

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

Owner of the Declaration	
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-KNB-20210240-CBC1-EN
Issue date	21.03.2022
Valid to	20.03.2027

Gypsum plasters Bulgips Start, MP75, MP75 L, MP75 SL  
and Rotband  
Knauf Radika AD Debar

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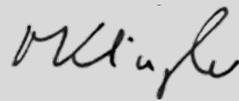


ECO PLATFORM

EPD  
VERIFIED



## General Information

<p>Knauf Radika AD</p>	<p>Gypsum plasters Bulgips Start, MP75, MP75 L, MP75 SL and Rotband</p>						
<p><b>Programme holder</b> IBU – Institut Bauen und Umwelt e.V. Panoramastr. 1 10178 Berlin Germany</p>	<p><b>Owner of the declaration</b> Knauf Radika AD 8-mi Septemvri bb 1250 Debar Republic of North Macedonia</p>						
<p><b>Declaration number</b> EPD-KNB-20210240-CBC1-EN</p>	<p><b>Declared product / declared unit</b> 1 kg gypsum plaster dry mix</p>						
<p><b>This declaration is based on the product category rules:</b> Mineral factory-made mortar, 11.2017 (PCR checked and approved by the SVR)</p>	<p><b>Scope:</b> This EPD represents the weighted average of the following five gypsum plaster dry mix products: - Bulgips Start; - MP75; - MP75 L; - MP75 SL; - ROTBAND.</p>						
<p><b>Issue date</b> 21.03.2022</p>	<p>All plasters are manufactured by: Knauf Radika AD, 8-mi Septemvri bb 1250 Debar, Republic of North Macedonia.</p>						
<p><b>Valid to</b> 20.03.2027</p>	<p>The LCA considers specific information provided by the manufacturer and suppliers of components exclusively for the cradle-to-gate production stage. The end-of-life stage is modelled based on a developed scenario.</p>						
<p>  Dipl. Ing. Hans Peters (chairman of Institut Bauen und Umwelt e.V.)</p>	<p>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.</p>						
<p>  Dr. Alexander Röder (Managing Director Institut Bauen und Umwelt e.V.)</p>	<p><b>Verification</b></p> <table border="1"> <tr> <td colspan="2">The standard EN 15804 serves as the core PCR</td> </tr> <tr> <td colspan="2">Independent verification of the declaration and data according to ISO 14025:2010</td> </tr> <tr> <td><input type="checkbox"/> internally</td> <td><input checked="" type="checkbox"/> externally</td> </tr> </table> <p>  Matthias Klingler (Independent verifier)</p>	The standard EN 15804 serves as the core PCR		Independent verification of the declaration and data according to ISO 14025:2010		<input type="checkbox"/> internally	<input checked="" type="checkbox"/> externally
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<input type="checkbox"/> internally	<input checked="" type="checkbox"/> externally						

## Product

### Product description/Product definition

Knauf gypsum plasters are factory-made pre-mixed dry gypsum plasters produced in accordance with EN 13279. All declared plasters consist of mineral binders (mainly natural gypsum and hydrated lime in a small amount), fillers and additives. The declaration refers to the declared unit of 1 kg of an average gypsum plaster

dry mix product with weighted average density of 870 kg/m<sup>3</sup>.

The following products are included in this EPD:

- Bulgips Start;
- MP75;
- MP75 L;
- MP75 SL;
- ROTBAND.

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 13279-1:2008* Gypsum binders and gypsum plasters - Part 1: Definitions and requirements and the CE-marking. For the application and use the respective national provisions apply.

### Application

The specific recommended applications of the products are as follows:

- **Bulgips Start:** intended for indoor machine application as two-layer plaster in various residential building systems (hotels, hospitals, administrative premises), including premises with normal air humidity acc. to *DIN 18550-1* and *DIN 18550-2*. Bulgips Start can be applied on walls and ceilings on various substrates: porous concrete, silicate masonry units, pumice, concrete masonry, mixed masonry, gypsum fibreboards or stone walls.

- **MP75, MP75 L and MP75 SL:** intended for indoor machine application to create smooth surfaces on walls and ceilings. It can be applied in one layer on all types of masonry, concrete and stable plasterable foundations; in all premises with normal humidity, incl. domestic kitchens and bathrooms; as a base for subsequent finishing or wallpapers, as a basis for tiles and finishing plasters.

- **ROTBAND:** intended for indoor manual application to be used on concrete slabs, walls, pre-cast concrete elements and on all plasterable substrates. The product can be used in humid premises (kitchens, bathrooms) acc. to *DIN V 18550*.

### Technical Data

The following technical information based on DoPs of the delivered products is relevant for the declared products:

### Constructional data

Name	Value	Unit
Gross density	730-1000	kg/m <sup>3</sup>
Surface hardness	>5.0	N/mm <sup>2</sup>
Compressive strength	2	N/mm <sup>2</sup>
Flexural strength	1	N/mm <sup>2</sup>
Thermal conductivity	0.25 - 0.35	W/(mK)
Water vapour diffusion resistance factor - $\mu$ (dry/wet)	10/6	

*Regulation (EU) No.305/2011* applies for placing of the declared products on the market within European union/European Free Trade Association (EU/EFTA). KNAUF gypsum plasters are required to have declarations of performance and CE marking.

### Base materials/Ancillary materials

The primary constituents of the gypsum plasters are natural gypsum (70 % on a weighted average, varying between 60 % and 90 %) and limestone filler (26 % on a weighted average, varying between 5 % and 37 %). In addition, expanded perlite (<3 % on average), hydrated lime (<1.5 % on average) and modifying additives (<1 %) are included in the mix.

This product contains the following substances listed in *the candidate list* (date: 24.06.2021) exceeding 0.1 percentage by mass:

- Calcium dihydroxide, CAS No. 1305-62-0 (<1.5 %).

### Reference service life

No reference service life is determined in accordance with *EN ISO 15686-1:2011*. A service life of >50 years can be considered for the gypsum plasters in accordance with the Bundesinstitut für Bau-, Stadt- und Raumforschung (*BBSR*) table "Service lives of components for life cycle assessment according to BNB".

## LCA: Calculation rules

### Declared Unit

The declared unit is 1 kg of KNAUF gypsum plaster as an average of KNAUF gypsum plaster Bulgips Start, MP75, MP75 L, MP75 SL and ROTBAND.

### Declared unit

Name	Value	Unit
Declared unit	1	kg
Gross density	870	kg/m <sup>3</sup>

The impact results represent the production of a weighted average gypsum plaster. The products included in the declaration use the same raw materials and the same production technology, so the variance of results comes only from the different proportions of ingredients. For Bulgips Start and MP75 the impacts are by 5 % smaller than declared weighted average values for most indicators except for GWP-luluc, ADPE, EP-terrestrial, ODP and POCP where the variance is less than 10 %. For MP75 L and ROTBAND the variance is within 1-2 % on all indicators. The impacts of MP75 SL are between 10 % and 15 % higher than the declared results. The highest variance is on ADPE, so this indicator should be handled with care.

The data on supply of raw materials and production process is provided by Knauf Radika AD, so processes with the highest contributions are representative for the geographical conditions at the manufacturing plant. Where information is unavailable or unknown, it is modelled with background datasets preferably for the European context

### System boundary

This EPD covers the production stage, the end-of-life stage and module D in accordance with *EN 15804*, i.e. the scope is cradle-to-gate with options. The production stage (modules A1-A3) includes the production of raw materials and their transport to the manufacturing site, production processes, packaging and the preparation for delivery, as well as the use of electricity, fuels and water. The end-of-life stage (modules C1-C4) includes the processes of dismantling/demolition of the building, transport of gypsum plaster waste, waste processing and disposal.

### 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.

To model the LCA of the plasters, the *ecoinvent* v3.7.1 database is used for background data.

## LCA: Scenarios and additional technical information

### Characteristic product properties

#### Information on biogenic Carbon

The biogenic carbon content is calculated for the product itself and herein the weighted average values is declared (<0.2 %). The biogenic carbon content from packaging is calculated from the associated mass of paper packaging and wooden pallets.

#### Information on describing the biogenic Carbon Content at factory gate

Name	Value	Unit
Biogenic carbon content in product	0.0012	kg C

Module A5 is not declared, so the biogenic carbon of the packaging is not included in the results of A1-A3.

This declaration covers the product stage and the end-of-life stage of the gypsum plasters and does not provide information about the installation and use stages of the building.

Additional information for module A5 is provided below regarding the accompanying packaging of the plasters.

#### Installation into the building (A5)

Additional technical scenario information on the amount of packaging materials:

All plasters are packed in paper bags of 30 kg except for MP75 SL, which is packed in bags of 25 kg. The mass of each paper bag varies slightly, but on average the paper packaging is 4.4 g per 1 kg gypsum plaster. Plasters are packed on pallets and covered by PE foil and the mass of the foil is 0.62 g per 1 kg plaster. The usual mass on a pallet is 1050 kg for Bulgips Start, MP75, MP75 L and ROTBAND, and 1000 kg for MP74 SL. The wooden material associated with 1 kg of plaster is on average 24 g per 1 kg plaster.

Name	Value	Unit
Mass of packaging per 1 kg plaster	29	g

#### Reference service life

The service life of the gypsum plasters is declared in accordance with *BNB*.

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

#### End of life (C1-C4)

The deconstruction/demolition of the plastered/rendered walls with gypsum plaster is considered as a part of the entire demolition process of the whole building. There are no specific demolition/deconstruction methods, applied in Republic of North Macedonia, with regards to the gypsum plasters, because during the demolition process the major share of plaster is self-detached and

the rest contribute to the C&DW coming from of the substrate material.

Name	Value	Unit
Collected separately EWC 17 08 02	0.75	kg
Collected as mixed construction waste EWC 17 01 01 and/or 17 01 02	0.25	kg
Landfilling	1	kg

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

There are no available practices for use of the waste gypsum from gypsum plasters in Republic of North Macedonia at the present moment, so this material cannot be linked to other systems using gypsum. This is why, zero impacts for module D are assumed.

## LCA: Results

Disclaimer:

EP-freshwater: This indicator has been calculated as “kg P eq” as required in the characterization model (EUTREND model, Struijs et al., 2009b, as implemented in ReCiPe; <http://eplca.jrc.ec.europa.eu/LCDN/developerEF.xhtml>).

### DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = 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	ND	ND	ND	ND	MNR	MNR	MNR	ND	ND	X	X	X	X	X

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 kg gypsum plaster dry mix (weighted average)

Core Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Global warming potential - total	[kg CO <sub>2</sub> -Eq.]	2.95E-1	0.00E+0	7.81E-3	7.50E-3	1.11E-1	0.00E+0
Global warming potential - fossil fuels	[kg CO <sub>2</sub> -Eq.]	3.09E-1	0.00E+0	7.81E-3	7.49E-3	1.11E-1	0.00E+0
Global warming potential - biogenic	[kg CO <sub>2</sub> -Eq.]	-1.17E-3	0.00E+0	0.00E+0	9.00E-7	7.52E-8	0.00E+0
GWP from land use and land use change	[kg CO <sub>2</sub> -Eq.]	4.50E-6	0.00E+0	5.73E-8	1.79E-8	2.59E-9	0.00E+0
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	6.93E-8	0.00E+0	1.72E-9	1.60E-9	2.38E-10	0.00E+0
Acidification potential, accumulated exceedance	[mol H <sup>+</sup> -Eq.]	2.42E-3	0.00E+0	1.69E-5	1.30E-5	1.89E-6	0.00E+0
Eutrophication, fraction of nutrients reaching freshwater end compartment	[kg P-Eq.]	5.10E-4	0.00E+0	5.50E-7	3.40E-7	4.01E-8	0.00E+0
Eutrophication, fraction of nutrients reaching marine end compartment	[kg N-Eq.]	3.16E-4	0.00E+0	2.31E-6	1.76E-6	2.50E-7	0.00E+0
Eutrophication, accumulated exceedance	[mol N-Eq.]	2.48E-3	0.00E+0	2.45E-5	1.88E-5	2.72E-6	0.00E+0
Formation potential of tropospheric ozone photochemical oxidants	[kg NMVOC-Eq.]	8.17E-4	0.00E+0	1.23E-5	1.03E-5	1.51E-6	0.00E+0
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	2.60E-5	0.00E+0	2.00E-7	1.15E-8	1.69E-9	0.00E+0
Abiotic depletion potential for fossil resources	[MJ]	7.38E+0	0.00E+0	1.12E-1	1.01E-1	1.50E-2	0.00E+0
Water (user) deprivation potential, deprivation-weighted water consumption (WDP)	[m <sup>3</sup> world-Eq deprived]	4.14E+1	0.00E+0	1.03E-1	4.47E-2	3.22E-3	0.00E+0

### RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 kg gypsum plaster dry mix (weighted average)

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Renewable primary energy as energy carrier	[MJ]	5.35E-1	0.00E+0	1.54E-3	8.14E-4	8.22E-5	0.00E+0
Renewable primary energy resources as material utilization	[MJ]	1.26E-1	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Total use of renewable primary energy resources	[MJ]	6.62E-1	0.00E+0	1.54E-3	8.14E-4	8.22E-5	0.00E+0
Non-renewable primary energy as energy carrier	[MJ]	5.80E+0	0.00E+0	1.15E-1	1.03E-1	1.51E-2	0.00E+0
Non-renewable primary energy as material utilization	[MJ]	2.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Total use of non-renewable primary energy resources	[MJ]	7.80E+0	0.00E+0	1.15E-1	1.03E-1	1.51E-2	0.00E+0
Use of secondary material	[kg]	2.97E-3	0.00E+0	5.59E-5	5.11E-5	7.46E-6	0.00E+0
Use of renewable secondary fuels	[MJ]	1.16E-2	0.00E+0	5.36E-5	3.61E-5	2.02E-6	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	0.00E+0
Use of net fresh water	[m <sup>3</sup> ]	3.53E-3	0.00E+0	7.75E-6	4.07E-6	4.20E-7	0.00E+0

### RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 kg gypsum plaster dry mix (weighted average)

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed	[kg]	2.79E-3	0.00E+0	1.31E-4	1.15E-4	1.64E-5	0.00E+0
Non-hazardous waste disposed	[kg]	1.70E-1	0.00E+0	5.62E-3	1.53E-3	1.75E-4	0.00E+0
Radioactive waste disposed	[kg]	1.48E-5	0.00E+0	7.80E-7	7.20E-7	1.10E-7	0.00E+0
Components for re-use	[kg]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Materials for recycling	[kg]	4.00E-2	0.00E+0	0.00E+0	4.97E-5	7.33E-6	0.00E+0
Materials for energy recovery	[kg]	1.20E-4	0.00E+0	0.00E+0	3.70E-7	2.27E-8	0.00E+0
Exported electrical energy	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0
Exported thermal energy	[MJ]	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0	0.00E+0

### RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 kg gypsum plaster dry mix (weighted average)

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Potential incidence of disease due to PM emissions	[Disease Incidence]	8.66E-9	0.00E+0	1.60E-6	8.79E-7	4.25E-7	0.00E+0
Potential Human exposure efficiency relative to U235	[kBq U235-Eq.]	2.92E-2	0.00E+0	1.82E+0	3.59E-1	5.78E-1	0.00E+0
Potential comparative toxic unit for ecosystems	[CTUe]	2.74E-2	0.00E+0	1.21E+1	4.13E-1	2.47E+0	0.00E+0
Potential comparative toxic unit for humans - cancerogenic	[CTUh]	8.37E-11	0.00E+0	7.16E-9	1.68E-9	3.47E-9	0.00E+0
Potential comparative toxic unit for humans - not cancerogenic	[CTUh]	1.49E-8	0.00E+0	4.47E-7	8.14E-8	1.29E-7	0.00E+0
Potential soil quality index	[-]	4.28E+0	0.00E+0	3.93E+2	4.28E+1	6.94E+1	0.00E+0

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 nor 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 fossil resources”, “abiotic depletion potential for non-fossil resources”, “water (user) deprivation potential”, “deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans - cancer effects”, “potential comparative toxic unit for humans – non-cancer effects”, “potential soil quality index”. 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.

## References

### Standards

#### DIN 18550-1

DIN 18550-1 Putz und Putzsysteme - Ausführung

#### DIN 18550-2

DIN 18550-2 Planung, Zubereitung und Ausführung von Außen- und Innenputzen - Teil 2: Ergänzende Festlegungen zu DIN EN 13914-2:2016-09 für Innenputze

#### DIN V 18550

DIN V 18550 Putz und Putzsysteme - Ausführung

#### EN ISO 10456

EN ISO 10456:2008 Building materials and products - Hygrothermal properties - Tabulated design values and procedures for determining declared and design thermal values (ISO 10456:2007)

#### EN 13279-1

EN 13279-1:2008 Gypsum binders and gypsum plasters - Part 1: Definitions and requirements

#### BDS EN 13501-1

BDS EN 13501-1:2007+A1:2009 Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

#### EN ISO 14025

EN ISO 14025:2006, Environmental management – Type III environmental declarations – Principles and procedure

#### EN ISO 14040

EN ISO 14040:2006, Environmental management -- Life cycle assessment -- Principles and framework

#### EN ISO 14044

EN ISO 14044:2006, Environmental management – Life cycle assessment – Requirements and guidelines

#### EN ISO 15686-1:2011

Buildings and constructed assets — Service life planning — Part 1: General principles and framework

#### EN 15804

EN 15804:2012+A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

#### EN 15942

EN 15942:2011, Sustainability of construction- Environmental product declarations. Communication format business-to-business

### Further References

#### BBSR

Nutzungsdauern von Bauteilen für Lebenszyklusanalysen nach Bewertungssystem Nachhaltiges Bauen (BNB) – BBSR table "Service lives of components for life cycle assessment according to BNB" - [https://www.nachhaltigesbauen.de/fileadmin/pdf/baustoff\\_gebauedaten/BNB\\_Nutzungsdauern\\_von\\_Bauteilen\\_2017-02-24.pdf](https://www.nachhaltigesbauen.de/fileadmin/pdf/baustoff_gebauedaten/BNB_Nutzungsdauern_von_Bauteilen_2017-02-24.pdf)

#### C&DW

Construction and demolition waste

#### DoP Bulgips Start

Declaration of Performance No. 0010\_Bulgips\_Start\_2015-2-2 for gypsum plaster Bulgips Start

#### DoP MP75

Declaration of Performance No. 0010\_MP75\_2015 for gypsum plaster MP75

#### DoP MP75 L

Declaration of Performance No. 0010\_MP75L\_2015 for gypsum plaster MP75 L

#### DoP MP75 SL

Declaration of Performance No. 0093  
MP\_75\_SL\_2014-01-23 for gypsum plaster MP75 SL

#### **DoP ROTBAND**

Declaration of Performance No.  
0010\_ROT BAND\_2015 for gypsum plaster ROTBAND

#### **ECHA 2019**

Candidate List of substances of very high concern for Authorisation, editor: European Chemicals Agency (ECHA), Helsinki (FI), last update 25/02/2019, <https://echa.europa.eu/candidate-list-table>

#### **ecoinvent**

database ecoinvent v.3.7.1, The Ecoinvent Association, 2021

#### **ECRP 112**

European Commission Radiation protection 112: Radiological Protection Principles concerning the Natural Radioactivity of Building Materials, 1999

#### **EWC 17 01 01**

EWC 17 01 01 Concrete

#### **EWC 17 01 02**

EWC 17 01 02 Bricks

#### **EWC 17 08 02**

EWC 17 08 02 Gypsum-based construction materials other than those mentioned in 17 08 01

#### **Gehrcke**

Gehrcke, K.; Hoffmann, B.; Schkade, U.; Schmidt, V.; Wichterley, K; Natürliche Radioaktivität in Baumaterialien und die daraus resultierende Strahlenexposition Fachbereich Strahlenschutz und Umwelt, Bundesamt für Strahlenschutz Salzgitter, November 2012, [http://doris.bfs.de/jspui/bitstream/urn:nbn:de:0221-201210099810/3/BfS\\_2012\\_SW\\_14\\_12.pdf](http://doris.bfs.de/jspui/bitstream/urn:nbn:de:0221-201210099810/3/BfS_2012_SW_14_12.pdf)

#### **IBU 2018**

IBU Product Category Rules (PCR) for Building-Related Products and Services Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report–v. 1.7 (IBU PCR Part A–v.1.7, March, 2018)

#### **IBU 2021**

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](http://www.ibu-epd.com)

#### **IBU PCR Part B**

IBU PCR Guidance-Texts for Building-Related Products and Services Part B: Requirements on the EPD for Mineral factory-made mortar (IBU PCR Part B: Mineral factory-made mortar v. 1.6, 30.11.2017)

#### **IEA 2021**

International Energy Agency, [www.iea.org](http://www.iea.org) (last visited June 10, 2021)

#### **Lab report 473/19**

Лабораториски Извештај бр. 473/19 од извршени мерења на емисии во воздухот од "КНАУФ - РАДИКА" АД Дебар, 2019 (Laboratory Report no. 473/19 from performed measurements of air emissions from "KNAUF - RADIKA" AD Debar), in Macedonian

#### **Lab report 475/19**

Лабораториски Извештај бр. 475/19 од извршени анализи на отпадна вода од "КНАУФ - РАДИКА" АД Дебар, 2019 (Laboratory Report no. 475/19 from performed analyzes of wastewater from "KNAUF - RADIKA" AD Debar), in Macedonian

#### **openLCA**

openLCA software for life cycle assessment, v. 1.10.2

#### **Regulation 305**

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

#### **Scherer**

Fraunhofer-Institut für Bauphysik IBP, Holzkirchen Prüfbericht Querschnittsuntersuchung zum Emissionspotenzial an flüchtigen organischen Verbindungen von Gipsbauteilen und Gipsprodukten des Wohninnenraums (Juli 2010) Veröffentlicht auf: [www.gips.de](http://www.gips.de) (Rubrik: Forschungsvereinigung, Projekte, 2010)

#### **SDS Bulgips Start**

Data safety sheet for gypsum plaster Bulgips Start v.1 – 05.05.2017

#### **SDS MP75**

Data safety sheet for gypsum plaster MP75 v.1 – 05.05.2017

#### **SDS MP75 L**

Data safety sheet for gypsum plaster MP75 L v.1 – 05.05.2017

#### **SDS MP75 SL**

Data safety sheet for gypsum plaster MP75 SL v.1 – 05.05.2017

#### **SDS ROTBAND**

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