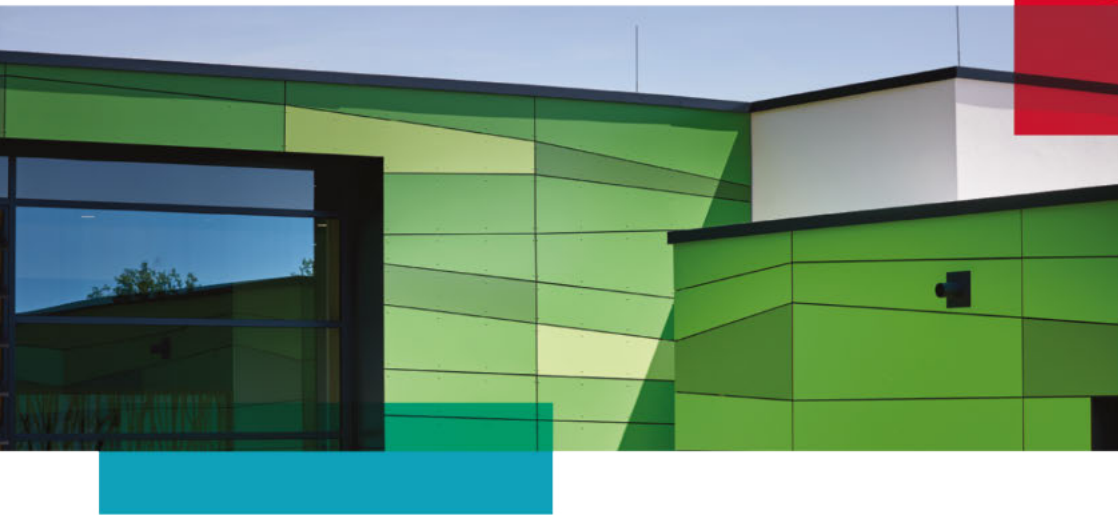


Building Sustainability Schemes



1. ROCKWOOL products contribution to Sustainable Building Assessment Schemes


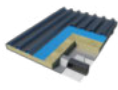



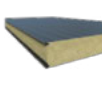
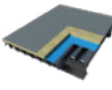







































Assessment schemes for sustainable buildings aim to make the overall building quality more transparent, measurable and comparable.

ROCKWOOL products can support building accreditations from independent sustainability schemes.

These can be used both to inform building sustainability assessments for your project, as well as helping you to gain sustainability credits. ROCKWOOL products contribute to LEED standard in the following areas.

2. Recycled Content LEED v4 Materials and Resources [MR]

MR Credit Building Product Disclosure and Optimization – Sourcing of Raw Materials

LEED (Version 2009)	LEED (Version 4)	Safe 'n' Silent Ceiling	Cool 'n' Comfort Roofing	Safe 'n' Silent partition Infill	Safe 'n' Silent Wall Lining (External)	Conrock SWP - Roofing	Conrock SWP - Wall paneling	Hardrock Overdeck Roofing
								
EA Credit 1	EA Credit: Optimize Energy Performance							
MR Credit 2	MR Credit: Building Product Disclosure and Optimization - Sourcing of Raw Materials							
MR Credit 4	MR Credit: Construction and Demolition Waste Management							
MR Credit 5	EQ Credit: Low-Emitting Materials							
IEQ Credit 3.2	EQ Credit : Acoustic Performance							
IEQ Credit 7.1								

Circular economy and resource efficiency in the construction sectors are the focus of political strategies and building assessment schemes, such as LEED or BREEAM, implemented indicators in this area as well.

Often people mistakenly think that one indicator, such as recycled content can lead to achieving a circular economy. However, achieving zero waste and high resource efficiency requires more. When the whole society is working towards zero waste, the recyclability of products and buildings at their end of life need to be considered, not just the secondary materials they contain. Higher resource efficiency means using less scarce resources and using more secondary materials/waste that cannot be used elsewhere, next to using the products and buildings as efficient and long as possible.

ROCKWOOL fully supports life cycle thinking and achieving a circular economy and believes:

- Recyclability, recycled content and scarcity of the primary raw materials of the product under study need to be analysed together in the context of moving towards a circular economy.
- The use of recycled material as such and a differentiation of recycled material into pre- and post-consumer material does not indicate if the use of the recycled material is more or less environmental beneficial.
- The system (for example closed loop) in which a recycled material exists and other reuse options of a recycled material need to be analysed in order to choose the application that supports the zero waste goal the most.
- Recycled content is one indicator, not a goal in itself and not an environmental impact such as climate change or resource scarcity.

Figures for ROCKWOOL Insulation Manufacturing Facilities in South Asia in General

Post-consumer recycled material	<1%
Pre-consumer recycled material	25 to 30%

Besides knowing the amount of recycled materials, a percentage according to a defined sum needs to be calculated to come up with the value listed above. For ROCKWOOL, this percentage is calculated according to the GRI definition which is % = total

recycled materials used / total input materials used (which includes both energy and melt raw materials). This calculation is also used by ROCKWOOL Group in its Sustainability report.

3. WELL Building Standard:

The WELL Building Standard is the premier standard for buildings, interior spaces and communities seeking to implement, validate and measure features that support and advance human health and wellness. WELL was developed by integrating scientific

and medical research and literature on environmental health, behavioural factors, health outcomes and demographic risk factors that affect health with leading practices in building design, construction and management.

Features

WELL Building Standard, AIR FEATURE 25:
Toxic material reduction + MIND FEATURE 97: Material transparency Living Building Challenge Red List

Product

ROCKWOOL Safe 'n' Silent, ROCKWOOL Cool 'n' Comfort, ROCKWOOL Thermalrock S
Density Range 40 Kg/m³ to 80 Kg/m³

Ingredient List

Name	Cas	% Weight	Role
Mineral Fiber	._**	96-98%	Mineral wool
Urea Phenol Formaldehyde (Resin)	25104-55-6	<4%	Binding agent
Residual Oils (Petroleum), Solvent-Dewaxed	64742-62-7	0.05-0.25%	De-duster oil

Ingredients reported to 1000ppm

** Man Made Vitreous Wool Fibres are IARC classified as Group 3 (not classifiable as to their carcinogenicity to humans). ROCKWOOL Fibre chemistry complies with Note Q requirements for short-term biopersistence

Formaldehyde

Content (product): < 20 ppm/0.002% (ISO 14184-1:2011)

Formaldehyde (see above) is the only registered intentionally added LBC Red List substance.

LBC Red List

Red List exception I10-E9 (3/2013) Phenol Formaldehyde in Mineral Wool: Phenol formaldehyde is allowed in rigid mineral wool insulation for exterior applications (such as rain screen assemblies or foundation insulation). While rigid mineral wool insulation does contain some formaldehyde, most of the formaldehyde is eliminated in the production process through

a chemical reaction and high heat. Rigid mineral wool insulation installed on the exterior of the building possess less risk to humans and ecosystem than rigid foam insulation products, which almost always contain HFRs and use blowing agents with high global warming potential. Product does not contain any materials above thresholds on the REACH SVHC, RoHS 2 or USEPA TRI lists.

4. Abbreviations and Acronyms

LBC Red List	International Living Future Institute
IARC	International Agency on the Research on Cancer World Health Organization
REACH SVHC	Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH) Substances of Very High Concern
USEPA TRI	US Environmental Protection Agency Toxic Release Inventory
RoHS 2	Restriction of Hazardous Substances (Directive 2011/65/EU)
CAS	Chemical Abstract Services
Note Q	European Commission Directive 97/69/EC December 5th, 1997 -exclusion of Man Made Vitreous Fibres from classification as a carcinogen

Disclaimer

All information, calculation, replies and/or specification contained herein is solely based upon the details supplied by you. It is the responsibility of the user to confirm the adequacy and accuracy of the information provided to you. For the avoidance of doubt, you acknowledge and agree that ROCKWOOL has a very limited knowledge of the project in question and if the information you supplied is not accurate then the information, calculation, replies and/or specification ROCKWOOL provides herein will not be accurate as a result of such inaccurate information. ROCKWOOL makes no representations nor gives any warranties of any kind as to the accuracy or completeness of the information, calculation, replies and/or specification provided by ROCKWOOL technical services department. For any ambiguity, please contact your local ROCKWOOL representative.