LEED version 4.1

PRODUCT DATA FOR CERTIFICATION

MINERAL PLUS / MINERAL WOOL WITH ECOSE TECHNOLOGY

LEEDv4.1 (Leadership in Energy and Environmental Design) is a voluntary standard that defines high performance green buildings which are healthier, more environmentally responsible, and more profitable structures. Credits for certification can be earned in various categories, each with a unique focus on sustainable design: sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation and design process.

KNAUF INSULATION products can put you on the right track for the highest result into the certification!

LEED - Credit Category code	Definition	Knauf Insulation Products contribution	Contributes towards
Energy and Atmosphere (EA) Optimize Energy Performance	To achieve increasing levels of performance beyond the prerequisite standard to reduce environmental and economic harms associated with excessive energy use**.**	ECOSE Technology products help reducing energy demand through very high insulation efficiency (building envelop, partition walls, HVAC equipment, floors and ceilings).	**18 points**
Materials and Resources (MR) Building Product Disclosure and Optimization – Environmental Product Declarations	To encourage the use of products where Life Cycle Assessment (LCA) is available and have environmentally, economically and socially preferable LCA. To reward project including products with verified LCA.	Third party verified Environmental Product Declarations (EN 15804-EPDs) are available on-line for ECOSE Technology products[1].	**2 points**
Materials and Resources (MR) Building Product Disclosure and Optimization – Sourcing of Raw Materials	To encourage the use of products where LCA is available and have environmentally, economically and socially preferable LCA. To reward project including products verified to be extracted or sourced in a responsible manner.	ECOSE Technology Products are manufactured with up to 80% of recycled content (pre-consumer and post-consumer waste)[2].	**1 point**

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[1] https://www.knaufinsulation.com/download-epd-mineral-plus?environmental_product_declaration=71; https://www.environdec.com/EPD-Search/?query=knauf

[2] See annex1

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LEED - Credit Category code	Definition	Knauf Insulation Products contribution	Contributes towards
Materials and Resources (MR) Building Product Disclosure and Optimization – Material Ingredients	To encourage the use of products where LCA is available and have environmentally, economically and socially preferable LCA. To reward project for which the products chemical ingredients are inventoried.	ECOSE Technology products contains no ingredients listed on the REACH Authorization list, Restriction list or Substances of Very High Concern Candidate list[3]. They are inventoried to at least 0.01% by weight (100ppm) and certified DECLARE LBC Red List Free which means no harmful chemical substances[4]. Declare. Living Building Challenge Chemicals Red List Free Red List Free	**1 point**
Indoor Environmental Quality (EQ) Low-Emitting Materials	To reduce concentrations of chemical contaminants, as Volatile Organic Compound (VOC) that can damage air quality, human health, productivity and the environment. Emissions from ceilings, walls, thermal, and acoustic insulation are a complete category to be assessed.	ECOSE Technology products are compliant with the German AgBB Testing and Evaluation Scheme and the higher category (A+) of the French labelling. The binder is without added phenol formaldehyde. Products with or without facing, (with the exception of the black facing) are certified for Indoor Air Comfort[5] Eurofins Gold. A+ GOLD	**3 points**
Indoor Environmental Quality (EQ) Acoustic Performance	To provide spaces that promote occupants' well-being, productivity and communication through effective acoustic design.	ECOSE Technology products have high performance acoustic properties[6]. Products reduce HVAC background noise levels, increase sound insulation of building envelope, partitions, ceilings and aid in controlling reverberation time.	**1 point**

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[3] Compliance letter statement to REACH can be requested for dedicated product's manufacturing plants
[4] See annex 2
[5] www.product-testing.eurofins.com and certificate in annex 3
[6] See annex 4

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LEED - Credit Category code	Definition	Knauf Insulation Products contribution	Contributes towards
Indoor Environmental Quality (EQ) Thermal Comfort	To promote occupants productivity, comfort, and well-being by providing quality thermal comfort.	Insulation is a design alternative strategy. Heat radiation and air-conditioning will be minimized which will have positive comfortability feel and increase productivity for workers.	**1 point**

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Annex 1: Materials and Resources: Sourcing of Raw Materials

Here below additional detailed information[7] about pre-consumer waste (reintroduction of manufacturing scrap into another manufacturing process) and post-consumer waste (produced by the end consumer) utilized in the raw materials batch for the manufacturing of the ECOSE® technology glass mineral wool.

In LEED, total recycled content is the sum of 100% post-consumer recycled content plus 50% of the pre-consumer recycled content.

	Visé (B)	Lannemezan (Fr)	Krupka (Cz)	Bernburg (D)	Eskisehir (Tr)	Cwmbran (UK)	St Helens (UK)
% pre-consumer waste content	9.4%	4.9%	20.7%	26.8%	44.8%	10%	0%
% post-consumer waste content	58.7%	64.5%	48.5%	32.8%	24.1%	51.2%	69.5%
Total recycled content (100% pre-consumer+50% post-consumer)	**63.4%**	**67%**	**58.8%**	**46.2%**	**46.5%**	**56.2%**	**69.5%**
LEED MR 4	contributes towards 2 points						

Recycled content claims must conform to the definition ISO 14021-1999.

Pre-consumer waste: waste comes from process waste that is used to make a different product. This definition does not include in-house industrial scrap or trimmings, which are normally fed back into the same manufacturing process.

Post-consumer waste: waste which comes from curbside recycling programs (glass, plastic, paper, ect). Other postconsumer feedstock is generated when construction and demolition debris is recycled. To be a feedstock, the raw materials must have served a useful purpose in the consumer market before being used again.

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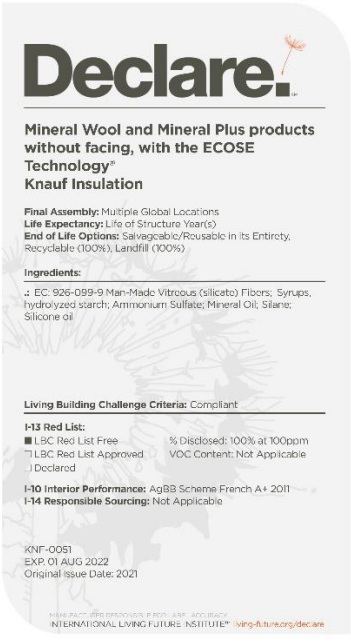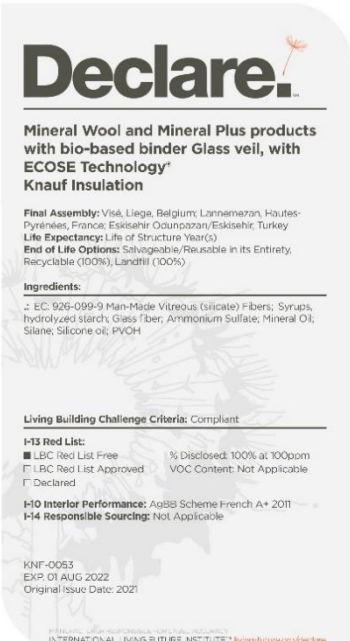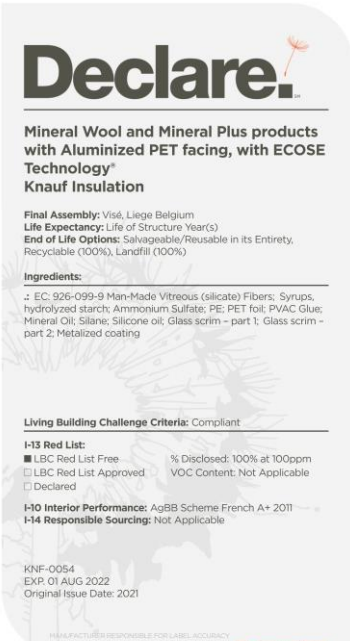
[7] Data compiled for total year 2020

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Annex 2: DECLARE labels

https://declare.living-future.org/

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Annex 3: Indoor Environmental Quality - Low-Emitting Materials

Here below, an example of Eurofins Indoor Air Comfort Gold Certificate for ECOSE products:

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Annex 4: ECOSE product and sound absorption examples

STC_c in North America is the composite *Sound Transmissions Class* and is equivalent to R_w *Sound Reduction Index* in Europe. α coefficient is the coefficient for *sound absorption*.
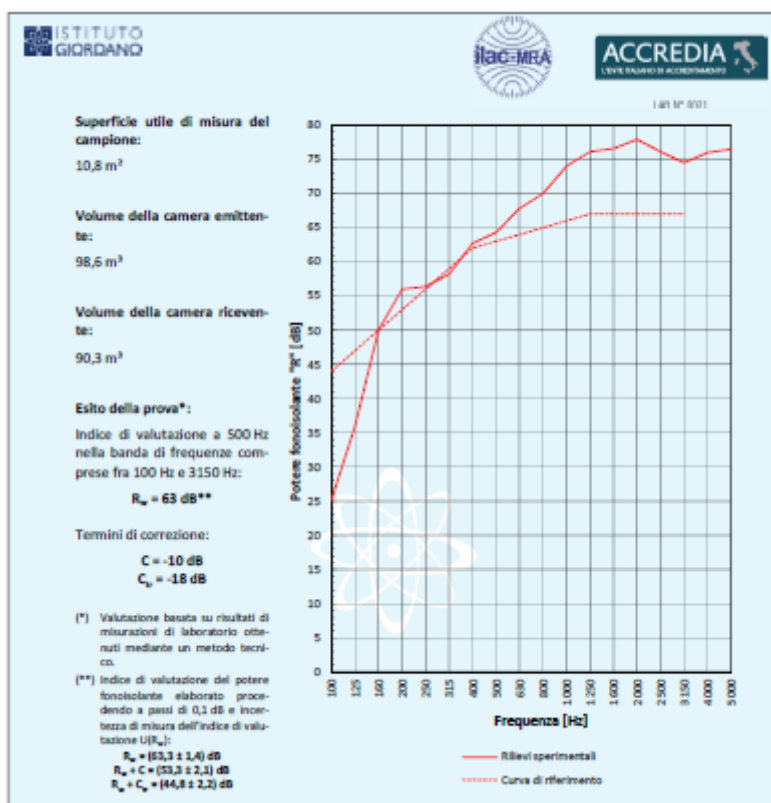
Simbolo	Descrizione
1	Montanti "Knauf" realizzati con profilati in acciaio zincato sagomati a forma di "C", spessore 75 mm
2	Lastre in gesso rivestito "Knauf GKB (A)", spessore rilevato 12,5 mm
3	Pannelli in lana minerale "Mineral Wool 35", spessore rilevato 60 mm
4	Viti autoperforanti fosfatate

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