BREEAM INTERNATIONAL NEW CONSTRUCTION V6.0

PRODUCT DATA FOR BUILDING CERTIFICATION

GLASS MINERAL WOOL ECOSE

BREEAM (Building Research Establishment Environmental Assessment Methodology) INTERNATIONAL NEW CONSTRUCTION[1] 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 sets you on the right path to achieving the highest results in the certification process!

BREEAM - Credit Category code	Assessment Criteria and Definition	Knauf Insulation Products contribution
Hea 02. **Indoor air quality** **1 credit**	Emissions from building products: 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 ≤ 0.06 mg/m³; Total Volatile Organic Compounds ≤1.0 mg/m³; Carcinogens category 1A and B ≤ 0.001 mg/m³.	Glass Mineral Wool ECOSE products without any added formaldehyde are in compliance with the higher category (A+) of the French labelling system and with the requirements of the **Eurofins Gold for Indoor Air Comfort**[2],
1 credit exemplary level	Emissions from building products: the insulation materials are one of the 5 product types that could meet the emission limits for exemplary level emission criteria. The following requirements are of application: Formaldehyde ≤ 0.01 mg/m³; Total Volatile Organic Compounds ≤0.3 mg/m³; Total Semi-volatile Organic Compounds ≤0.1 mg/m³; Carcinogens category 1A and B ≤ 0.001 mg/m³	Glass Mineral Wool ECOSE products (with the exception of the products with black glass veil) are in compliance with the requirements for exemplary level as without any added formaldehyde and certified **Eurofins Gold for Indoor Air Comfort**.
1 credit	Post-construction indoor air quality measurement: the total volatile organic compound and formaldehyde are measured and reported (thresholds for averaged formaldehyde concentration level ≤ 100µg/m³ over 30 minutes and for averaged TVOC≤ 300µg/m³ over 8 hours).	Glass Mineral Wool ECOSE products without any added formaldehyde and certified **Eurofins Gold for Indoor Air Comfort** are helping to stay at a very low concentration level (with the exception of the products with black glass veil).
Hea 04. **Thermal comfort** **1 credit**	To ensure that appropriate thermal comfort levels are achieved through design, and controls are selected to maintain a thermally comfortable environment for occupants within the building	Through the insulation level, insulation products contribute to the comfort level (heating and cooling) in accordance to ISO 7730:2005. Thermal modelling can be facilitated through Knauf Insulation expertise and available databases.
Hea 05. **Acoustic performance** **Up to 2 credit in non-residential & 4 in residential**	To insure the building's acoustic performance, including sound insulation, meets the appropriate standards for its purpose	Products reduce HVAC background noise, increase sound insulation of building envelope, partitions, ceilings and aid in controlling reverberation time[3].

[1] Technical manual : SD250 – Version 6.0: 2016 (update 01/12/2021)
[2] You can view our Eurofins Indoor Air Comfort Gold certificates via this link
[3] See annex 1 : Acoustic performance

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Ene 01. **Reduction of energy use and carbon emissions** **13 credits**	To recognize and encourage buildings designed to minimise operational energy demand, primary energy consumption and CO_2 emissions.	Glass Mineral Wool ECOSE products help reducing the 3 parameters: operational energy demand, primary energy consumption and CO_2 emissions through the improving of energy building performance (e.g. Uvalue) in accordance with EPBD best practices and ASHRAE standard 90.1-2013 or 90.2-2007 (as applicable).
Ene 04. **Low carbon design** **2 credits**	To encourage the adoption of design measures, which reduce building energy demand and associated carbon emissions and maximize on-site renewables.	Glass Mineral Wool ECOSE products contribute to implement passive design solutions that reduce building energy demand and associated carbon emissions.
Ene 05. **Energy efficiency cold storage** **1 credit**	Energy efficient design, installation and commissioning: To encourage the installation of energy efficient refrigeration systems, therefore reducing greenhouse gas emissions. The building has been designed to minimize heat loads through high levels of insulation.	Glass Mineral Wool ECOSE products can contribute to high insulation efficiency in the design options.
Mat 01. **Life cycle impacts** **1 credit + 1 credit exemplary level**	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 Declaration**[4] (EPDs) are available and 3rd party verified against ISO14025 and EN 15804, this allows to maximise points through Mat 01 calculator and contribute to reach the target of 5 products (10 products for exemplary level) with EPDs for additional points (with confirmation of use on the construction site at Post- Construction Stage).
Mat 03. **Responsible sourcing of construction products** **Up to 3 credits**	To recognize and encourage the specification and procurement of responsibly sourced construction (RSC) products. Insulation Products with more than 50% recycled content (BREEAM Guidance note18.v3.7 – May 2023).	Products comply with RSC as they have minimum 50% and up to 80% recycled content (external cullet). The key process is also covered by EMS (ISO 14001) which allows to meet the criterion of responsible sourced construction (RSC) products[5].
Mat 06. **Material efficiency** **1 credit**	To recognise and encourage measures to optimise material efficiency in order to minimise the environmental impact of material use and waste without compromising on structural stability, durability or service life of the building. This includes procuring materials with higher levels of recycled content.	Glass Mineral Wool ECOSE products contain up to 80% recycled components (external cullet) and contribute therefore to minimize the environmental impact of insulation. Additionnaly, it can be used in prefabricated buildings. For some applications (i.e. internal partition walls) the products can be dismantled and re-used.

[4] Environmental Products Declaration (EPDs)

[5] Annex 2 : Responsible sourcing details

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Wst 01. **Construction waste management** **2 credits**	To promote resource efficiency via the effective and appropriate management of construction waste.	Packaging's (wood and plastics) and products itself are recyclable. Mineral wool waste can be reused or recycled no matter the age or type.
Wst 06. **Functional adaptability** **1 credit**	To recognise and encourage measures taken to accommodate future changes of uses of the building over its lifespan, this includes the use of products or systems which allow easy replacements.	Glass Mineral Wool ECOSE products and technical principle of implementations may allow easy replacements of each component (Outside and/or inside use) and facilitate future adaptations or insulation reuse.
Pol 05. **Noise attenuation** **1 credit**	To reduce the likelihood of noise, arising from fixed installations on the new development, affecting nearby noise-sensitive buildings.	Attenuation of noise by use of insulation mineral wool absorbers.

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Annex 1 : Acoustic performance

Acoustic performance is one of the essential criteria for determining sustainable and healthy buildings. It is typically defined in building certification systems by three key requirements:

- **Sound insulation**: capacity of a building element (and building system) to minimise sound transmission between interior spaces and reduce noise intrusion from the exterior. It should be maximised according to the building's location and the layout of interior spaces.
- **Building services noise**: level of noise within a room, produced by heating, ventilating and air-conditioning equipment. It should be kept below prescribed limits.
- **Reverberation time**: indicator of a room's capability to enable clear understanding of speech and prevent unwanted acoustic defects (such as echo).

Use of Mineral Wool as one of the key components of various building elements enables compliance with all the acoustic requirements.

Acoustic requirement	Benefits of Knauf Insulation Mineral Wool	Test reports
Sound insulation Design criteria expressed as minimum airborne and impact sound insulation index (STC, DnT,w or L'nT,w)	Mineral Wool increases the sound insulating capacity of basic building elements. It attributes to high noise reducing capacity of façade walls, roofs, interior partitions, floors and ceilings.	**Internal partitions** *60mm Mineral Wool 35* (Rw 63 dB) **Wall linings** *45mm Ultracoustic R* (Rw 67dB) **Floors** *15mm TP-ST* (ΔLw 20 dB)
Building services noise Design criteria expressed as maximum indoor ambient noise level (dB)	Owing to its porous structure, Mineral Wool achieves high levels of sound absorption making it an integral part of HVAC noise reducing devices (sound attenuators, duct liners, cross-talk attenuators).	Sound absorption *100mm TP 138 SP* (αw 1.00)
Reverberation time Design criteria expressed as maximum reverberation time (seconds) or minimum sound absorption coefficient (αw, NRC)	Sound absorbing nature of Mineral Wool aids in controlling the reverberation time of spaces. Mineral Wool is an integral element of acoustic panels and ceiling tiles; or added above ceiling level as highly efficient acoustic absorber.	**https://knauf.com/api/download-center/v1/assets/7a998d11-e3d5-4b22-9bd1-fc6848078e3a?download=true**

The human ear is capable of perceiving sounds between 0 and 130 dB, which defines the difference between a pleasant acoustic environment, discomfort, and even pain. Generally, the human ear cannot detect variances of 1–2 dB. The values below provide an indicative relation between dB and perceived changes in loudness.

Change in dB level	Change in loudness
1-2 dB	Unnoticeable
3 dB	Just noticeable
5 dB	Clearly noticeable
10 dB	Twice as loud (or quiet)
20 dB	Four time as loud (or quiet)

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Annex 2: Mat 03 Responsible sourcing of Glass Mineral Wool with ECOSE

Guidance Note 18 V3.7 May 2023.

Material Category	Key Process	Key Supply Chain Process
Insulation		
Foam Insulation	Insulation manufacture	Main polymer production, e.g. Polystyrene, MDI, Phonelic resin or euivalent
Stone wool, glass & cellular glass made using < 50% recycled input	Product manufacture	Any quarried or mined mineral over 20% of input
Wool	Product manufacture	Wool scouring
Product using > 50% recycled content except those using timber	**Product manufacture**	**Recycled content by default**

Here below additional detailed information* by production site about yearly average external cullet utilized in the fabrication of the glass mineral wool products.

	Vise (Belgium)	Lannemezan (France)	Krupka (Czech Republic)	Bernburg (Germany)	Eskisehir (Turkey)	Cwmbran (UK)	St Helen (UK)	Johor (Malaysia)
Total recycled content (external cullet only)	65.1%	67.3%	68.6%	63.9%	81.4%	59.5%	70.3%	64.1%

* Data compiled for total year 2024

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All manufacturing sites (GMW, BW, MINERAL PLUS,RMW, WW) of Knauf Insulation in Europe, US & Asia are covered by the certificate. The annex to the certificate is available upon request.

TÜVNORD

Certificate

DIN EN ISO 14001

Management system as per
ISO 14001:2015

The Certification Body TÜV NORD CERT GmbH hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

KNAUF INSULATION S.P.R.L.
Rue de Maestricht 95
4600 Visé
Belgium

with the locations according to the annex

operates a management system in accordance with the requirements of ISO 14001:2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

Scope

Design, Development and Production of Insulation Materials and Systems

Certificate Registration No. 44 104 190742
Audit Report No. 3534 7460

Valid from 2022-12-23
Valid until 2025-12-22
Initial certification 2010

Essen, 2024-04-17

Certification Body at TÜV NORD CERT GmbH

Visit our database to verify the validity of this certificate.

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