for all intended uses in accordance with *EN 1504-5*, Table 3:

- Injectability (*EN 1771*)
- Viscosity (*EN ISO 3219*)

Further essential characteristics in accordance with the manufacturer's technical documentation/declaration of performance

Module 2: Liquid-applied roof waterproofing kits

The minimum requirements of *EAD 030350-00-0402* 'Liquid-applied roof waterproofing kits' must be maintained. The essential characteristics are to be specified in accordance with the European technical assessment (ETA, specification no.).

Module 3: Reactive products for liquid-applied bridge deck waterproofing kits

The minimum requirements of *ETAG 033* 'Liquid-applied bridge deck waterproofing kits' must be maintained. The essential characteristics are to be specified in accordance with the European technical assessment (ETA, specification no.).

Module 4: Reactive products for watertight covering kits

The minimum requirements of *EAD 030352-00-0503* 'Liquid applied watertight covering kits for wet room floors and/or walls' must be maintained. The essential characteristics are to be specified in accordance with the European Technical Assessment (ETA, specification no.).

Module 5: Reactive products for liquid-applied waterproofings

The minimum requirements of the 'Test principles regarding the issuing of general building authority inspection test certificates for liquid applied products for waterproofing of buildings' (*PG-FLK*) must be maintained. The characteristics for the proof of usability are to be specified in accordance with the 'Test principles for granting general building authority test certificates for liquid applied polymer products for waterproofing buildings'.

Module 6: Screed material, floor screeds and decorative floors

The requirements on essential characteristics according to *EN 13813* 'Screed material and floor screeds – Screed materials – Properties and requirements' must be maintained. For synthetic resin screeds, these are:

- Bond strength (*EN 13892-8*)
- Reaction to fire (*EN 13501-1*)

Further essential characteristics in accordance with the manufacturer's technical documentation/declaration of performance

Module 7: Reactive products for waterproofing and/or for pre-treating mineral substrates

Essential characteristics in accordance with the manufacturer's technical documentation

2.4 Delivery status

Liquid or pasty in containers made of tinplate or plastic packed in separate or combi-containers for the required mixing ratio. Packages containing one kg of product in different types of containers. Sealants in plastic cartridges and foil packs. Typical container

sizes contain 10 to 25 kg of material. For major works, vats containing approx. 200 kg or IBCs containing more than 1 tonne are also used. The LCA is based on a sheet steel container.

2.5 Base materials/Ancillary materials

The products based on epoxy-resin, comprise glycidyl components (epoxy resin and/or diluting agents) and a crosslinking agent component. When installed on site hardening occurs with the crosslinking agent component. For this purpose, polyamines, polyamides, polyamine adducts or mixtures of the same are used. Additionally the formulation can contain auxiliaries such as accelerators, catalysts, wetting agents, foam regulators and viscosity regulators for fine adjustment of the product properties. The mixing ratio for the glycidyl components and the crosslinker is adjusted in accordance with the stoichiometric requirements. Product crosslinking starts immediately after mixing the components. **Typically**, the products covered by this EPD contain the following range of base materials and auxiliaries:

Resin component: ~ 0-90 %

Reactive diluting agent: ~ 0-90 %

Crosslinker component: ~ 5-25 %

Filler: ~ 0-70 %

Water: ~ 0-40 %

Other: <4 %

VOC: ≤1 % according to *Decopaint Directive* (mandatory)

These ranges are average values and the composition of products complying with the EPD can deviate from these concentration levels in individual cases. More detailed information is available in the respective manufacturer's documentation (e.g. product data sheets).

Note: For companies to declare their products within the scope of this EPD it is not sufficient to simply comply with the product composition shown above. The application of this EPD is only possible for member companies of DBC, EFCC, FEICA, and IVK member associations and only for specific formulations with a total score below the declared maximum score for a product group according to the associated guidance document.

1. substances from the "Candidate List of Substances of Very High Concern for Authorisation" (SVHC)

If this product contains substances listed in the *candidate list* (latest version) exceeding 0.1 percentage by mass, the relevant information can be found in the safety data sheet of the relevant product covered by this model EPD.

2. CMR substances in categories 1A and 1B

If this product contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the *candidate list*, exceeding 0.1 percentage by mass, the relevant information can be found in the safety data sheet of the relevant product covered by this model EPD.

3. Biocide products added to the construction product

If this construction product contains biocide products, the active substances, information on the concentration and/or concentration range, the product type together with information on their hazardous properties are listed in the safety data sheet of the respective product.

2.6 Manufacture

The components of the formulation are usually mixed batch-wise and packaged for delivery.

2.7 Environment and health during manufacturing

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

2.8 Product processing/Installation

The products based on epoxy-resin are processed by trowelling/knife-coating or rolling, pouring, spraying or injection. Precautions for safe handling and storage (e.g. air exchange, exhaust ventilation, personal protective measures, precautions required in the handling of isocyanates and conditions for safe storage) must be observed in accordance with the information on the safety data sheet.

The products based on epoxy-resin react after mixing resin and crosslinking agent under heat generation (exothermicity). The mixed components must therefore be processed swiftly within the pot life indicated. If larger volumes of the mixture remain in the container, this can lead to overheating and decomposition. In the case of reactively diluted products, exothermicity is particularly strong. Emissions of volatile components may occur.

2.9 Packaging

A detailed description of packaging is provided in section 2.4. Empty containers and clean foils can be recycled.

2.10 Condition of use

During the use phase, products based on epoxy-resin are crosslinked and essentially comprise an inert three-dimensional network. They are long-lasting products which protect our buildings in the form of adhesives, coatings or sealants as well as make an essential contribution towards retaining their function and long-term value.

2.11 Environment and health during use

Option 1: Products for applications outside indoor areas with permanent stays by people

During use, the reactive products lose their reactive properties and become inert. 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 (see chapter 7). No further influences by emissions on the environment and health are known.

2.12 Reference service life

Cured reactive epoxy products comply with a variety of, often specific, functions in the construction or refurbishment 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 weathering as well as mechanical or chemical loads.

2.13 Extraordinary effects

Fire

Even without any special fire safety features, cured reactive epoxy products comply with at least the requirements of *EN 13501-1* standard for fire classes E and Efl. In terms of the volumes applied, they only have a marginal influence on the fire performance characteristics (e.g. smoke gas development) of the building structure in which they are installed. As crosslinked epoxy products are duroplastic they do not melt or drip and they do not contribute to the spreading of fire, whereas the combustibility of crosslinked epoxy products is larger than that of other duroplastics. Among other substances, formaldehyde and phenol can be formed in the event of a fire.

Water

Cured reactive epoxy products are chemically inert and insoluble in water. They are often used to protect building structures from harmful water ingress or the effects of flooding.

Mechanical destruction

Mechanical destruction of cured reactive epoxy products does not lead to any decomposition products which are harmful to the environment or health.

2.14 Re-use phase

According to present knowledge, no environmentally harmful effects are generally anticipated in landfilling, for example, as a result of de-construction and recycling of building materials with adherent cross-

linked products. If the crosslinked products can be removed from construction products without large effort, thermal recovery is a practical recycling variant on account of their energy content. Minor adhesion is not taken into consideration during disposal. It does not interfere with the disposal/recycling of the remaining components/building materials.

2.15 Disposal

Residual material which cannot be used or recycled must be combined at a specified ratio and hardened. Hardened product residue is not special waste. Non-hardened product residue is special waste. Empty, dried containers (free of drops and scraped clean) are directed to the recycling process. Residue must be directed to proper waste disposal taking into consideration the local guidelines. The following waste codes according to the *European List of Waste (2000/532/EC)* can apply:

Hardened product residue:

European Waste Catalogue (EWC) code 08 01 12 (Paint and varnish waste with the exception of that covered by EWC 08 01 11)

EWC code 08 04 10 (Adhesive and sealant compound waste with the exception of that covered by EWC 08 04 09)

2.16 Further information

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

3. LCA: Calculation rules

3.1 Declared Unit

This EPD refers to the declared unit of 1 kg of product based on epoxy-resin, group 1; applied into the building with a density of 1-2.50 g/cm³ in accordance with the *IBU PCR* part B for reaction resin products. The results of the Life Cycle Assessment provided in this declaration have been selected from the product with the highest environmental impact (worst-case scenario).

Depending on the application, a corresponding conversion factor such as the density to convert volumetric use to mass must be taken into consideration.

The Declaration type is according to *EN 15804*: Cradle to gate with options, modules C1–C3, and module D (A1–A3, C, D) and additional modules (A4 - A5).

Declared unit

Name	Value	Unit
Declared unit	1	kg
Gross density	1 - 2.50	g/cm ³

3.2 System boundary

Modules A1, A2 and A3 are taken into consideration in the LCA:

- A1 Production of preliminary products
- A2 Transport to the plant
- A3 Production incl. provision of energy, production of packaging as well as auxiliaries and consumables and waste treatment

- A4 Transport to site
- A5 Installation, product applied into the building during A5 phase operations and packaging disposal. The end of life for the packaging material considered is described below:

- Incineration, for materials like wood.
- Landfill, for inert material like metals (where used).

-C1-C2-C3-D

The building deconstruction (demolition process) takes place in the C1 module which considers energy production and consumption in terms of diesel and all the emissions connected with the fuel-burning process to run the machines. After the demolition, the product is transported to the end-of-life processing (C2 module) where all the impacts related to the transport processes are considered. For precautionary principle and as a worst-case scenario, thermal treatment is the only end of life scenario considered. This is modelled by the incineration process (module C3) where the product ends its life cycle.

Module D accounts for potential benefits that are beyond the defined system boundaries. Credits are generated during the incineration of wastes and related electricity produced that are occurring in the A5 module.

3.3 Estimates and assumptions

For this EPD formulation and production data defined and collected by FEICA were considered. Production waste was assumed to be disposed of by incineration without credits as a worst case.

An average of steel and wooden pallets was considered in the LCA

3.4 Cut-off criteria

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

Transport of packaging materials is excluded.

3.5 Background data

Data from the *GaBi database SP40* (2020) was used as background data.

3.6 Data quality

Representative products were applied for this EPD and the product in the group displaying the highest environmental impact was selected for calculating the LCA results. The background data sets used are less than 4 years old.

Production data and packaging are based on details provided by the manufacturer. The formulation used for evaluation refers to a specific product.

The data quality of the background data is considered to be good.

3.7 Period under review

Representative formulations are valid for 2021.

3.8 Allocation

Mass allocation has been applied when primary data have been used and implemented into the LCA model.

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.

The *GaBi database SP40* (2020) was used.

4. LCA: Scenarios and additional technical information

Characteristic product properties

Information on biogenic Carbon

The product and packaging material contains biogenic carbon which is presented below.

Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic Carbon Content in product	0.048	kg C
Biogenic Carbon Content in accompanying packaging	0.026	kg C

For the preparation of building life cycle assessments, it must be taken into account that in module A5 (installation in the building) the biogenic amount of CO₂ (0.026 kg C * 3.67 = 0.095 kg CO₂-eq.) of the packaging bound in module A1-A3 is mathematically booked out.

The biogenic carbon content in the product (0.048 kg C * 3.67 = 0.176 kg CO₂-eq) is booked out in module C3.

production of this part are charged to the A5 module.

This percentage is considered as waste to disposal and impacts of its end of life have been considered in the LCA model and declared in A5.

End of life (C1-C4)

Name	Value	Unit
Collected as mixed construction waste	0.98	kg
Incineration	0.98	kg

Transport to the building site (A4)

Name	Value	Unit
Transport distance	1000	km
Gross weight	34 - 40	t
Payload capacity	27	t

Installation into the building (A5)

Name	Value	Unit
Other resources for packaging material	0.117	kg
Material loss	0.01	kg

Material loss regards the amount of product not used during the application phase into the building. This amount is 1 % of the product, impacts related to the

5. LCA: Results

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

DEVELOPMENT, MNR, MODEL 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	ND	ND	MNR	MNR	MNR	ND	ND	X	X	X	ND	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 kg of product based on epoxy-resin, group 1

Core Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	D
GWP-total	[kg CO ₂ -Eq.]	3.80E+0	5.35E-2	1.81E-1	2.73E-4	1.21E-2	5.81E-1	-3.73E-1
GWP-fossil	[kg CO ₂ -Eq.]	3.95E+0	5.30E-2	4.80E-2	2.61E-4	1.16E-2	4.21E-1	-3.72E-1
GWP-biogenic	[kg CO ₂ -Eq.]	-2.38E-1	1.55E-4	1.32E-1	1.21E-5	5.31E-4	1.61E-1	-8.39E-4
GWP-luluc	[kg CO ₂ -Eq.]	8.84E-2	4.29E-4	8.88E-4	6.27E-9	2.74E-7	3.43E-5	-2.34E-4
ODP	[kg CFC11-Eq.]	1.67E-14	6.36E-18	1.91E-16	2.78E-20	1.21E-18	2.96E-16	-3.47E-15
AP	[mol H ⁺ -Eq.]	9.57E-3	1.59E-4	1.27E-4	3.53E-6	3.66E-5	5.15E-4	-4.92E-4
EP-freshwater	[kg P-Eq.]	1.27E-5	1.61E-7	1.32E-7	5.64E-11	2.46E-9	1.02E-7	-4.31E-7
EP-marine	[kg N-Eq.]	2.35E-3	7.07E-5	3.34E-5	1.60E-6	1.68E-5	1.97E-4	-1.30E-4
EP-terrestrial	[mol N-Eq.]	2.63E-2	7.92E-4	3.96E-4	1.75E-5	1.85E-4	2.47E-3	-1.40E-3
POCP	[kg NMVOC-Eq.]	9.43E-3	1.40E-4	1.22E-4	4.81E-6	3.32E-5	5.11E-4	-3.76E-4
ADPE	[kg Sb-Eq.]	9.13E-6	3.80E-9	9.17E-8	7.90E-12	3.45E-10	4.52E-9	-5.66E-8
ADPF	[MJ]	8.39E+1	7.05E-1	9.04E-1	3.73E-3	1.63E-1	5.41E-1	-6.29E+0
WDP	[m ³ world-Eq deprived]	4.18E-2	4.73E-4	1.55E-2	5.16E-7	2.25E-5	1.54E-1	-3.45E-2

Caption: 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 kg of product based on epoxy-resin, group 1

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	D
PERE	[MJ]	8.98E+0	3.96E-2	1.07E+0	1.18E-5	5.14E-4	7.98E-1	-1.23E+0
PERM	[MJ]	1.66E+0	0.00E+0	-9.50E-1	0.00E+0	0.00E+0	-7.06E-1	0.00E+0
PERT	[MJ]	1.06E+1	3.96E-2	1.15E-1	1.18E-5	5.14E-4	9.18E-2	-1.23E+0
PENRE	[MJ]	5.93E+1	7.06E-1	1.40E+0	3.74E-3	1.63E-1	2.46E+1	-6.29E+0
PENRM	[MJ]	2.46E+1	0.00E+0	-4.91E-1	0.00E+0	0.00E+0	-2.41E+1	0.00E+0
PENRT	[MJ]	8.39E+1	7.06E-1	9.05E-1	3.74E-3	1.63E-1	5.41E-1	-6.29E+0
SM	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
RSF	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
NRSF	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
FW	[m ³]	1.85E-2	4.59E-5	5.40E-4	2.11E-8	9.22E-7	1.73E-9	-1.43E-3

Caption: 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 kg of product based on epoxy-resin, group 1

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	D
HWD	[kg]	-1.16E-6	3.28E-8	-1.14E-8	3.63E-13	1.58E-11	1.34E-1	-2.50E-9
NHWD	[kg]	2.39E-1	1.08E-4	5.02E-2	3.82E-7	1.67E-5	2.46E-5	-2.75E-3
RWD	[kg]	1.58E-3	8.73E-7	1.80E-5	4.01E-9	1.75E-7	0.00E+0	-4.21E-4
CRU	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MFR	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
MER	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EEE	[MJ]	0.00E+0	0.00E+0	2.01E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0
EET	[MJ]	0.00E+0	0.00E+0	3.66E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0

Caption: 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 kg of product based on epoxy-resin, group 1

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	D
PM	[Disease Incidence]	ND	ND	ND	ND	ND	ND	ND
IRP	[kBq U235-Eq.]	ND	ND	ND	ND	ND	ND	ND
ETP-fw	[CTUe]	ND	ND	ND	ND	ND	ND	ND
HTP-c	[CTUh]	ND	ND	ND	ND	ND	ND	ND
HTP-nc	[CTUh]	ND	ND	ND	ND	ND	ND	ND
SQP	[-]	ND	ND	ND	ND	ND	ND	ND

Caption 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

Potential Human exposure efficiency relative to U235, Disclaimer 1 – 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.

ADP minerals & metals, ADP fossil, WDP, ETF-fw, HTP-c, HTP-nc, SQP, Disclaimer 2 – The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Additional environmental impact indicators (suggested by *EN15804*, table 4) are not declared in the EPD. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high and as there is limited experience with the indicator (see International Reference Life Cycle Data System (ILCD) classification in *EN 15804*, table 5). For this reason, results based on these indicators are not considered suitable for a decision-making process and are thus not declared in the EPD.

6. LCA: Interpretation

The majority of impacts are associated with the production phase (A1-A3). The most significant contribution to the production phase impacts is the upstream production of raw materials as the main driver. Another relevant contributor in the production phase, in the category of Abiotic depletion potential for non-fossil resources (ADPminerals& metals), is the steel sheet used as a packaging material. Emissions associated with the manufacturing of products also have some influence on the Formation potential of tropospheric ozone (POCP) in the production phase. In all EPDs, CO₂ is the most important contributor to Global Warming Potential (GWP). For the Acidification Potential (AP), NO_x and SO₂ contribute (to) the largest share.

The majority of life cycle energy consumption takes place during the production phase (A1-A3). Significant contributions to Primary Energy Demand – Non-renewable (PENRT) come from the energy resources used in the production of raw materials. The largest contributor to Primary Energy Demand – Renewable (PERT) impacts comes from the consumption of

renewable energy resources required for the generation and supply of electricity. 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 low contribution to the overall impacts. Climate change from land use change is the only indicator influenced by transport processes, due to the diesel production used as fuel, because part of this diesel has been produced from bio-based raw materials.

The installation phase mainly influences climate change indicators, due to the impact related to the incineration processes used for packaging waste treatment and residual product treatment (1 % of the total mass).

The end-of-life phases influence climate change indicators, due to the thermal treatment process of the resin occurring in C3 module.

7. Requisite evidence

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 to the product 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 labelling 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 *EN 16516*;
- (3) perform testing and apply the limits after 28 days of storage in a ventilated test chamber, under the conditions specified in *EN 16516*; some regulations

and programmes 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 EN 16516.

Examples of such regulations are the *Belgian Royal Decree C-2014/24239*, or the *German AgBB/ABG*. 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 of the applied limits after 28 days of 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):

Table 1 shown below is an overview of the most relevant regulations and specifications as of October 2021, as regards requirements after 3 days of storage in a ventilated test chamber.

Table 2 provides an overview of the most relevant regulations and specifications as of October 2021, as regards requirements after 28 days of 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.

	TVOC µg/m ³	Sum of carcinogens. C1A,CA2 µg/m ³	Formaldehyde µg/m ³	Acetaldehyde µg/m ³	Sum of Form- and Acetaldehyde
German AgBB/ABG regulation	10 000	10	-/-	-/-	-/-
Belgian regulation	10 000	10	-/-	-/-	-/-
EMICODE EC1	1 000	10	50	50	50 ppb
EMICODE EC1 ^{PLUS}	750	10	50	50	50 ppb

	TVOC µg/m ³	TSVOC µg/m ³	Each carcinogen C1A,CA2 µg/m ³	Formalde- hyde µg/m ³	Acetalde- hyde µg/m ³	LCI	R value	Specials	Sum of non-LCI & non- identified µg/m ³
Belgian regulation	1000	100	1	100	200	Belgian list	1	Toluene 300 µg/m ³	-/-
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	300	German AgBB list	1	-/-	100
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	300	EU LCI list	-/-	Ammonia, odour	-/-
Finnish M1, adhesives	200 µg/m ² h	-/-	5 µg/m ² h	50 µg/m ² h	300	EU LCI list	-/-	Ammonia, odour	-/-

8. References

ETAG 033

ETAG 033:2010-09

Liquid applied bridge deck waterproofing

EN 1015-17

EN 1015-17:2005-01, Methods of test for mortar for masonry - Part 17: Determination of water-soluble chloride content of fresh mortars

EN 1062-3

EN 1062-3:2008-04, Paints and varnishes - Coating materials and coating systems for exterior masonry and concrete - Part 3: Determination of liquid water permeability

EN 1062-6

EN 1062-6:2002-10, Paints and varnishes - Coating materials and coating systems for exterior masonry and concrete - Part 6: Determination of carbon dioxide permeability

EN 1504-2

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EN 1504-3

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EN 1504-4

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EN 1504-5

EN 1504-5:2004-12, Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - Part 5: Concrete injection

EN 1542

EN 1542:1999-07, Products and systems for the protection and repair of concrete structures - Test methods - Measurement of bond strength by pull-off

EN 1771

EN 1771:2004-11, Products and systems for the protection and repair of concrete structures - Test methods - Determination of injectability and splitting test

EN ISO 3219

EN ISO 3219:1994-10, Plastics - Polymers/resins in the liquid state or as emulsions or dispersions - Determination of viscosity using a rotational viscometer with defined shear rate

EN ISO 7783

EN ISO 7783-1/-2:2019-02, Paints and varnishes - Determination of water-vapour transmission properties - Cup method

EN 12190

EN 12190:1998-12, Products and systems for the protection and repair of concrete structures - Test methods - Determination of compressive strength of repair mortar

EN 13501-1

EN 13501-1:2018, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

EN 13813

EN 13813:2002-10, Screed material and floor screeds - Screed materials - Properties and requirements

EN 13892

EN 13892:2003-02, Methods of test for screed materials - Part 8: Determination of bond strength

ISO 14025

DIN EN ISO 14025:2011-10, Environmental labels and declarations — Type III environmental declarations — Principles and procedures

EN 15804

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

EN 16516

EN 16516:2017
Construction products - Assessment of release of dangerous substances - Determination of emissions into indoor air

EN ISO 17025

EN ISO 17025:2018-03
General requirements for the competence of testing and calibration laboratories

EAD 030350-00-0402

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EAD 030352-00-0503:2019-01, Watertight covering kits for wet room floors and or walls Part 1: Liquid Applied Coverings with or without wearing surface Part 2: Kits based on flexible sheets Part 3: Kits based on inherently watertight boards

2000/532/EC

Commission decision dated 3 May 2000 replacing decision 94/3/EC on a waste directory in accordance with Article 1 a) of Council Directive 75/442/EEC on waste and Council decision 94/904/EC on a directory of hazardous waste in terms of Article 1, paragraph 4 of Directive 91/689/EEC on hazardous waste

Belgian Royal Decree C-2014/24239

Belgisch Staatsblad 8 MEI 2014, p. 60603. — Koninklijk besluit tot vaststelling van de drempelniveaus voor de emissies naar het binnenmilieu van bouwproducten voor bepaalde geoogde gebruiken

Blue Angel

Environmental label organised by the federal government of Germany www.blauer-engel.de

Candidate list

Candidate List of substances of very high concern for Authorisation, published in accordance with Article 59(10) of the REACH Regulation, ECHA, www.echa.europa.eu/candidate-list-table

CPR

CPR 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

Decopaint Directive

Directive 2004/42/CE of the European Parliament and the council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC

EMICODE

EMICODE, GEV – Gemeinschaft
Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e. V. (pub.).www.emicode.de

EWC

2000/532/EC European Waste Catalogue / Ordinance on European List of Wastes

European List of Waste

2000/532/EC European Waste Catalogue / Ordinance on European List of Wastes

GaBi 10 software & documentation

Data base for Life Cycle Engineering LBP, University of Stuttgart and Sphera, documentation of GaBi 10 data sets <http://documentation.gabi-software.com/>, 2020

German AgBB

Committee for Health-related Evaluation of Building Products: health-related evaluation of emissions of volatile organic compounds (VOC and SVOC) from building products; status: June 2012
www.umweltbundesamt.de/produkte/bauprodukte/agbb.htm

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Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt

e.V. EPD programme. Version 2.0. Berlin: Institut Bauen und Umwelt e.V., 2021
www.ibu-epd.com

Indoor Air Comfort

Product certification by Eurofins, Hamburg, Germany
www.eurofins.com

PCR Part A

Product Category Rules for Building-Related Products and Services, Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project report, Version 1.1, Institut Bauen und Umwelt e.V., 2021-01

PCR Part B

Product Category Rules for Construction Products, Part B: Reaction resin products, 2019-01

PG-FLK

PG-FLK:2019-07

Testing principles regarding the issuing of general building authority inspection certificates for liquid applied products for waterproofing of buildings

REACH

Directive (EG) No. 1907/2006 of the European Parliament and of the Council dated 18 December 2006 on the registration, evaluation, approval and restriction of chemical substances (REACH), for establishing a European Agency for chemical substances, for amending Directive 1999/45/EC and for annulment of Directive (EEC) No. 793/93 of the Council, Directive (EC) No. 1488/94 of the Commission, Guideline 76/769/EEC of the Council and Guidelines 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC of the Commission

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DisboPOX W 447 2K-EP- Universalharz, wässrig

Alle Farbtöne

Technische Daten

Bestimmte Verwendung(en)	Beschichtungsstoff
Dichte	1,40 g/cm ³
Verbrauch	0,25 kg/m ²
Glanzgrad	Seidenglänzend (nach DIN 53778)

Inhaltsstoffe

Produktcode/GISCODE	RE1; RE10
Konservierungsmittel	nicht enthalten
VOC-Gehalt nach RL 2004/42/EG	< 2 %
	< 30 g/l
VOC-Gehalt LEED [less water]	< 50 g/l
Wasserverdünnbar nach 2004/42/EG	ja
(Decopaint)	
Blei, Cadmium, Chrom VI *	nicht enthalten
Nonylphenol > 0,1 %	nicht enthalten
Dodecylphenol > 0,1 %	nicht enthalten
Bisphenol A > 0,1 %	nicht enthalten
p-tert-Butylphenol > 0,1 %	nicht enthalten
SVHC >0,1% - Substances of Very High Concern	nicht enthalten
Aliphatische KWS-Weichmacher (* kein Rezepturbestandteil)	nicht enthalten

Umweltsiegel

AgBB-Prüfung	bestanden
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Gebäudezertifizierungen - DGNB

Eignung für DGNB Kriterium ENV 1.2 (Systemversionen 2018 und 2015)

Nr.	Einsatzort	Produkttyp	Betrachtete Stoffe / Aspekte	QS 1	QS 2	QS 3	QS 4
23	Epoxydoberflächenbeschichtungen von Boden, Decke und Wand - auch in Systemaufbauten ohne spezielle Anforderungen	Versiegelungen, 2K-EP Lacke, EP-Bodenbeschichtungen - ausgenommen OS-Systeme für Parkhaus etc.	VOC, Gefahrstoffe	Ja	Ja	Ja	Ja
24	EP-/PU-Grundierungen (auch Gussasphaltestrich) und Beschichtungen für Boden- und Wandflächen (z. B. Sockel) mit speziellen Anforderungen	Industrieböden, Parkflächen und Tiefgaragen (OS8 und OS11)	Polyurethan und Epoxidharze	Ja	Ja	Ja	Ja

Gebäudezertifizierungen - LEED

LEED v.4 (EQ CREDIT: Low emitting materials)	Anforderungen erfüllt
LEED 2009 (IEQ4.1/ IEQ4.2/ IEQ4.3)	Anforderungen erfüllt
Produktkategorie	floor coatings
VOC-Limit	50 g/l
Limit erfüllt	ja
Produktkategorie	industrial maintenance coatings
VOC-Limit	100 g/l
Limit erfüllt	ja
AgBB-Prüfung	bestanden
Formaldehydgrenzwert <10µg/m³ (28d)	Anforderungen erfüllt
Recyclinganteil	nicht enthalten
Produktionsort	DAW SE Roßdörfer Straße 50 DE-64372 Ober-Ramstadt

Gebäudezertifizierungen - Bewertungssystem NaWoh

Bewertungssystem Nachhaltiger Wohnungsbau (NaWoh) v3.1	geeignet
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