



RockFall®

Non-combustible insulation for warm pitched-roofs

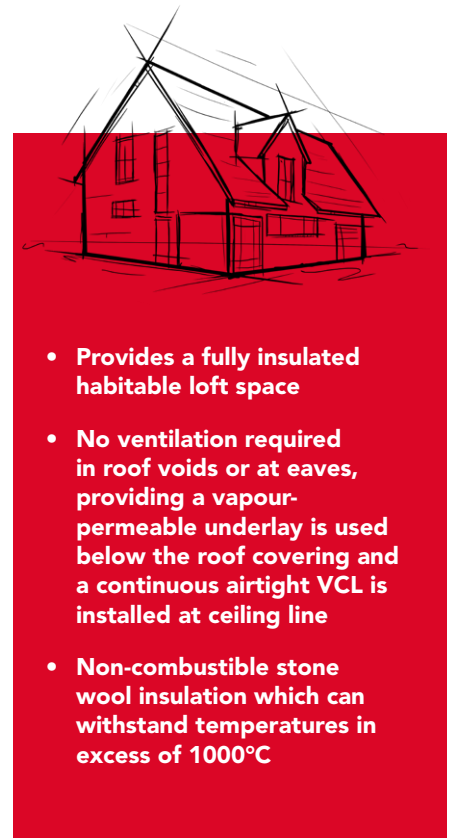
Roof insulation can be one of the most effective ways to increase the thermal performance of any building, creating more comfortable environments and reducing energy bills. ROCKWOOL RockFall insulation is compatible with most pitched systems, RockFall insulation is manufactured with non-combustible stone wool insulation and can also enhance acoustic performance.

RockFall has been specially designed as an over rafter mineral wool insulation system for warm pitched roofs and habitable lofts. The system is made up of HardRock® Multi-Fix (DD) boards that are mechanically fixed over the rafters, ROCKWOOL Flexi® is then fitted between the rafters.

The build-up of ROCKWOOL mineral wool insulation provides thermal performance to keep homes cool in summer and warm in winter. The insulation is also effective for acoustic and fire performance, reducing the level of noise entering buildings through the roof and acting as a barrier should a fire break out. RockFall helps to create safe and comfortable environments, in the home or in the workplace.

- Non-combustible stone wool insulation.
- Provides an acoustic barrier to external noise pollution.
- As a fully breathable and vapour permeable system, no ventilation is required at roof voids or at eaves and ridges.
- Condensation risk on roof timbers is reduced by using RockFall.
- Stone wool is dimensionally stable and has been proven to provide the same performance for more than 55 years after installation. *
- Can be recycled and reprocessed, reducing landfill costs.

*FIW, Durability Project Mineral Wool (2016), "Conclusions and Outlook."
Available via EURIMA (European Insulation Manufacturers Association) at:
www.eurima.org/uploads/ModuleXtender/Publications/168/2017-02-21_EURIMA-55YearsOfUse_Info_Sheet_V08_final.pdf



PERFORMANCE

Thermal performance

The thermal conductivity of HardRock Multi-Fix (DD) roofing boards is 0.039 W/mK ($\lambda_{90:90}$).
The thermal conductivity of ROCKWOOL Flexi is 0.038 W/mK for 50-120mm and 0.035 W/mK for 140-200mm.

Acoustic performance

The ROCKWOOL RockFall system can provide a level of noise reduction entering buildings through the roof. Noise reduction will be dependent on actual construction details.

Fire performance

HardRock Multi-Fix (DD) is classified as Euroclass A2-s1, d0 when assessed to BS EN 13501-1.
ROCKWOOL Flexi is classified as Euroclass A1 when assessed to BS EN 13501-1.

Condensation control

The vapour resistivity of ROCKWOOL mineral wool is 5.9MN/gm. The slabs therefore reduce the risk of condensation, allowing natural drying-out of the structure.

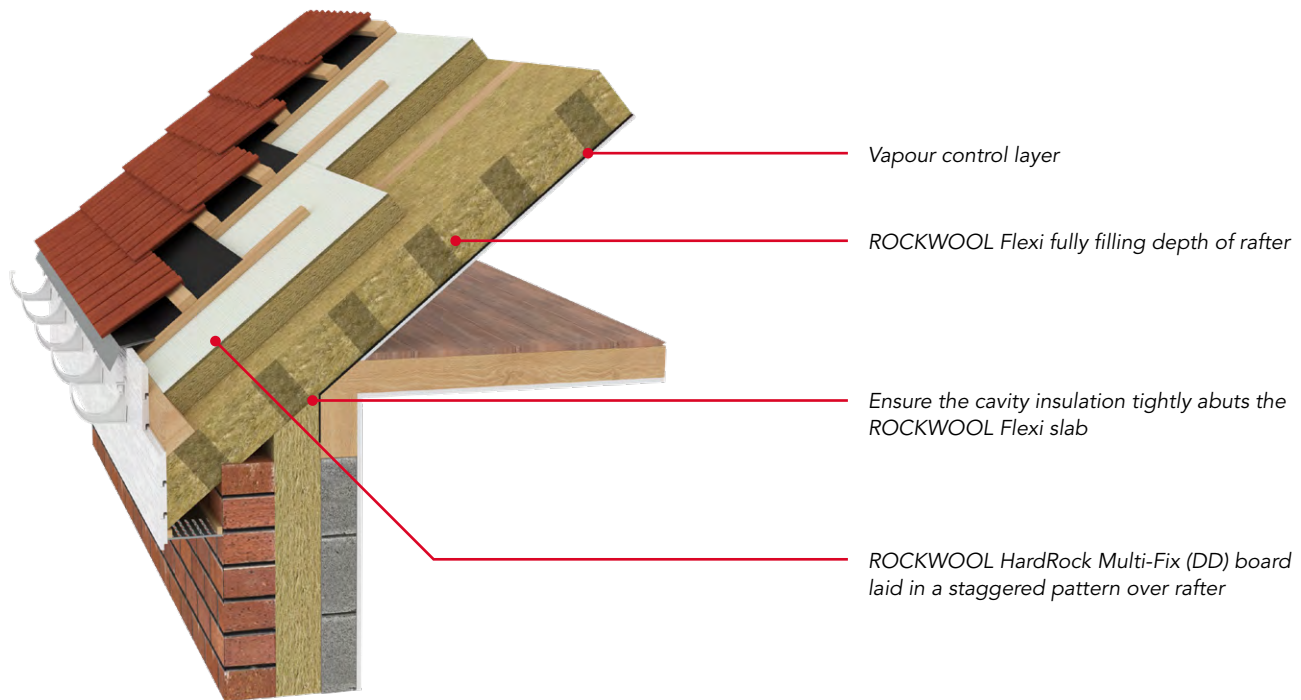
U-values

Construction 1:

47mm wide rafters at 600mm centres 7.8% timber bridging.
Over rafters: ROCKWOOL HardRock Multi-Fix (DD) 60mm to 185mm.
Between rafters: ROCKWOOL Flexi fully filling.

U-values (W/m ² K)	Over rafters	Between rafters
	HardRock Multi-Fix (DD) (mm)	Flexi (mm)
0.17	85	140
0.16	105	140
0.16	60	200
0.15	115	140
0.15	60	220
0.14	85	200
0.13	150	140
0.13	115	200
0.13	105	200
0.12	185	140
0.12	150	200
0.12	115	220
0.11	150	220
0.10	185	200

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The RockFall system minimises thermal bridging and provides an effective acoustic barrier against external noise pollution. The system comprises a high-density ROCKWOOL HardRock Multi-Fix (DD) board mechanically fixed over the rafters beneath a BBA approved breather membrane, with ROCKWOOL Flexi fitted between rafters. An airtight VCL membrane is stapled to the underside of the rafters finished with 12.5mm plasterboard.

The thicknesses shown are to meet the specified U-values and may not reflect the commercial thicknesses available. All stated U-values should be verified with the ROCKWOOL technical solutions team before ordering.

PRODUCT INFORMATION

HardRock Multi-Fix (DD)

Length (mm)	Width (mm)	Standard thicknesses (mm)
1200	1000	Available in a range of sizes between 60mm and 185mm. Please see current price list for availability.

Flexi

Length (mm)	Width (mm)	Standard thicknesses (mm)
1200	400, 600	Available in a range of sizes between 50mm and 200mm. Please see current price list for availability.

STANDARDS AND APPROVALS

Certificate

HardRock Multi-Fix (DD) has been examined by the BBA and granted certificate 21/5878, for use as a thermal insulation layer and to create or improve falls on limited access concrete, timber or metal flat roof decks, in new or existing domestic and non-domestic buildings.

HardRock Multi-Fix (DD) and Flexi satisfies the requirements of BS EN 13162 – “Thermal insulation products for buildings. Factory made mineral wool (MW) products”.



The current version of ROCKWOOL’s Declaration of Performance (DoP) can be found using the link below:

[Declaration of Performance \(rockwool.com\)](https://rockwool.com/declaration-of-performance) >

For more information visit rockwool.com/uk

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DESIGN CONSIDERATIONS

The RockFall system is capable of resisting the wind and snow loads that are normally experienced in the United Kingdom. However, the fixing supplier should be consulted for advice.

RockFall is suitable for roof pitches of 15° and above, including Mansard roofs.

Structural stability

The RockFall system is suitable for most roof pitches. It is not designed to add to the structural stability of the roof.

- Advice regarding the requirements for any additional bracing etc, must be sought from a qualified engineer or the truss manufacturer (see "installation guidance" for further detail)
- The ROCKWOOL HardRock Multi-Fix (DD) board is not an alternative to cross bracing; the roof design should be based on the following structural euro codes and recommendations:
 - BS EN 1991-1-1: imposed loads for buildings.
 - BS EN 1991-1-3: snow loads.
 - BS EN 1991-1-4: wind actions.

Water vapour and control of condensation in roofs

- No ventilation required in roof voids or at eaves, etc, providing a vapour-permeable underlay is used below the roof covering and a continuous airtight VCL is installed at ceiling line. Please seek guidance from the relevant membrane manufacturer to ensure the suitability of the vapour-permeable membrane.
- BS5250 provides guidance for the design of different roof types to minimise problems of condensation.
- Condensation risks can be attributed to various sources, such as areas of high humidity, the purpose/use of the building and the type of external roof covering.

Further guidance on preventing interstitial condensation can also be found in BRE Digest 369.

Minimising thermal bridging

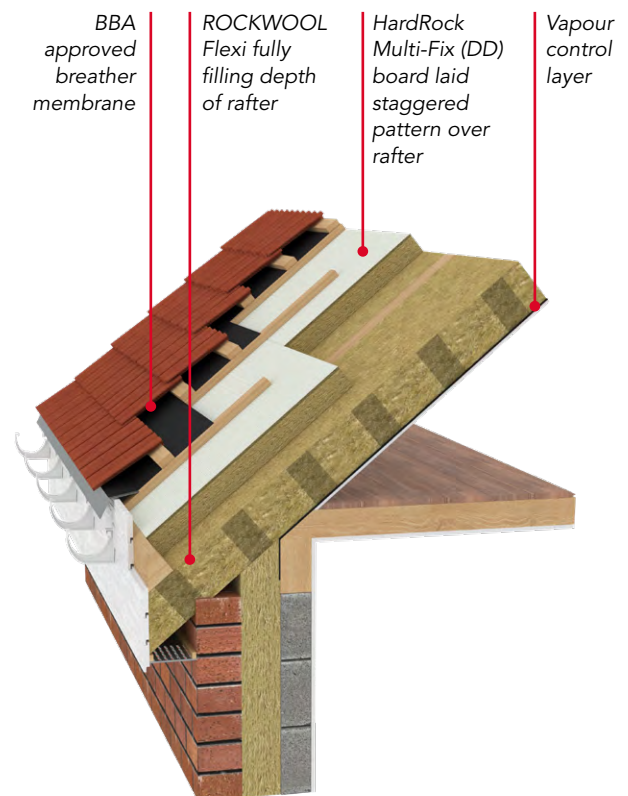
To limit heat loss and prevent problems such as thermal bridging and condensation occurrence, junctions between elements should be designed to maintain continuity of insulation. For roofs, the key junctions are those at eaves and gable, where the wall insulation should meet roof insulation.

To avoid these issues, the following points should be addressed:

- At eaves, the wall insulation should be continued between the rafters until it butts the underside of the ROCKWOOL HardRock Multi-Fix (DD) boards (or alternatively to the underside of the ROCKWOOL Flexi slab).
- The habitable roof void should be complete insulated, including any associated gable walls. All roof insulation boards should be tightly fitted, with no gaps.
- Any gaps around ridges, roof lights or similar penetrations should be filled and sealed.
- Ensure that all fascia's and soffits are non-vented and should be sealed with mastic at abutment with walls.

Construction

A timber rafter pitched roof with tiles or slates on battens and counter battens and a LR vapour permeable underlay. ROCKWOOL HardRock Multi-Fix (DD) board laid over the rafters and ROCKWOOL Flexi slab friction fitted between the rafters, a continuous airtight VCL, with all joints lapped and sealed stapled to the underside of rafters, ceiling finished with 12.5mm plasterboard.



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INSTALLATION

ROCKWOOL HardRock Multi-Fix (DD) board installation

- A timber stop batten is fixed across the foot of the rafters. This is to relieve the horizontal load on the fascia boards and to create resistance against downward counter-batten load.
- Starting from the timber stop rail, slabs should be close-butted at all vertical and horizontal joints. The horizontal joints of the insulation should be staggered in accordance with good practice.
- Counter battens (35mm x 50mm) spaced at rafter positions, should be fixed through using spiral fixings (e.g., Helifix Inskew) at a maximum of 400mm centres with minimum penetration in the rafter of 35mm.
- The LR underlay can be installed either below or above the counter battens. When installed above the counter battens the LR underlay should be draped by no less than 10mm allowing free drainage down the roof slope.
- The fascia height must be sufficient to accommodate the level of the roof finish up to ROCKWOOL HardRock Multi-Fix (DD) boards and counter-battens.
- For a typical installation, a breathable membrane is placed under tiling battens (see Figure 2).

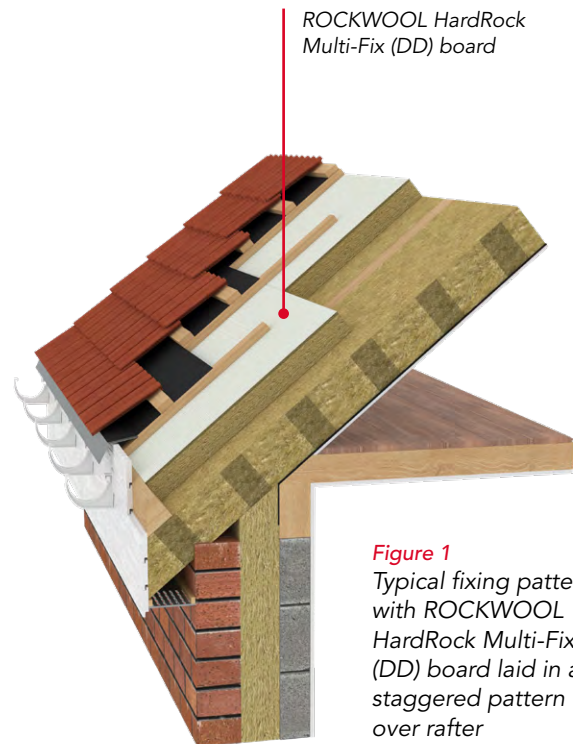
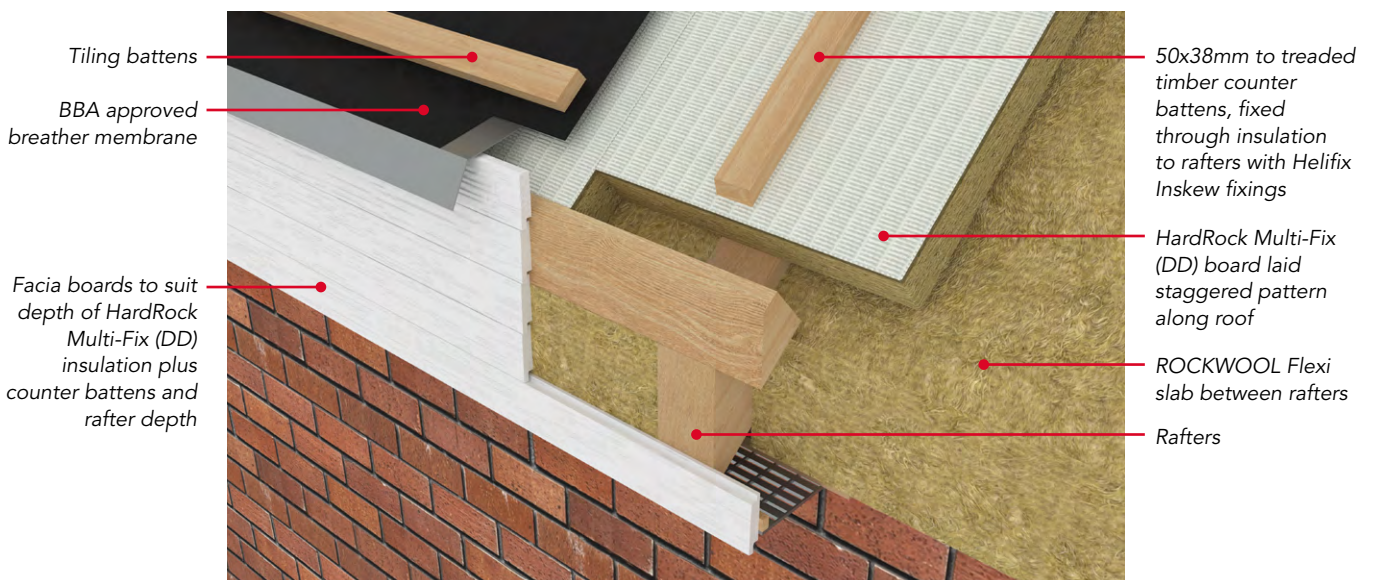


Figure 1
Typical fixing pattern with ROCKWOOL HardRock Multi-Fix (DD) board laid in a staggered pattern over rafter

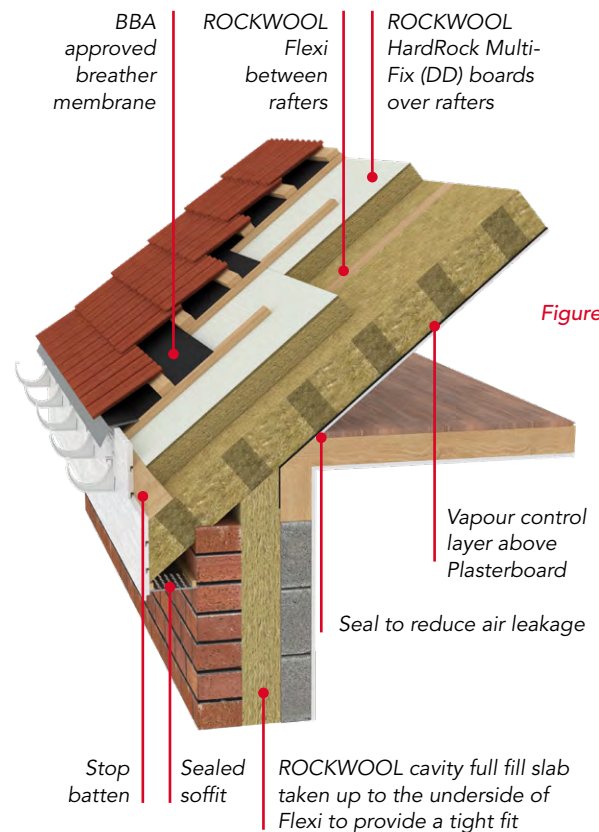
Figure 2



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ROCKWOOL Flexi Installation

- Completed from below, ROCKWOOL Flexi is friction fitted and close butted between the rafters, so it is in direct contact with the underside of the ROCKWOOL HardRock Multi-Fix (DD) board, with no air gaps between the two layers.
- To avoid a thermal bridge at the eaves, the ROCKWOOL Flexi slabs should link with the wall insulation.
- At eaves, the wall insulation should be continued between the rafters until it butts the underside of the ROCKWOOL HardRock Multi-Fix (DD) boards (or alternatively to the underside of the ROCKWOOL Flexi slab).
- To avoid a thermal bridge at the eaves, there must be continuity between roof and wall insulation. This can be achieved by either:
 - Extending the height of the wall insulation to the underside of the ROCKWOOL HardRock Multi-Fix (DD) or ROCKWOOL Flexi or
 - Extending the ROCKWOOL Flexi slabs into the eaves box to link with the wall insulation.



Eaves details

- Figure 3 shows a timber stop batten fixed to the foot of the rafters. This provides resistance against the downward counter-batten loads, relieving the fascia board of any horizontally applied load.
- A continuous plywood tilting board fixed to the top of the fascia carries the breather membrane over and into the gutter so that it does not sag and allow moisture to collect at the eaves position.

Ventilation

- There is no requirement for eaves ventilation when using the RockFall system. However, for some tight-fitting outer coverings (e.g., fibre cement slates or metal tiling) there may be a need to ventilate the batten void between the roof covering and the underlay using an "over fascia" ventilator. It is therefore important to follow the membrane manufacturer's recommendations and third-party certifiers, to ensure effective diffusion of water vapour to the outside.
- A continuous airtight vapour control layer (VCL), with all joints lapped and sealed must be used directly above the internal ceiling lining to prevent water vapour entering the roof envelope and to achieve air tightness of the habitable space. To achieve a truly sealed roof, all penetrations and all junctions must be adequately sealed (e.g., between the floor and sloping ceiling).

Fixings

- Information and advice on the type and frequency of fixings should be obtained from the relevant manufacturers. EJOT UK Ltd and SFS Group Fastening Technology Ltd are examples of relevant manufacturers, although other manufacturers are available.
- On steeper roof pitches, such as Mansard roofs, additional timber stop battens may be required to resist shear forces, as well as additional mechanical fixings.

Valley and ridge details

- ROCKWOOL RockFall Boards should be mitred to make a tight butt joint at the ridge and valley locations.
- The breather membrane should be made continuous with minimum sealed overlaps of 150mm. Lead valley gutters are an acceptable alternative to pre-formed valley tiles or slates and should be constructed in accordance with good roofing practice.

Further guidance can be sought from The Lead Sheet Association (LSA).

SPECIFICATION CLAUSES

ROCKWOOL HardRock Multi-Fix (DD) and Flexi are associated with the following NBS clauses:

J21-425

J31-334

J41-425

J42-425

ROCKWOOL Flexi

K10 -115

K10-125

K10-145

K10=155

K10-165

K10-215

K11-115

K11-125

K11-135

K11-145

K11-795

K11-796

K20-150

K21-120

K21-130

K21-140

P10-140

P10-170

P10-240

P10-250

LEGAL NOTICES

General safety requirements – Building Safety Act 2022

ROCKWOOL Limited is committed to supporting specifiers, resellers and users of ROCKWOOL products for the full life cycle of the product to comply with the obligations and responsibilities set out in the Building Safety Act 2022. With regard to the general safety requirements of the Act, ROCKWOOL Limited cannot control or foresee every situation where its products might be used. We therefore strongly advise that specifiers, resellers and users contact us where use of ROCKWOOL products is contemplated in applications different from those explicitly described in the latest, relevant ROCKWOOL product datasheets; especially in applications that can be reasonably foreseen as critical to safety.

ROCKWOOL Limited reserves the right to amend the specification of its products without notice. Changes to the ROCKWOOL manufacturing process, or to pertinent regulations, may be reflected in changes to tested and certified product performance. Whilst ROCKWOOL Limited endeavours to keep its publications up to date, readers will appreciate that between publications there may be pertinent changes in the law or other developments affecting the accuracy of the information contained in our publications.

ROCKWOOL Limited does not accept responsibility for the consequences of using (including testing or certifying) its products in applications different from those explicitly described in the relevant ROCKWOOL product datasheets. Expert advice should be sought, and ROCKWOOL Limited should be contacted, where such different use is contemplated, or where the extent of any use described by ROCKWOOL Limited is in doubt.

The ROCKWOOL Trademark

ROCKWOOL® - our trademark

The ROCKWOOL trademark was initially registered in Denmark as a logo mark back in 1936. In 1937, it was accompanied with a word mark registration; a registration which is now extended to more than 60 countries around the world.

The ROCKWOOL trademark is one of the most important assets of the ROCKWOOL Group, and is therefore well-protected and defended by ROCKWOOL throughout the world.

If you require permission to use the ROCKWOOL logo for your business, advertising or promotion, you must apply for a Trade Mark Usage Agreement.

To apply, write to:
marketcom@rockwool.com

Trademarks

Registered trademarks of the ROCKWOOL Group include but are not limited to:

ROCKWOOL®, RockClose®, RainScreen Duo Slab®, HardRock®, RockFloor®, Flexi®, RockFall®, FirePro®, DuctRock®, BeamClad®, NyRock®

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marketcom@rockwool.com

ROCKWOOL stone wool - safe to install and live alongside

There are no hazardous classifications associated with stone wool insulation manufactured by ROCKWOOL-UK according to EU REACH and UK REACH regulations on health and the environment.

ROCKWOOL safe use instruction sheets and material safety data sheets (where applicable) can be downloaded [here](#).



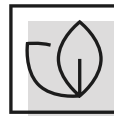
Sustainability

ROCKWOOL products are used to enrich modern living, creating safer, healthier and more climate-resilient communities.

We transform abundant, natural volcanic rock into stone wool insulation products that are used to reduce energy demand, lower fuel bills and help address society's climate change challenges.

ROCKWOOL stone wool insulation is recyclable and can be transformed into new ROCKWOOL products. Please contact us for details of how we can work together to recycle waste ROCKWOOL stone wool material that may be generated during on-site installation.

Our annual sustainability reports, which set out progress against our sustainability goals, and further details of the positive impacts of using our products can be found on our website.



Environment

ROCKWOOL takes a fact-based, auditable approach to documenting our progress in maximising our products' positive impact and minimising the effect our operations have on the environment, backed by third-party references and methodologies. Further details can be found online in our annual sustainability report.

Our high-tech production process uses filters, pre-heaters, after-burners and other cleaning and collection systems that help to reduce the effects of our manufacturing operations on the environment.

ROCKWOOL stone wool insulation does not contain (and has never contained) gases that have ozone depletion potential (ODP) or global warming potential (GWP).

