Statement of Recognition

BREG EPD No.: R00032 Issue 01

The attached

Environmental Product Declaration

provided by:

Profil-Vetrieb GmbH/PROTEKTORWERK Florenz Maisch GmbH & Co. KG

is Recognised by BRE Global as being in accordance with the requirements of:

EN 15804:2012+A1:2013

as verified and issued by: IBU

Reference number: EPD-PTW-20180156-ICB1-EN

This declaration is for:

MAXI-TEC® CW- und UW-Profile

Company Address

Viktoriastraße 58
D-76554 Gaggenau

Signed for BRE Global Ltd	Emma Baker Operator	23 April 2019 Date of this Issue
23 April 2019 Date of First Issue		05 March 2024 Expiry Date

EPD Verified and issued by IBU

BRE Global Ltd., Garston, Watford WD25 9XX.
T: +44 (0)333 321 8811 F: +44 (0)1923 664603
E: Enquiries@breglobal.com

ENVIRONMENTAL PRODUCT DECLARATION

as per /ISO 14025/ and /EN 15804/

Owner of the Declaration	**Profil-Vetrieb GmbH/PROTEKTORWERK Florenz Maisch GmbH & Co. KG**
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-PTW-20180156-ICB1-EN
Issue date	05.03.2019
Valid to	04.03.2024

MAXI-TEC® CW- und UW-Profile

Profil-Vertrieb GmbH/PROTEKTORWERK Florenz Maisch GmbH & Co. KG

Institut Bauen und Umwelt e.V.

www.ibu-epd.com / https://epd-online.com

1. General Information

Profil-Vertrieb GmbH/PROTEKTORWERK Florenz Maisch GmbH & Co. KG

MAXI-TEC® CW- und UW-Profile

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

Owner of the declaration
Profil-Vertrieb GmbH/PROTEKTORWERK Florenz Maisch GmbH & Co. KG
Viktoriastraße 58
D-76554 Gaggenau

Declaration number
EPD-PTW-20180156-ICB1-EN

Declared product / declared unit
1 running metre of MAXI-TEC® CW and UW profiles

This declaration is based on the product category rules:
Thin walled profiles and profiled panels of metal, 07.2014 (PCR checked and approved by the SVR)

Scope:
This Declaration applies for the MAXI-TEC® products manufactured by Profil-Vertrieb GmbH/PROTEKTORWERK Florenz Maisch GmbH & Co. KG in the Gaggenau plant. The Declaration is representative for the CW profiles 50-06, 75-06, 100-06 and UW profiles 50-06, 75-06 and 100-06.

Issue date
05.03.2019

Valid to
04.03.2024

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 standard /EN 15804/ serves as the core PCR

Independent verification of the declaration and data according to /ISO 14025:2010/

☐ internally ☒ externally

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

Dr. Alexander Röder
(Managing Director IBU)

Christina Bocher
(Independent verifier appointed by SVR)

2. Product

2.1 Product description / Product definition

MAXI-TEC® profiles are prefabricated, thin-walled profiles made of hot-dip coated slit strip.
The MAXI-TEC® CW 75-06 profile in a delivery length of 300 cm was selected as a representative product for all MAXI-TEC® profiles as it is an average product in terms of geometry and also displays the most popular shape and average values for all MAXI-TEC® profiles. Use of this profile can be regarded as a worst case scenario as it is heavier at 0.706 kg / running metre than the average weight of all profiles (approx. 0.648 kg / running metre).

For the placing on the market of the product in the EU/EFTA (with the exception of Switzerland) /Regulation (EU) No. 305/2011 (CPR)/ applies. The product has a declaration of performance taking into consideration /EN 14195/ 2015-03/ Metal framing components for gypsum board systems - Definitions, requirements and test methods; German version EN 14195:2014 and the CE-marking. For the application and use the respective national provisions apply.

Bezeichnung	EN	CPR
MAXI-TEC® 75-06	14195	305/2011
MAXI-TEC® CW 50-06	14195	305/2011
MAXI-TEC® CW 100-06	14195	305/2011
MAXI-TEC® UW 50-06	14195	305/2011
MAXI-TEC® UW 75-06	14195	305/2011
MAXI-TEC® UW 100-06	14195	305/2011

2.2 Application

MAXI-TEC® profiles are used as substructures for non-bearing single- or dual-layer partition walls and wall linings in accordance with /DIN 4103-1/ and /DIN 18183-1/. The constructions are suitable for use in normal air-conditioned interior rooms. Corrosion protection complies with /DIN EN 14195/ and /DIN 18182-1/.

2.3 Technical Data

Structural data

Name	Value	Unit
Thickness Sheet	0.6	mm
Grammage Unit area	4.55	kg/m²
Height height	73.8	mm
Flange width	47/49	mm
Profile weight	0,706	kg/running metre
Profile length	300	cm

Performance data of the product in accordance with the declaration of performance with respect to its essential characteristics according to Metal framing components for gypsum board systems - Definitions, requirements and test methods; German version EN 14195:2014.

2.4 Delivery status

The reference product is supplied in the following dimensions and quantities:

- Delivery length: 300 cm
- Bundle: 8 per bundle
- Large bundle: 15 bundles/large bundle
- Weight: 0,706 kg/running metre

The delivery status of the other CW profiles (CW 50-06 and CW 100-06) differs in terms of weight per running metre while UW profiles (UW 50-06, UW 75-06 and UW 100-06) differ as regards delivery length (400 cm) and weight per running metre.

MAXI-TEC® profiles meet the requirements according to /DIN 18182-1/ in terms of dimensions, sheet thickness, corrosion protection and tolerances. They are suitable as a substructure according to/DIN 18183-1/ and /DIN 18181/.

2.5 Base materials / Ancillary materials

MAXI-TEC® profiles are manufactured from hot-dip coated steel sheet as DX 51+Z, d= 0.6 mm (nominal) slit strip in accordance with /DIN EN 10346/ and /DIN EN 10143/ with Z 100 hot-dip galvanising. The slit strip is manufactured with an average of 40 % steel recycling share and delivered wound on coils (diameter 800 - 1800 mm).
Acetone ink is used for marking the profiles.
Volume, converted to 1 running metre of profile: 0.02 mg
During the profile manufacturing process of the profiles at PROTEKTOR, the following lubricant and cleaning agent is also used: water-based emulsion. Volume per production volume, converted to 1 running metre of profile: approx. 2 - 4 g

2.6 Manufacture

MAXI-TEC® profiles are manufactured from hot-dip coated steel slit strip in a cutting and forming process. The slit strip is added continuously in a conveyor process. The first step involves cutting and stamping the central section followed by continuous splaying by a suitable device. The folded area of the strip is rolled smooth and then the modified slit strip is roll-formed. This step is followed by marking by ink jet lettering before the profiles are cut to length in a shearing process and packed in bundles of 8.
The material is processed without waste.

2.7 Environment and health during manufacturing

Profil-Vertrieb GmbH/PROTEKTORWERK Florenz Maisch GmbH & Co. KG complies with all of the requisite national guidelines relating to health and environmental protection. There are no anticipated risks to the environment or negative impact on production personnel during manufacturing of MAXI-TEC® profiles.
Named measures do not go beyond legal requirements.

2.8 Product processing/Installation

MAXI-TEC® profiles are used as stud and runner profiles in substructures for non-bearing single- or dual-layer partition walls and wall linings in accordance with /DIN 4103-1/ and /DIN 18183-1/.
Processing/Installation involves the following steps:
1. MAXI-TEC® UW profiles are cut to length using suitable cutting tools (e.g. lever shears) and self-adhesive connection seals, e.g. made of mineral wool, are applied.
2. MAXI-TEC® UW profiles are secured to the floor and ceiling of the bearing structure using the appropriate plugs and spaced maximum one metre apart.
3a. If the MAXI-TEC® CW profiles have been delivered in the correct dimensions, they are inserted in the MAXI-TEC® UW profiles spaced 62.5 cm apart.
3b. In all other cases, MAXI-TEC® CW profiles are cut to the room height minus 1 cm using suitable cutting tools (e.g. lever shears) and inserted in the MAXI-TEC® UW profiles spaced 62.5 cm apart.
4. Subsequent cladding is applied in accordance with the processing guidelines supplied by the cladding manufacturer.
5. Cavity damping is provided for inside the wall in accordance with the requirements of fire safety and sound protection.

2.9 Packaging

The profiles are compiled in bundles of 8 and then usually bound using 2 polypropylene or polyethylene terephthalate tapes per bundle (1.0 metre of material required per bundle). Several smaller bundles form a large bundle and are strapped using 3 - 4 tapes made of PP or PET (approx. 5.6 - 8 metres of material required per large bündle).
All packaging materials used by PROTEKTOR are registered as recyclable materials at INTERSEROH DienstleistungsGmbH, Stollwerckstrasse 9a, 51149 Cologne.
Interseroh organises and co-ordinates collection of the transport packaging in retail, industry and trade, and directs it to an environmentally-friendly recycling circuit. In its capacity as the distributing company, Protektor therefore complies with the requirements of the Packaging Directive.

2.10 Condition of use

MAXI-TEC® profiles are fitted in non-bearing partition walls. These partition walls are used in rooms with normal climates and are not therefore exposed to any chemical loads.The mechanical loads are covered by /DIN 4103-1/.

2.11 Environment and health during use
When used as designated, there are no known modifications of the profiles or emissions of dangerous substances into the environment.

2.12 Reference service life
The life span of dry lining structures and/or dry lining profiles is ≥ 50 years in accordance with the /BNB Table/.

2.13 Extraordinary effects

Fire

Fire protection

Name	Value
Building material class /EN 13501/	A1
Burning droplets	A1 (thus d0)
Smoke gas development	A1 (thus s1)

Water
Despite galvanising, unforeseeable and longer impact by moisture can trigger a corrosion process (surface corrosion) caused by electrochemical decomposition of the zinc plating.

Mechanical destruction
Mechanical destruction of the profiles leads to deformation of the cross-section and can cause damage to the zinc plating.

2.14 Re-use phase
Dry lining profiles are connected purely mechanically with other building materials and structures. They are therefore easily de-constructed. Profiles made from hot-dip coated steel sheet or slit strip can be recycled infinitely.

2.15 Disposal
MAXI-TEC® profiles are governed by the waste code /17 04 05 / Iron and Steel in accordance with the European Waste Index.

2.16 Further information
www.protektor.de

3. LCA: Calculation rules

3.1 Declared Unit

Declared on declared unit

Name	Value	Unit
Conversion factor to 1 kg	1.416	-
Declared unit	1	lfm
Declared unit	0.155	m^2
Weight	0,706	kg/running metre

Explanation of selection of the reference product:
MAXI-TEC® profiles are produced in various product variants essentially distinguished by their profile height, delivery length and therefore weight per running metre as well as packaging. The MAXI-TEC® CW 75-06 profile with a delivery length of 300 cm was selected as the reference product as it is an average product in terms of geometry and also the product which is most used.
MAXI-TEC® CW profiles and MAXI-TEC® UW profiles are available which together form the substructure of partition walls. Both profile types are governed by the same applicable standards, production, transportation and recycling.
The reference profile selected also covers MAXI-TEC® UW profiles which are also offered in the three identical product widths but primarily only produced in delivery lengths of 400 cm.

3.2 System boundary

Type of EPD: cradle to gate with options

The following modules were considered for calculating the LCA:

- A1: Raw material supply and processing
- A2: Transport and delivery of the base material
- A3: Production process
- A4: Transporting the profiles to the construction site
- A5: Handling waste from product packaging
- C4: Landfilling
- D: Re-use, recovery and/or recycling potential

3.3 Estimates and assumptions
Wherever available, primary data was used for all production processes. Generic data was used for production of the materials used.
Assumptions were made for Modules A4 (Transport to the construction site), A5 (Handling waste from product packaging), C4 (Landfilling) and D (Re-use, recovery and/or recycling potential).MAXI-TEC® profiles are used throughout Europe with the result that an average transport distance of 467 km and average capacity of 85 % is assumed weighted by frequency.
MAXI-TEC® profiles are connected exclusively mechanically to other construction materials which enable clean segregation of materials during demolition or de-construction. Accordingly, a recycling rate of 90 % can be assumed for the profiles.
Landfilling is assumed for the remaining 10 % steel scrap.

3.4 Cut-off criteria
No cut-off criteria in terms of the primary data supplied by the manufacturer are used. Therefore even the smallest volumes of input materials (less than five per cent by mass) being taken into account using generic data in the LCA.

3.5 Background data
The /GaBi 8/ (comprehensive analysis) software system developed by thinkstep AG was used for analysing the LCA and/or life cycle of MAXI-TEC® profiles. The data sets contained herein are either industrial data (e.g. worldsteel) or from thinkstep AG.

3.6 Data quality

A generic average data set was filed for the lubricating oils and greases used. The production of the hot-dip coated steel sheet entails. 40% secondary steel. The aggregate generic data set for hot-dip coated steel sheet only displays a recyclate share of 11.8 % however. Owing to the low recyclate share in the data set used and consideration of the general process steps for manufacturing hot-dip coated steel sheet, the data set used can be regarded as a worst case scenario. The corresponding data sets were available for all other preliminary products used. On account of the average data set for various oils and non-consideration of the recyclate share (40 %), the data quality can be regarded as average. The age of the used background data (2004-2017) from industry and thinkstep is less than 15 years and can be considered representative for the period under review.

3.7 Period under review

2017 was selected as the period of review. All internal data was collated for this period.

3.8 Allocation

No co-products arise during the manufacture of MAXI-TEC® profiles which is why no allocations were necessary. Credits are awarded for both recycling the steel profiles and for thermal and energetic utilisation of packaging materials and these 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.

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4. LCA: Scenarios and additional technical information

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

Transport to site (A4)

Name	Value	Unit
Transport distance	467	km
Capacity utilisation (including empty runs)	85	%

Construction installation process (A5)

Name	Value	Unit
Output substances following waste treatment on site	0.019	kg

Life Span

Name	Value	Unit
Life Span (according to BBSR)	50	a

Landfilling (C4)

Name	Value	Unit
Steel profile landfilling rate	10	%

Re-use, recovery and recycling potential (D), relevant scenario information

Name	Value	Unit
Steel profile recycling rate	90	%

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	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 running metre MAXI-TEC®

Parameter	Unit	A1-A3	A4	A5	C4	D
Global warming potential	[kg CO_2-Eq.]	1.49E+0	5.86E-3	5.37E-2	1.69E-3	-8.63E-1
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	1.22E-7	1.23E-16	5.23E-11	3.75E-16	4.63E-9
Acidification potential of land and water	[kg SO_2-Eq.]	3.97E-3	1.44E-5	4.74E-6	9.89E-6	-1.66E-3
Eutrophication potential	[kg $(PO_4)^{3-}$-Eq.]	3.74E-4	3.51E-6	8.20E-7	1.36E-6	-1.27E-4
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	5.77E-4	-5.26E-6	3.87E-7	7.85E-7	-3.86E-4
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	2.54E-5	6.12E-10	2.72E-10	6.36E-10	-2.41E-6
Abiotic depletion potential for fossil resources	[MJ]	1.99E+1	7.84E-2	8.90E-3	2.18E-2	-8.51E+0

RESULTS OF THE LCA - RESOURCE USE: 1 running metre MAXI-TEC®

Parameter	Unit	A1-A3	A4	A5	C4	D
Renewable primary energy as energy carrier	[MJ]	7.52E-1	5.29E-3	2.97E-4	2.81E-3	4.51E-1
Renewable primary energy resources as material utilization	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Total use of renewable primary energy resources	[MJ]	7.52E-1	5.29E-3	2.97E-4	2.81E-3	4.51E-1
Non-renewable primary energy as energy carrier	[MJ]	2.10E+1	7.86E-2	8.47E-1	2.26E-2	-8.25E+0
Non-renewable primary energy as material utilization	[MJ]	0.00E+0	0.00E+0	-8.36E-1	0.00E+0	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	2.10E+1	7.86E-2	1.11E-2	2.26E-2	-8.25E+0
Use of secondary material	[kg]	0.00E+0	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	0.00E+0
Use of non-renewable secondary fuels	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Use of net fresh water	[m^3]	3.48E-3	6.14E-6	1.11E-4	4.31E-6	1.06E-3

RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 running metre MAXI-TEC®

Parameter	Unit	A1-A3	A4	A5	C4	D
Hazardous waste disposed	[kg]	2.93E-2	0.00E+0	0.00E+0	0.00E+0	5.08E-4
Non-hazardous waste disposed	[kg]	6.54E+0	4.24E-4	1.42E-3	2.16E-1	1.15E-1
Radioactive waste disposed	[kg]	2.59E-4	9.49E-8	6.42E-7	0.00E+0	1.48E-5
Components for re-use	[kg]	0.00E+0	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	5.52E-1
Materials for energy recovery	[kg]	0.00E+0	0.00E+0	1.90E-2	0.00E+0	0.00E+0
Exported electrical energy	[MJ]	0.00E+0	0.00E+0	1.00E-1	0.00E+0	0.00E+0
Exported thermal energy	[MJ]	0.00E+0	0.00E+0	3.30E-1	0.00E+0	0.00E+0

6. LCA: Interpretation

The various MAXI-TEC® profiles differ in terms of the volume of hot-dip coated steel sheet used (from -26 % to +9 %) and the volume of packaging material required per running metre (-21 % to +68 %). In the case of all profiles except UW 100-06 and CW 100-06, the deviations from the reference product in the estimated impact results depend on the volume of hot-dip coated steel sheet used. In the case of MAXI-TEC® UW 100-06 profiles and CW 100-06 profiles, the deviating packaging volume also has an influence on the results.

	Mass	GWP	ODP	AP	EP	POCP	ADPE	ADPF
Unit	[kg/lfm]	[kg CO2-eq.]	[kg CFC11-eq.]	[kg SO2-eq.]	[kg PO43-eq.]	[kg Ethen eq.]	[kg Sb eq.]	[MJ]
CW 75-06	0.706 kg	6.91E-01	1.27E-07	2.34E-03	2.53E-04	1.87E-04	2.30E-05	1.15E+01
CW 50-06	-10%	-12%	-17%	-11%	-10%	-12%	-12%	-12%
CW 100-06	9%	13%	36%	13%	12%	14%	12%	12%
UW 50-06	-26%	-34%	-28%	-33%	-33%	-34%	-34%	-34%
UW 75-06	-16%	-17%	-8%	-17%	-16%	-17%	-18%	-18%
UW 100-06	-7%	13%	36%	13%	12%	14%	12%	12%

In order to interpret the results of the LCA, both the aggregate indicators of the Life Cycle Inventory Analysis and the estimated impact were analysed in a dominance analysis.
The greatest share of energy requirements accounting for 22 MJ is attributed to production (A1-A3), whereby production of the raw materials (A1), especially hot-dip coated steel sheet with its very energy-intensive production process is of relevance with approx. 92 %. Transporting raw materials and profiles each accounted for 1 % of energy expenses (A2 & A4). Approx. 7 % of energy requirements within production was required for manufacturing the packaging materials polypropylene and polyethylene terephthalate (A3); the remaining energy requirements in category A3 are distributed across electricity and compressed air in-house at PROTEKTORWERK. Approx. 8 MJ can be entered as credits for recycling the steel profiles and incinerating the packaging material.
The environmental impact is outlined in the impact categories above. Despite a recycling rate of 90 %, the credits in all impact categories are lower than the environmental impact by production of this volume of steel profiles (with the exception of the Ozone Depletion Potential (ODP) impact category). The credits in particular are lower as environmental impact ensues even during recycling of the steel which in turn reduces the credit.
The greatest share of Global Warming Potential (GWP) is accounted for by production, where just as for overall energy requirements, production of hot-dip coated steel sheet (A1, 92 %) and production of packaging materials (A3, 4 %) is the driving factor. Pit coal is largely used as an energy carrier for energy-intensive steel production which has a strong impact on the GWP. Approx. -56 % of the GWP is also attributed to recycling. This credit is due to recycling the steel profiles and emissions avoided for primary production of steel. Incineration of the packaging materials results in another credit which is attributable to the heat and electricity offtake substituting provision by fossil fuels.
In the case of the ODP, production of hot-dip coated steel (A1) accounts for the greatest share of environmental impact. ODP is the only impact category where a positive contribution arises in Module D. This contribution arises from the difference between the blast furnace route for primary production and the electric arc furnace route for recycling steel for determining the credit as the electric arc furnace route emits more ozone-destroying substances than the blast furnace route.
The Acidification Potential of soil and water (AP) as well as the Eutrification Potential (EP) are caused by steel production on the one hand and by the credit awarded for avoiding primary production of steel on the other.
In the case of the Photochemical Ozone Creation Potential (POCP), production is the main cause (approx. 97 %). Relief is provided by recycling the steel (-67 %).
The Abiotic Depletion Potential non-fossil Resources (ADPE) is primarily determined by the requirements of ores for manufacturing the steel.
The Abiotic Depletion Potential Fossil Fuels (ADPF) is primarily determined by the fossil energy carriers required during steel manufacturing. Pit coal in particular is the main driver (approx. 75 % of steel production).
Net use of fresh water is dominated by the manufacturing phase (75 %) and in particular by the production of plastic packaging accounting for 65 %, whereby both the polypropylene and polyethylene terephthalate used have the greatest influence in Module A3 due to their high level of water consumption during the production process.

A recyclate share of 11.8 % is filed in the generic data set for manufacturing hot-dip coated steel sheet. But the sheet steel used comprises 40 % secondary steel. Raising the share of secondary steel in the calculations would reduce the environmental impact for the production processes. But to the same extent, the credits from Module D would also be reduced for all impact categories (with the exception of the ODP impact category). The value indicated outlines a worst case scenario for the ODP. It can be assumed that the results would not change significantly.

7. Requisite evidence

7.1 Requirements for partition walls

Metal partition walls featuring MAXI-TEC® profiles comply with the requirements of /DIN 4103-1/. Evidence of this is provided by the expert report /Certificate No. B-VHT-408-10/Pf/ by the acknowledged test, supervision and certification office VHT VERSUCHSANSTALT FÜR HOLZ-UND TROCKENBAU, Annastrasse 18, 64285 Darmstadt

7.2 Sound protection and fire safety

Dry lining systems featuring MAXI-TEC® profiles were tested in terms of sound protection and fire safety accordance with the specifications outlined in the Building Regulation List as per European and German standards. Tests were performed by recognised test institutes. These were: MFPA Leipzig GmbH, EMPA in Dübendorf, Switzerland, and ITA Ingenieurgesellschaft für technische Akustik mbH in Wiesbaden.

VOC Emissionen

Name	Value	Unit
Overview of Results (28 Tage)	-	µg/m³
Overview of Results (28 days)	-	µg/m³
TVOC (C6 - C16)	-	µg/m³
TVOC (C6 - C16)	-	µg/m³
Sum SVOC (C16 - C22)	-	µg/m³
Sum SVOC (C16 - C22)	-	µg/m³
R (dimensionless)	-	-
R (dimensionless)	-	-
VOC without NIK	-	µg/m³
VOC without NIK	-	µg/m³
Carcinogenic Substances	-	µg/m³
Carcinogenic Substances	-	µg/m³

AgBB overview of results (3 days [µg/m³])

Name	Value	Unit
TVOC (C6 - C16)	-	µg/m³
Sum SVOC (C16 - C22)	-	µg/m³
R (dimensionless)	-	-
VOC without NIK	-	µg/m³
Carcinogenic Substances	-	µg/m³

8. References

/IBU 2016/
IBU (2016): General Programme Instructions for the Preparation of EPDs at the Institut Bauen und Umwelt e.V., Version 1.1 Institut Bauen und Umwelt e.V., Berlin.
www.ibu-epd.de

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

/EN 15804/
/EN 15804:2012-04+A1 2013/, Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

BNB Table: 2017, BBSR Table "Service life of components for life cycle analysis in accordance with the Sustainable Building evaluation system"

Certificate Nr. B-VHT-408-10/Pf: Eignung als Unterkonstruktion für Metallständerwände nach DIN 18183-1:2009-05 (internal specification: available upon request)

DIN 18181: 2008-10, Gypsum plasterboards for building construction – Application

DIN 18182-1: 2015-11, Accessories for use with gypsum plasterboards – Part 1: Steel plate sections

DIN 18183-1: 2018-05, Partitions and wall linings with gypsum boards on metal framing – Part 1: Cladding with gypsum plasterboards

DIN 4103-1: 2015-06, Internal non-load-bearing partitions – Part 1: Requirements, verification

DIN EN 10143: 2015-06, Continuously hot-dip coated steel sheet and strip – Tolerances on dimensions and shape

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Institut Bauen und Umwelt e.V.
Panoramastr. 1
10178 Berlin
Germany

Tel +49 (0)30 3087748- 0
Fax +49 (0)30 3087748- 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

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

Tel +49 (0)30 - 3087748- 0
Fax +49 (0)30 – 3087748 - 29
Mail info@ibu-epd.com
Web **www.ibu-epd.com**

Author of the Life Cycle Assessment
TÜV Rheinland LGA Products GmbH
Am Grauen Stein 29
51105 Köln
Germany

Tel +49 (0)911 655 5225
Fax +49 (0)911 655 5226
Mail service@de.tuv.com
Web **www.tuv.com**

Owner of the Declaration
Profil-Vertrieb
GmbH/PROTEKTORWERK Florenz
Maisch GmbH & Co. KG
Viktoriastraße 58
76554 Gaggenau
Germany

Tel +49 (0)7225 977 0
Fax +49 (0)7225 977 111
Mail info@protektor.com
Web **www.protektor.com**