



BREEAM INTERNATIONAL NEW CONSTRUCTION 2016

PRODUCT DATA FOR CERTIFICATION

MINERAL PLUS

BREEAM (Building Research Establishment Environmental Assessment Methodology) International New Construction¹ is a voluntary standard that defines high performance green buildings which are healthier, more environmentally responsible and more profitable structures. Using independent assessors, BREEAM examines criteria covering a range of issues in sections that evaluate: management processes, health and wellbeing, energy, transport, water, materials, waste, land use and ecology, pollution and innovation.

KNAUF INSULATION products can put you on the right track for the highest result for BREEAM certification.

BREEAM Credit Category code	Assessment criteria and definition	Knauf Insulation Products contribution	Contributes towards
Hea 02 Indoor air quality	<p><i>Emissions from building products:</i> the insulation materials are one of the 5 product types that needs to meet the emission limits. The following requirements are of application for insulation products: Formaldehyde $\leq 0.06 \text{ mg/m}^3$; Total volatile Organic Compounds $\leq 1.0 \text{ mg/m}^3$; Carcinogens category 1A and B $\leq 0.001 \text{ mg/m}^3$</p>	<p>MINERAL PLUS products are in compliance with the requirements as without added formaldehyde and certified Eurofins Gold² for Indoor Air Comfort, see annexe 1.</p> 	1 credit
	<p><i>Post-construction indoor air quality measurement:</i> the total volatile organic compound and formaldehyde are measured and reported (thresholds for averaged formaldehyde concentration level $\leq 100\mu\text{g/m}^3$ over 30 minutes and for averaged TVOC $\leq 300\mu\text{g/m}^3$ over 8 hours).</p>	<p>MINERAL PLUS products without added formaldehyde and certified Eurofins Gold³ for Indoor Air Comfort are helping to stay at a very low concentration level.</p> 	1 credit
Hea 04 Thermal comfort	To ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants.	Thermal modelling can be facilitated through products Building Information Modelling (BIM) files available on line ⁴ .	1 credit

¹Technical manual : SD233 – 1.0:2016

² www.product-testing.eurofins.com

³ www.product-testing.eurofins.com

⁴ www.bimetrica.com

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Hea 05 Acoustic performance	To insure the building's acoustic performance, including sound insulation, meets the appropriate standards for its purpose.	Products performance aims to reduce indoor ambient noise level and reverberation times in order to comply with regulations or good practices standards, see annexe 4.	1 credit
Ene 01 Reduction of energy use and carbon emissions	To recognize and encourage buildings designed to minimise operational energy demand, primary energy consumption and CO ₂ emissions.	MINERAL PLUS products help reducing the 3 parameters: operational energy demand, primary energy consumption and CO ₂ emissions.	15 credits
Ene 05 Energy efficiency cold storage	<i>Energy efficient design, installation and commissioning:</i> To encourage the installation of energy efficient refrigeration systems, therefore reducing operational greenhouse gas emissions. The building has been designed to minimize heat loads through high levels of insulation.	Products can contribute to high insulation efficiency in the design options.	1 credit
Mat 01 Life cycle impacts	To encourage the use of robust and appropriate life cycle assessment tools and specification of construction materials with a low environmental impact over the full life cycle of the building	The Environmental Products Declarations (EPDs) ⁵ are available and 3 rd party verified against EN 15804, this allows maximum points through Mat 01 calculator (see annexe 2); and this helps to comply with request of at least 5 EPDs for additional point.	6 credits
Mat 03 Responsible sourcing of construction products	To recognize and encourage the specification and procurement of responsibly sourced construction (RSC) products.	Products comply with RSC as they have up to 80% recycled content, see annexe 3.	3 credits

⁵ <http://www.knaufinsulation.com/en/product-sustainability>

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Wst 01 (Construction waste management)	To promote resource efficiency via the effective and appropriate management of construction waste	Packaging's (wood and plastics) and products itself are recyclable. Products cut-offs can also be used as fillings on working site.	3 credits
PoI 05 (Noise attenuation)	To reduce the likelihood of noise, arising from fixed installations on the new development, affecting nearby noise-sensitive buildings.	Attenuation of noise sources by use of acoustical insulation products.	1 credit


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Annexe 1: Hea 02 : Indoor Air Quality

Here below the Eurofins Indoor Air Comfort Gold Certificate:



Product Testing



Knauf Insulation sprl
Rue de Maestricht 95
4600 VISÉ
BELGIUM

Eurofins Product Testing A/S
Smedeskovvej 38
8464 Galten
Denmark


VOC@eurofins.com
www.eurofins.com/VOC-testing

VOC TEST REPORT
Indoor Air Comfort GOLD®
14 April 2016


1 Sample Information


Sample name	Mineral Plus
Batch no.	-
Production date	27 January 2016
Product type	Mineral wool
Sample reception	17/02/2016

2 Brief Evaluation of the Results

Regulation or protocol	Conclusion	Version of regulation or protocol
French VOC Regulation		Regulation of March and April 2011 (DEVL1101903D and DEVL1104875A)
French CMR components	Pass	Regulation of March and April 2011 (DEVL1101903D and DEVL1104875A)
AgBB	Pass	AgBB of February 2015, DiBt of October 2010
Belgian Regulation	Pass	Royal decree of May 2015 (C-2014/24239)
EMICODE	EC 1 PLUS	November 2015
Indoor Air Comfort®	Pass	Indoor Air Comfort 5.3a of March 2015
Indoor Air Comfort GOLD®	Pass	Indoor Air Comfort GOLD 5.3a of March 2015
EN 717-1 ⁸	E1	2004
Blue Angel (RAL UZ 132)	Pass	Low-Emission Thermal Insulation Material and Suspended Ceilings for Use in Buildings, October 2010
BREEAM International	Compliant	GN22: BREEAM Recognised Schemes for VOC Emissions from Building Products
LEED v4 (outside U.S.)	Compliant	LEED v4 for Building Design and Construction (April, 2015)

Full details based on the testing and direct comparison with limit values is available in the following pages


Janne R. Norup
Chemist


Thomas Bjerring
Analytical Service Manager

The results are only valid for the tested sample(s).
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Annexe 2: Mat 01-Life Cycle Impact-Mat 01 Calculator

As MINERAL PLUS Knauf Insulation products have third party verified EN 15804 EPD's, please find here below the answers to provide for Mat 01 calculator (if we consider only insulation elements in the assessment).

(M) Source LCA data quality - Methodologies

Majority of individual materials/products in the building:	Score:-	
Are assessed using data of unknown methodology	0	N
Are assessed to a publicly available methodology compliant with (the current version of) ISO 14040 & ISO 14044	4	N
Are assessed to a publicly available AND peer reviewed methodology compliant with (the current version of) ISO 14040 & ISO 14044	8	N
Have an EPD (Manufacturer or Trade Association) to a publicly available AND peer reviewed PCR compliant with (the current version of):		
PAS 2050	12	N
ISO 21930	16	N
EN 15804	20	Y
Points	20	20

(M) Source LCA data quality - Geographic applicability

Majority of individual materials/products in the building are assessed:	Sum:-	
Using LCA data of unknown geographic applicability OR not compensated to local conditions	0	N
Using LCA data that has been compensated to local conditions (e.g. energy-mix) according to CEN/TR 15941	5	Y
Using data no older than 10 years (generic) or 5 years (manufacturer specific)	5	Y
Points	10	10

(M) Source LCA data quality - Verification

Majority of individual materials/products in the building are assessed using:	Score:-	
Unverified LCA data/data of unknown level of verification	0	N
Verified/peer reviewed LCA data	6	N
Verified EPD (Manufacturer or Trade Association) data to ISO 14025, ISO 21930 or EN 15804	10	Y
Points	10	10

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Annexe 3: Mat 03 Responsible sourcing of Glass Mineral Wool with ECOSE

Here below additional detailed information⁶ by production site about yearly average external secondary materials utilized in the fabrication of the MINERAL PLUS products.

	Vise (Belgium)	Lannemezan (France)	Eskisehir (Turkey)	Krupka (Czech Republic)
Total recycled content (external only)	79%	75%	80%	80%

⁶ Most recent data 2013-2014 depending on locations

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Annexe 4: Sound reduction index example for 60 mm thickness product

The test specimen consists of a “Knauf W112” plasterboard wall with a 75 mm single metal frame, “Knauf Diamant” double-layer cladding and internal insulation 60mm Mineral Plus with Ecos® Technology Knauf Insulation with a nominal thickness of 60 mm.

