KNAUFINSULATION

knaufinsulation.co.uk

INTRODUCTION TO KNAUF INSULATION

The UK's leading provider of Mineral Wool insulation.

For high performance, safe and comfortable building environments.

Thermal | Fire | Acoustic | Sustainability | Energy saving

challenge.
create.
care.

CURED GLASS MINERAL WOOL

BLOWN GLASS MINERAL WOOL

ROCK MINERAL WOOL

CONTENTS

KNAUF INSULATION & THE KNAUF GROUP

With 40 years of experience in the insulation industry, we are leading the change in smarter insulation solutions for a better world.

Our mission

"Our mission is to **challenge** conventional thinking and **create** innovative insulation solutions that shape the way we live and build in the future, with **care** for the people who make them, the people who use them and the world we all depend on."

challenge.

We challenge ourselves, regulators and our industry to develop new concepts and new ways of thinking about insulation and buildings;

create.

We create innovative solutions that change the way we work and set new standards of quality, performance and sustainability;

care.

We care about what really matters: our people, our customers, our communities and ultimately, our planet.

Our vision

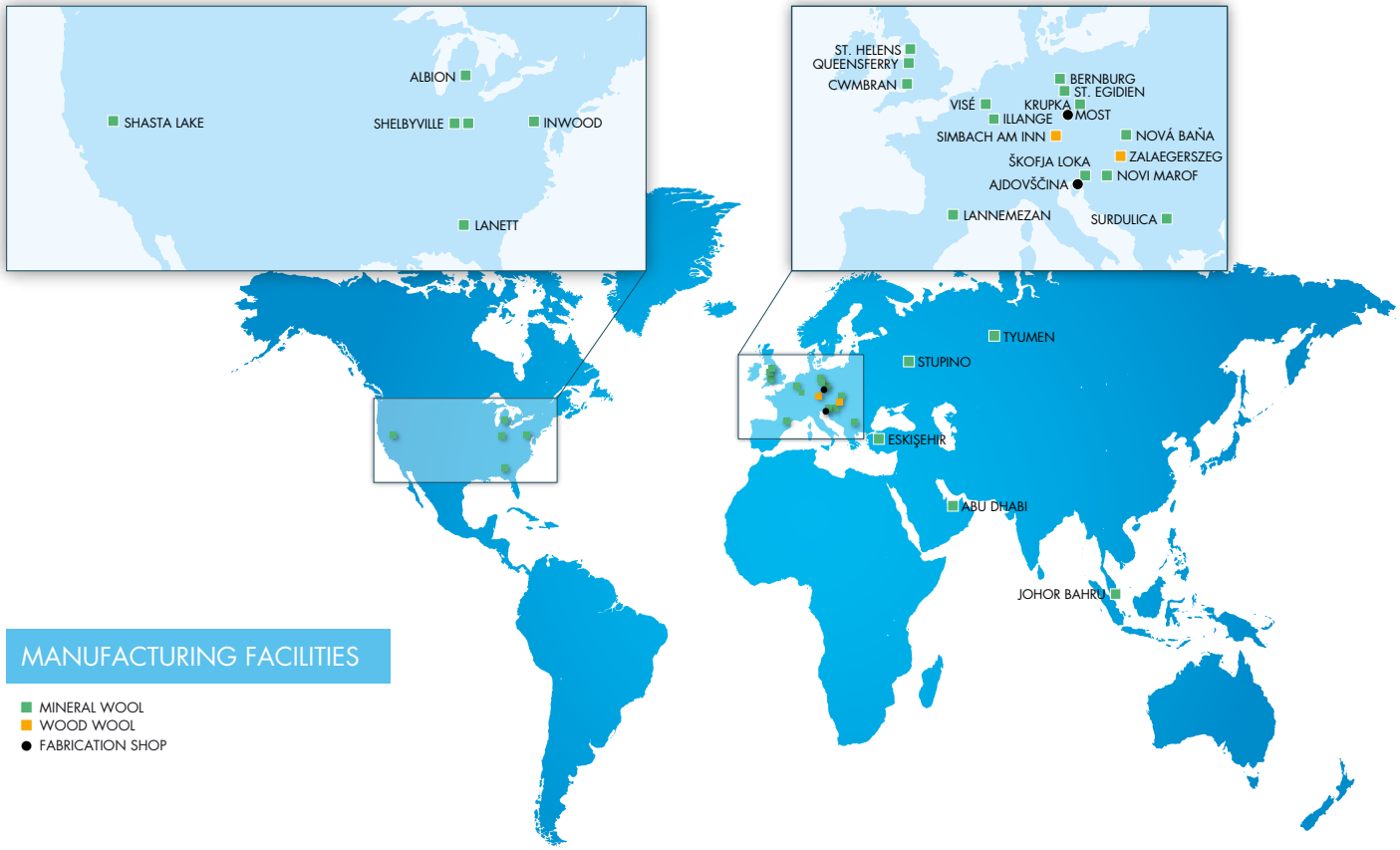
"Our vision is to lead the change in smarter insulation solutions **for a better world**. Our aspiration is to be the world's most trusted insulation partner providing high performing and smart insulation solutions and services for a better world."

We are part of the Knauf Group, a family-owned multi-national manufacturer of building materials and construction systems.

2019 figures

	Knauf Group	Knauf Insulation
turnover	€10bn	€2 bn
employees worldwide	+35,000	+5,500
plants & offices	250	27
countries	+86	+15

KNAUF INSULATION



MANUFACTURING FACILITIES

- MINERAL WOOL
- WOOD WOOL
- FABRICATION SHOP

INSULATION PRODUCTS TO SUIT ALL YOUR NEEDS

We are committed to helping our customers meet the increasing demand for energy efficiency and sustainability in all buildings.

As the only UK manufacturer of both Glass and Rock Mineral Wool, we are uniquely placed to provide the best insulation solution for each application. We offer a wide range of insulation solutions for all applications in commercial and residential buildings, for both new build and refurbishment projects, in addition to solutions for HVAC, industrial applications and fire protection, green roofs and bespoke applications.

We offer a wide range of high performance, non-combustible insulation solutions for all buildings.

Our extensive product range is designed to provide solutions for all types of roofs, walls and floors, as well as specialist fire protection.

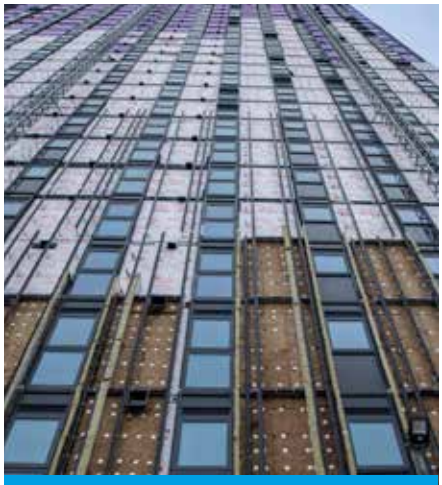
COMMERCIAL

SPECIALIST

View our range of case studies on our website:

knaufinsulation.co.uk/media/case-studies

HOUSING

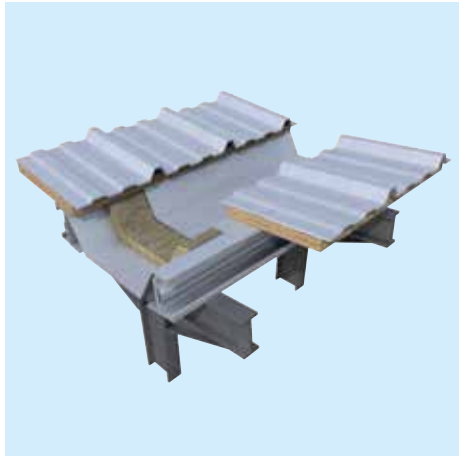


HIGH RISE

Offsite

Our offsite solutions include a wide variety of products suitable for both panellised and volumetric construction.

Understanding that every system is tailor-made, we can work with you to recommend the best insulation solution for your system.



Bespoke applications

Our UK Special Products team is on hand to help develop bespoke products or systems that will add value to your business and help you stand out from the competition.

By having a fully customisable product specification, we promise to make our products work as best they can for you.

Technical applications

Our Technical Solutions comprise of a range of high performance insulation solutions developed specifically for the insulation requirements of HVAC systems and industrial plants. Our range covers solutions for insulating heating systems, piping and air conditioning ducts, insulating industrial plant and power stations, and for passive fire protection.

Green roof, landscaping and horticultural applications

We have a range of green roof, landscaping and horticultural solutions. Our Urbanscape® Green Roof System is an innovative, lightweight easy to install system and is the world's first green roof system with a Life Cycle Assessment (LCA) and Environmental Product Declaration (EPD).

A RANGE OF HIGH PERFORMANCE PRODUCTS FOR ALL APPLICATIONS

Built-up Metal Walls
FactoryClad Rolls

Built-up Metal Roof
FactoryClad Rolls

Flat Roof
Rocksilk® Flat Roof Slabs

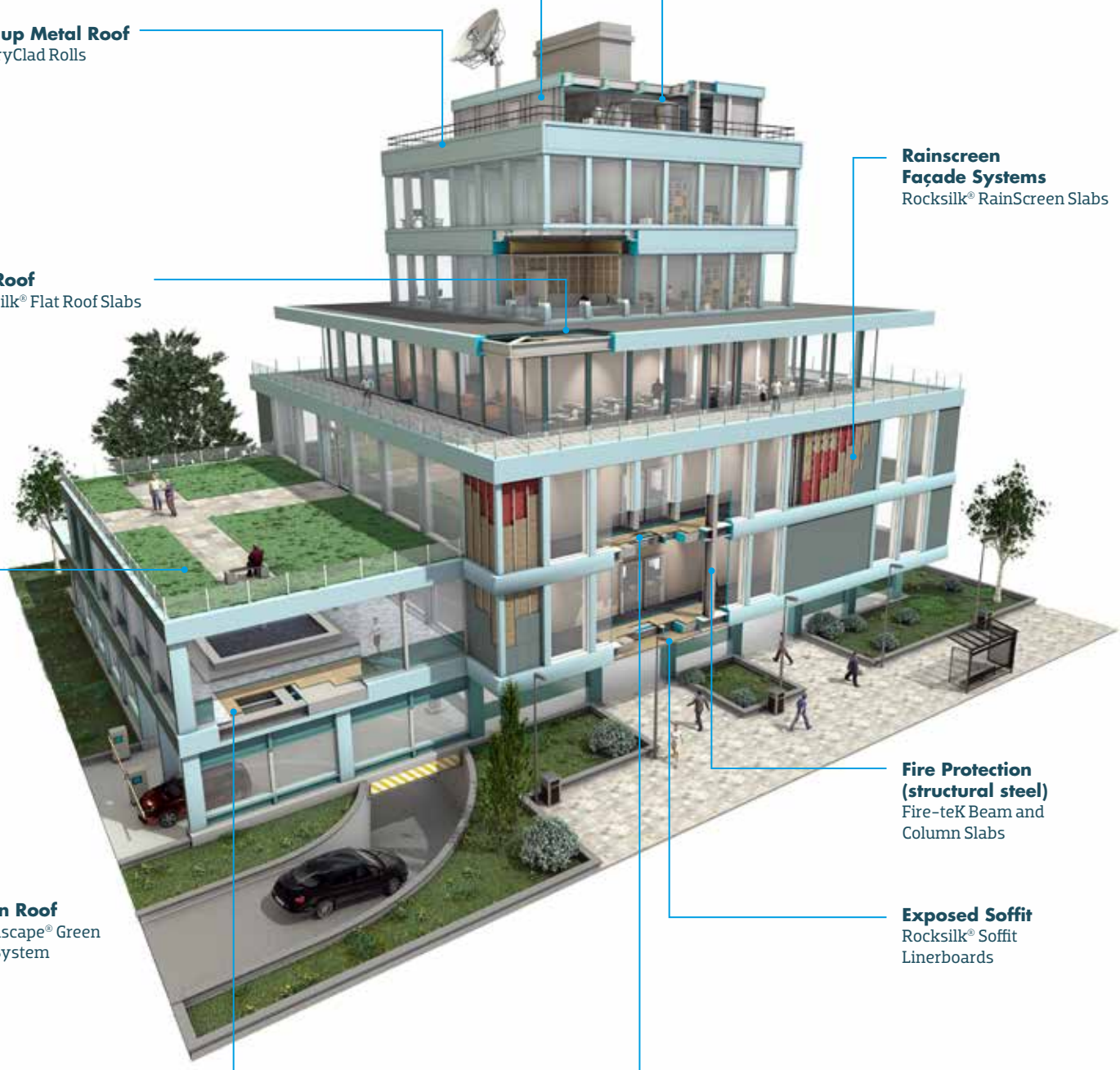
Green Roof
Urbanscape® Green Roof System

Fire Protection (ducts)
Fire-teK BD 917

Rainscreen Façade Systems
Rocksilk® RainScreen Slabs

Fire Protection (structural steel)
Fire-teK Beam and Column Slabs

Exposed Soffit
Rocksilk® Soffit Linerboards



Separating Floors (concrete)
Rocksilk® Acoustic Floor Slabs

Separating Floors (timber)*
Rocksilk® Acoustic Floor Slabs

*Not pictured

Separating (Party) Walls (blown-in)*
Supafil® Party Wall

Separating (Party) Walls (built-in)
Masonry Party Wall Slab
Timber Frame Party Wall Slab*

Pitched Roof (rafter level)
Rafter Roll

Pitched Roof (ceiling level)
Loft Rolls

Green Roof
Urbanscape® Green Roof System

Internal Floors
Acoustic Roll

Suspended Timber Ground Floors
OmniFit® Slab 35

Masonry Cavity Walls (built-in)
DriTherm® Cavity Slabs

Masonry Cavity Walls* (blown-in)
Supafil® Blowing Wool

Internal Walls
Acoustic Roll

Timber Frame Walls (built-in)*
FrameTherm® Rolls & Slab

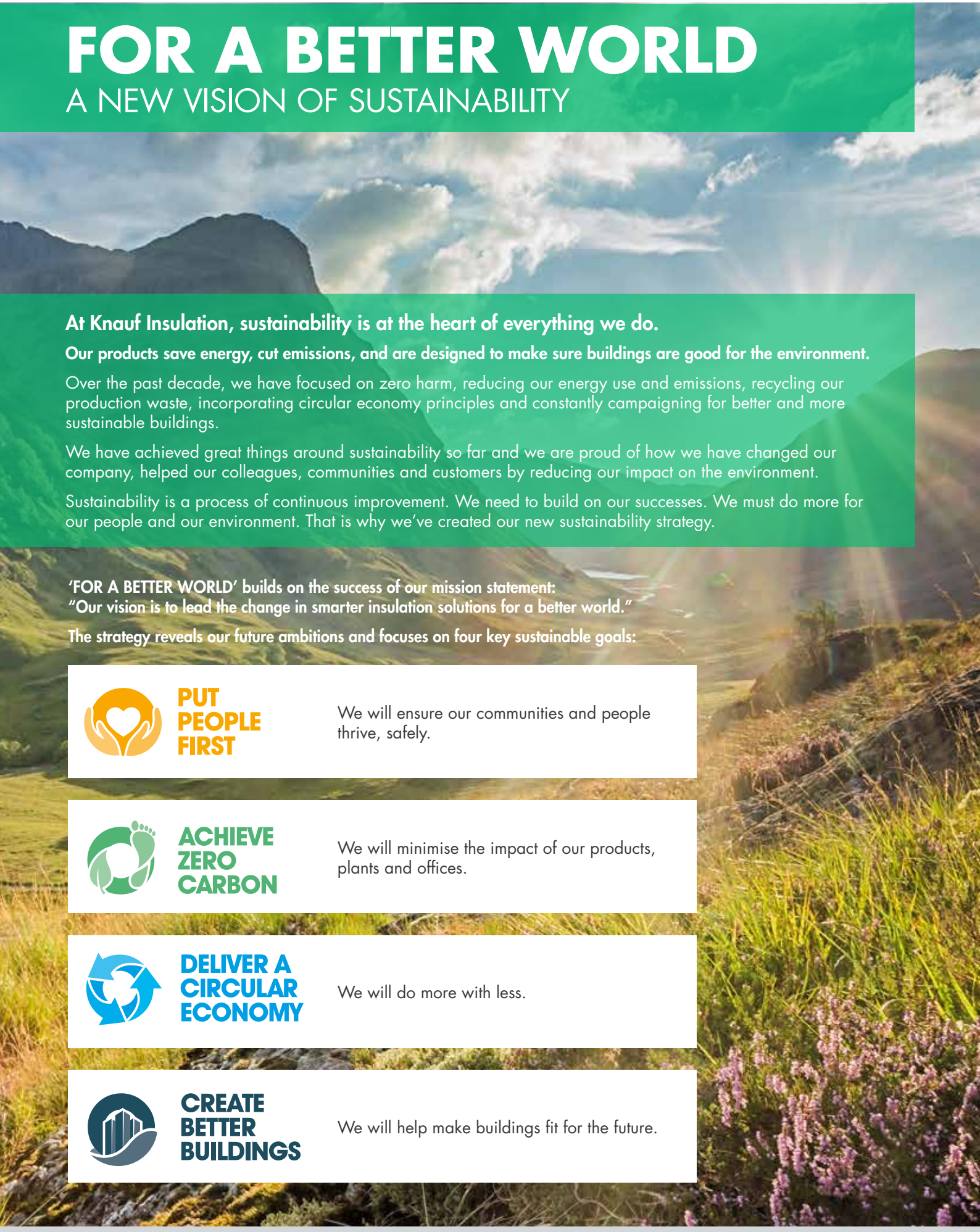
Timber Frame Walls (blown-in)*
Supafil® Frame

External Wall Insulation*
Rocksilk® EWI Slabs

*Not pictured

FOR A BETTER WORLD

A NEW VISION OF SUSTAINABILITY



At Knauf Insulation, sustainability is at the heart of everything we do.

Our products save energy, cut emissions, and are designed to make sure buildings are good for the environment.

Over the past decade, we have focused on zero harm, reducing our energy use and emissions, recycling our production waste, incorporating circular economy principles and constantly campaigning for better and more sustainable buildings.

We have achieved great things around sustainability so far and we are proud of how we have changed our company, helped our colleagues, communities and customers by reducing our impact on the environment.

Sustainability is a process of continuous improvement. We need to build on our successes. We must do more for our people and our environment. That is why we've created our new sustainability strategy.

'FOR A BETTER WORLD' builds on the success of our mission statement:
"Our vision is to lead the change in smarter insulation solutions for a better world."

The strategy reveals our future ambitions and focuses on four key sustainable goals:

PUT PEOPLE FIRST

We will ensure our communities and people thrive, safely.

ACHIEVE ZERO CARBON

We will minimise the impact of our products, plants and offices.

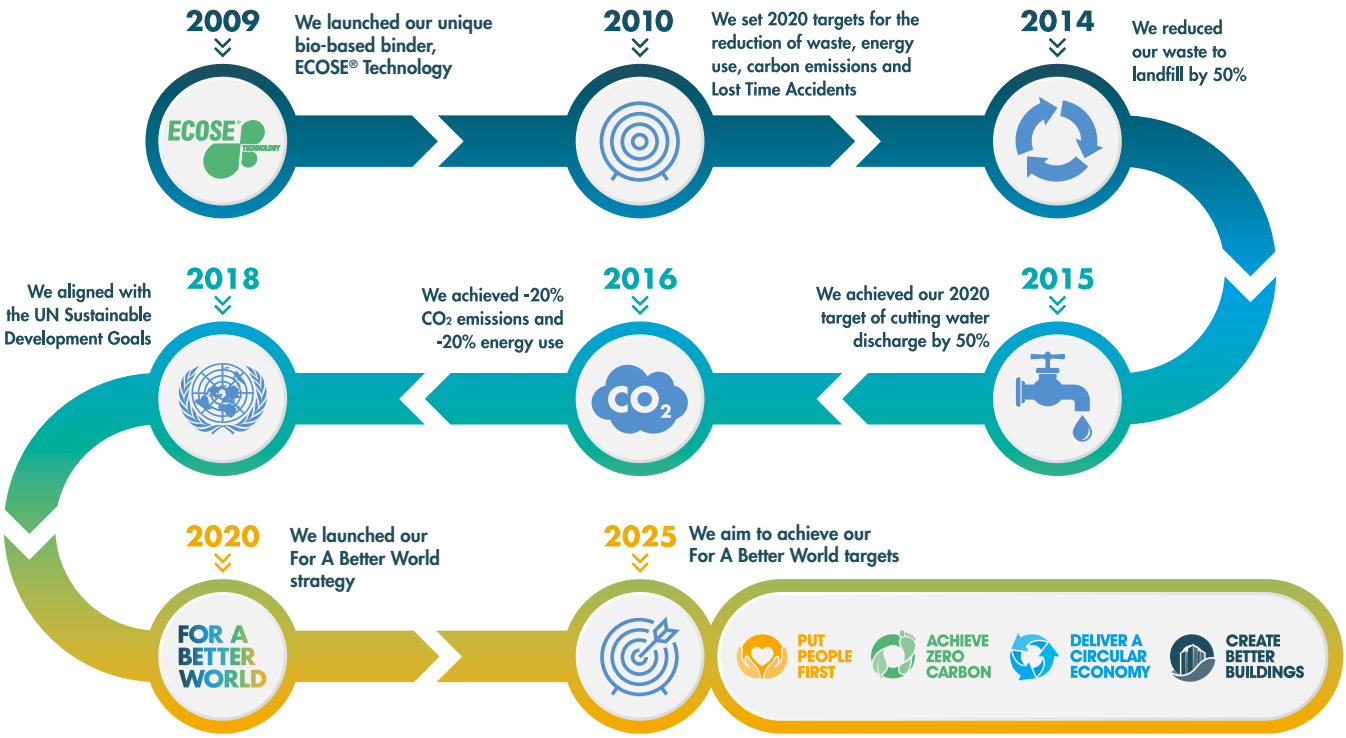
DELIVER A CIRCULAR ECONOMY

We will do more with less.

CREATE BETTER BUILDINGS

We will help make buildings fit for the future.

We are supporting our customers as they navigate an ever-changing landscape of demanding green building requirements and increasingly stringent environmental regulation. We have the experience and expertise to support our customers to achieve their sustainable ambitions.



OUR SUSTAINABILITY JOURNEY

We believe sustainability success is a process of continuous improvement. Since we started our journey we have consistently worked to reduce our environmental impact and recorded significant achievements (see below). Our new sustainability strategy builds on the success of the past decade.

OUR 2010 TO 2020 HIGHLIGHTS

ENERGY AND RELATED EMISSIONS

22.7% Reduction in **energy use**

23.2% Reduction in **related emissions**

SAFETY

Lost Time Accidents reduced by **56%**

WASTE

Waste to landfill reduced by **67.3%**

NOx

NOx reduced by **42.7%**

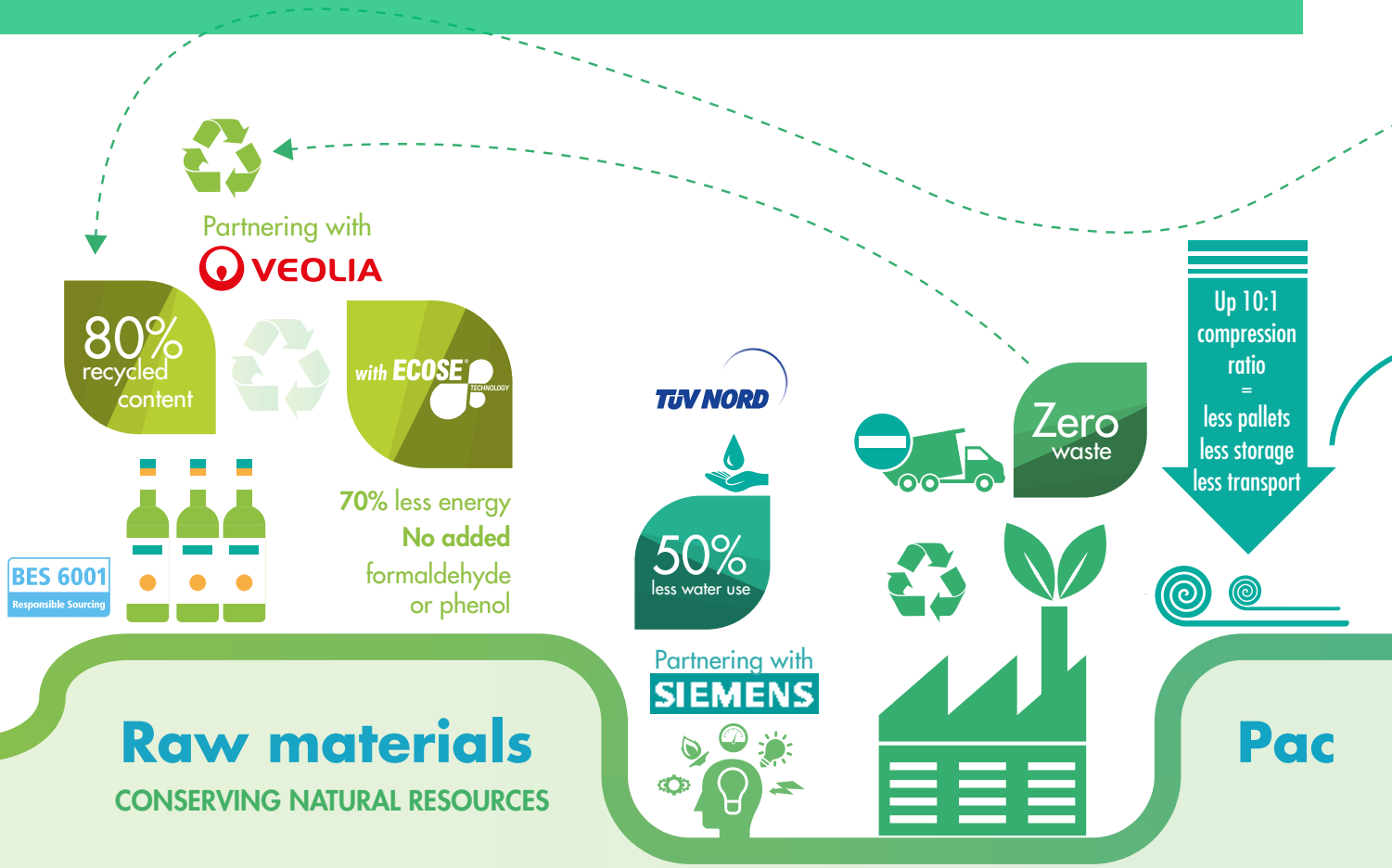
WATER USE

39.8% Reduction in **Water use**

80.7% Reduction in **water discharge**

Despite manufacturing output achieving record levels during the past decade, we have continued to reduce our environmental impact per cubic metre of product.

USE INSULATION MATERIALS THAT MINIMISE ENVIRONMENTAL IMPACT



Raw materials

CONSERVING NATURAL RESOURCES

Our Glass Mineral Wool insulation solutions contain up to 80% recycled content. By maximising the amount of recycled glass in the manufacture of our products, we minimise our need for virgin raw materials.

Our unique bio-based binder, ECOSE® Technology contains no added formaldehyde or phenol. It is made from natural raw materials that are rapidly renewable and is 70% less energy-intensive to manufacture than traditional binders, so it is more environmentally-friendly.

Our work to ensure safe and legal operations in our supply chain has enabled us to achieve certification to the Building Research Establishment's responsible sourcing standard BES 6001.

Manufacturing

REDUCING THE ENVIRONMENTAL IMPACT OF OUR OWN PROCESSES

Partnering with Siemens, we are unlocking efficiency opportunities to reduce our carbon footprint, saving the equivalent annual energy usage of almost 800 homes.

Our commitment to fair and safe working practices in our own facilities is embedded in our code of conduct, and reflected in the ISO 45001 certification covering all our production sites.

All our facilities are also certified to ISO 14001 and ISO 50001 standards.

We avoid waste and prevent pollution; we segregate factory waste to maximise recycling and to meet our expectation of sending zero waste to landfill from our UK plants.

As the market leader and a non-stop innovator, quality excellence and sustainability are at the heart of everything we do. Whilst we have a strong focus on the thermal, fire safety and acoustic performance of our products, our pursuit of sustainability has much wider horizons.

We are dedicated to supplying sustainable high performance insulation solutions for enhanced energy efficiency in buildings, but we also continually strive for improvements in our manufacturing and supply chain operations to improve quality and minimise our impact on the environment. All our production locations have state-of-the-art manufacturing equipment and meet the highest quality standards, supported by an ongoing research and development program.

kaging

Building

CREATING A HIGH PERFORMANCE, COMFORTABLE AND HEALTHY BUILDING ENVIRONMENT

Distribution

DELIVERING PRODUCT EFFICIENTLY

Packaging 'For A Better World'
We have recently improved our industry-leading compression-packaging, and have been able to further increase the amount of material per pack or pallet for our Glass Mineral Wool products.

This means even fewer trucks on the road, less storage and handling for our customers. In addition, we have re-designed our packaging to be more customer-centric, while reducing the amount of ink by up to 50%.

We are also introducing a new packaging film with a minimum of 30% recycled plastic content. This means the plastic we do use is even easier to recycle and reduces our carbon footprint.

Over the years, we have been trimming the weight of the pallets we use in the UK, cutting around 2kg per pallet, equating to a total saving of around 5,000 trees/year.

Our products contain very low levels of VOCs which affect indoor air quality, attested by their certification to Eurofins Gold Certificate for Indoor Air Comfort.

The overall environmental performance of our products is reported in Environmental Product Declarations. They are verified by an independent third-party and comply with the European standard EN 15804.

Our Glass Mineral Wool and Blowing Wool products are registered in the BRE's UK-specific Certified Environmental Profiles scheme. The majority of our products have a generic Green Guide rating of A+.

Our entire Glass Mineral Wool product range has been awarded the DECLARE 'Red List Free' label.

This allows product transparency disclosure that identifies where a product comes from and what it is made of.

MINIMISING THE USE OF VIRGIN RAW MATERIAL IN PARTNERSHIP WITH VEOLIA

Our high performance Glass Mineral Wool insulation contains up to 80% recycled content, most of which is glass cullet from Veolia's glass recycling facility next to our manufacturing plant in St. Helens, Merseyside.

By maximising the amount of recycled glass cullet in the manufacture of our products, we minimise our need for mineral raw materials.

The partnership with Veolia brings many benefits:

- It provides an assurance of supply of raw materials and we are able to maintain the recycled materials content in the manufacture of our Glass Mineral Wool insulation solutions up to 80%.
- It has reduced waste going to landfill and over 60,000 tonnes of used glass bottles and jars are given a new lease of life each year.
- The partnership has provided a closed loop solution and a significant investment in the mainstream circular economy.
- The proximity of the facility saves approximately 375,000 miles of road journeys every year.

VEOLIA

OUR ACCREDITATIONS

We're proud to have gained a number of accreditations and be able to provide our customers the assurance that our products are manufactured to the highest level of quality, having passed a series of comprehensive and rigorous assessments which ensures they're fit for purpose.

Euroclass reaction to fire classification
All of our products are non-combustible and achieve the best Euroclass A1 or A2-s1,d0 reaction to fire classification.

BBA Certification
The British Board of Agreement offers third party certification for the use of building products and systems in critical applications. We have a number of products certified, and are always seeking to increase our portfolio.

BES 6001
The BES6001 accreditation shows that our products have been made with constituent materials that have been responsibly sourced.

ISO
All of our manufacturing plants are certified to ISO standards.

BRE Green Guide Rating A+
We have received the BRE Green Guide Rating A+ for the best environmental performance for the majority of our products.

EUCEB
An independent certification authority that guarantees our Mineral Wool products are made of certified bio-soluble fibres.

CE Marking
All our products are CE marked where required.

RAL
A German quality mark confirming Knauf Insulation's Rock Mineral Wool products (including those made in the UK) are made of certified bio-soluble fibres and can be safely used for thermal and acoustic purposes.

UKCA Marking
All our products are UKCA marked where required.

DECLARE 'Red List' Free
Our entire Glass Mineral Wool range of products has been awarded the DECLARE 'Red List Free' label. This allows product transparency disclosure that identifies where a product comes from and what it is made of.

Eurofins Indoor Air Comfort Gold Certified
The Eurofins Gold certification for Indoor Air Comfort means our Glass and Rock Mineral Wool products are the best-in-class low VOC emissions and are therefore the ideal solution for indoor air quality.

Made in Britain
As a member of the Made in Britain organisation, it helps customers identify that our Mineral Wool products are manufactured in the UK.

EN 15804
Our Environmental Product Declarations (EPD) are in line with the BRE and European standard EN 15804.

MINERAL WOOL INSULATION PROVIDES A UNIQUE COMBINATION OF BENEFITS

THERMAL

The energy saving properties and thermal performance of insulation keep buildings warm in winter and cool in summer.

The bigger the temperature difference between the inside and outside of a building, the faster the building will lose heat in winter and gain heat in summer.

Our mineral wool insulation solutions help maintain a stable inside temperature by slowing heat transfer by convection, conduction and radiation.

By insulating a property properly, energy can be saved either from the heating system when heating a cold building, or from the air conditioning system when cooling a warm building.

FIRE SAFETY

The fire performance of our insulation gives it the ability to provide passive fire protection.

Buildings must be designed and constructed to minimise the risk of fire and its spread should it occur, as well as to maximise the structure's stability and the ability of occupants to escape unharmed.

As well as acting as a barrier to the fire, our non-combustible mineral wool insulation solutions will not add to its development stages, minimising its overall effect and consequences.

It is widely known that buildings account for 40% of worldwide carbon emissions, and increasing their energy efficiency continues to be a priority for governments as they try to combat climate change. Whilst the primary role of insulation is to provide thermal performance, choosing the right insulation will also determine a building's acoustic and fire safety properties as well as the level of comfort it provides for its users. Our mineral wool insulation solutions provide a **unique combination of performance**.

ACOUSTIC

The acoustic performance of insulation can help create an improved internal environment for building occupants.

Protection from noise contributes towards the 'quality of life' afforded by dwellings, and a healthy, productive and attractive environment in offices, hospitals, schools and other non-domestic buildings.

Our mineral wool insulation solutions provide high levels of sound absorption and noise reduction in new build or within existing buildings through retrofit, to provide improved sound insulation and acoustic comfort.

COMFORT

Insulation can help create dry, comfortable indoor environments and buildings and have a major impact on the health and wellbeing of their users.

By preventing air leaks, uncontrolled condensation and possible mould spores, mildew or microbial organic compounds, a well-insulated, airtight building envelope also contributes to the health of a building — particularly if combined with efficient installation of the solutions and a controlled ventilation system.

Our mineral wool insulation solutions provide all of the above benefits, but more importantly, thanks to our ECOSE® Technology, they contribute to high levels of indoor air quality and were the world's first products to be awarded the Eurofins Gold Certificate for Indoor Air Comfort.

THERMAL INSULATION FOR ENERGY-EFFICIENT BUILDINGS

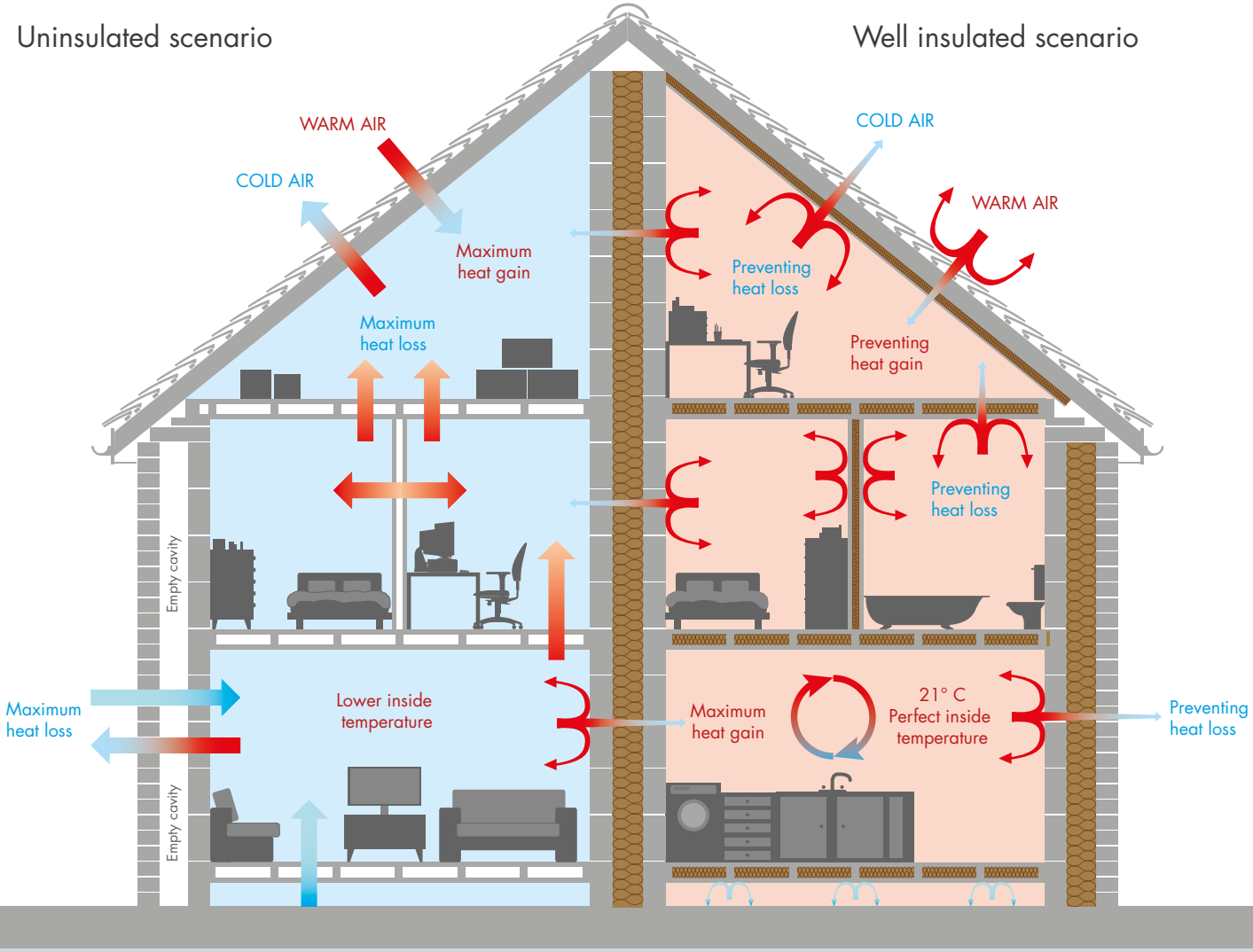
THE ENERGY SAVING PROPERTIES OF INSULATION KEEP BUILDINGS WARM IN WINTER AND COOL IN SUMMER

The bigger the temperature difference between the inside and outside of a building, the faster the building will lose heat in winter and gain heat in summer. Insulation helps maintain a stable inside temperature by slowing heat transfer by convection, conduction and radiation.

INSULATION IS CRITICAL ACROSS ALL SECTORS

A vast amount of energy is lost through the fabric of a building. Insulation incorporated into fabric can make a profound contribution to the building's long-term energy saving.

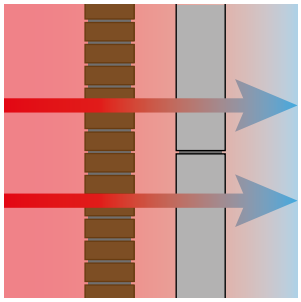
Increasingly, designers have the responsibility to improve a building's energy efficiency by designing an envelope to best achieve maximum thermal performance according to the building's function and activity. Different sectors have different requirements - for example, balancing heat retention and cooling in public and commercial buildings is often a key consideration, whereas for residential buildings, higher insulation and heat retention alone have a direct impact on the carbon emissions (and bills) associated with heating, and is the overriding design parameter.



HOW MINERAL WOOL PROVIDES PROVEN REAL ENERGY EFFICIENCY PERFORMANCE

Mineral Wool insulation is a poor conductor of heat, meaning that warm or cold air won't transfer through the material resulting in a consistent temperature inside the building. It does this by having a spider's web type structure inside of the material with millions of small air pockets that catch any heat or noise transfer from external sources, making it one of the most efficient ways of insulating any property.

It is also easier to install as the fibrous structure of the material fills the space; meaning that any imperfections in installation are negated and therefore gives a better real performance.



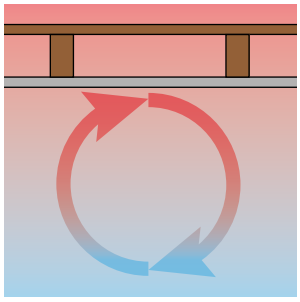
Conduction

Conduction is the transmission of heat through a material, or from one material to another, through direct contact, and can take place in solids, liquids and gases.

How conduction is reduced

To reduce heat transfer by conduction, Mineral Wool has a very small amount of solid material in relation to void.

Additionally, the solid material consists of thin connecting walls, or discontinuous fibres.

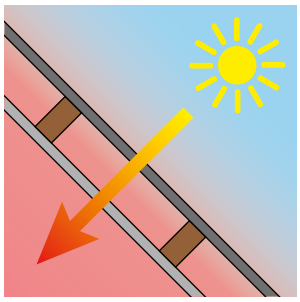


Convection

Convection occurs in gases and liquids. If a hot surface is in contact with cooler air, heat is conducted to the air. This air then becomes warmer and therefore less dense than the adjacent cooler air. The warmer, lighter air rises upwards and is replaced by cooler air, causing a continuous flow of air by natural convection – gradually removing heat from the hot surface to the air. The process is reversed if warm air comes into contact with a cold surface.

How convection is reduced

To reduce heat transfer by convection, Mineral Wool contains small voids and air pockets within which air movement is minimised.

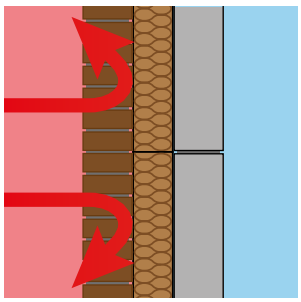


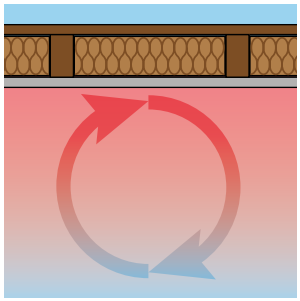
Radiation

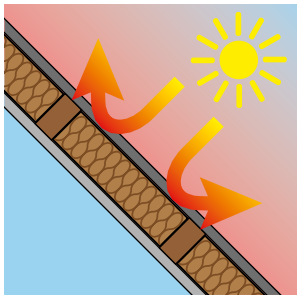
Radiation is the transmission of infra-red radiant energy from a 'hot' surface to a 'cold' surface through air or a vacuum. Radiant energy moves through space without heating anything in between – the energy is only absorbed when its path is blocked by an object which absorbs the energy and converts it to heat.

How radiation is reduced

The transmission of heat by radiation is stopped when it is absorbed into the surface of a material such as Mineral Wool, which results in a rise in temperature of the material. However that material will in turn emit radiant energy. For higher levels of resistance to radiated heat loss, "low emissivity" surfaces (e.g. metallic foil faced finish) can be added to our products.







NON-COMBUSTIBLE INSULATION FOR SAFER BUILDINGS

Reaction to Fire and Fire Resistance are two different, but very important considerations when it comes to designing a building.

Our non-combustible mineral wool insulation solutions offer the best performance when it comes to both Reaction to Fire and Fire Resistance, enabling building designers and specifiers to develop effective and robust fire safety strategies when they design new buildings.

REACTION TO FIRE - How quickly will the fire develop?

The measurement of how a material or system will contribute to the fire development and spread, particularly in the very early stages of a fire when evacuation is crucial.

All insulation materials are given a Euroclass reaction to fire classification in accordance with BS EN 13501: *Fire Classification of construction products and building elements*, helping specifiers to understand how much 'fuel' will be added to the building as well as how a material will contribute to the development stages of a fire when evacuation is crucial.

Testing is carried out to determine the performance of materials in terms of fire behaviour, smoke production and flaming droplets, giving a range of classification possibilities as shown over the page.

Our entire range of Mineral Wool products are non-combustible.

By choosing non-combustible insulation materials, building designers and specifiers can design out the risk of fire within the building fabric from the start.

FIRE RESISTANCE - How long can the construction withstand the fire?

The measurement of the ability of a material or system to resist, and ideally prevent, the passage of fire from one distinct area to another.

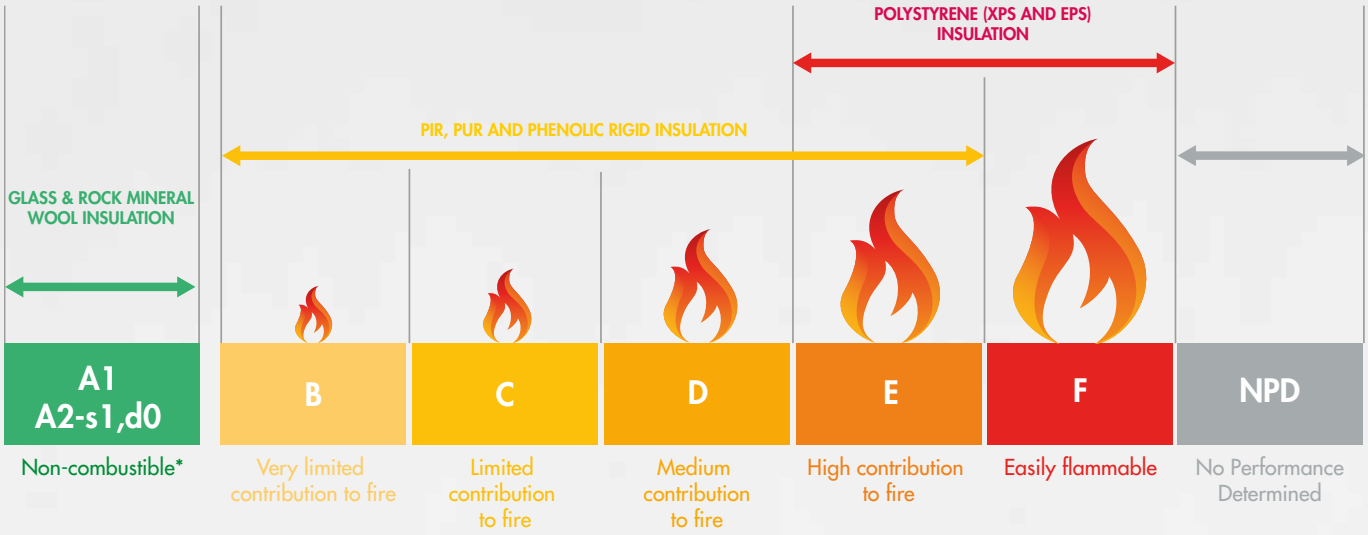
Building regulations require certain elements such as partitions, separating walls, ceilings and beam and column constructions to provide specified amounts of fire resistance.

Fire protection classifications are normally reported in terms of a period of fire resistance, for example 30, 60 or 90 minutes. These classifications relate to what is known as the integrity (E), thermal insulation (I) and load-bearing capacity (R) of building elements. Simply, this means how elements — either in combination or individually — stop a fire spreading, how they restrict temperature rise and how the elements' load-bearing capacity is maintained.

A range of our solutions have been tested for use in a variety of fire-resistant applications, providing fire resistance periods ranging from 30 to 240 minutes to assist the design of safe buildings.

Our non-combustible fire-resistant solutions help inhibit fire spread, maintain structural integrity and limit the spread of fire and smoke from one area to another, providing safe buildings for occupants, and added peace of mind for specifiers.

TYPICAL INSULATION PRODUCT EUROCLASS REACTION TO FIRE CLASSIFICATIONS



*Approved Document B for Wales defines A2-s1,d0 as limited combustibility
Notes: Other classifications of smoke and flaming droplets within A2 are classed as limited combustibility. (Not shown here as no insulant falls in that category).
Flames are illustrative only.
NPD = No Performance Determined. In this instance no performance is declared and information regarding reaction to fire performance is unknown.

AVAILABLE INSULATION CPD COURSE

MINIMISING FIRE RISK THROUGH MATERIAL CHOICE:

Understanding the Euroclass reaction to fire classification system to enhance fire safety.

- The difference between Reaction to Fire and Fire Resistance
- The importance of the Euroclass reaction to fire classification system
- How insulation products are tested and classified
- Minimising risk through material choice

Visit knaufinsulation.co.uk/technical-support/cpd to book your CPD today!

ACOUSTIC INSULATION FOR QUIETER AND HEALTHIER BUILDINGS

Our Glass and Rock Mineral Wool solutions achieve the highest standards for sound absorption, so whatever your application, there's a Knauf Insulation product for it.

Noise pollution costs Europe €24Bn per year in lost productivity, health costs and impaired learning [1]. That's why we need better buildings designed with acoustics in mind.

But there's a strong case to go beyond minimum regulatory levels.

Our Mineral Wool insulation solutions are excellent at absorbing sound, creating homes, offices, schools and hospitals that are quieter, healthier and more productive.

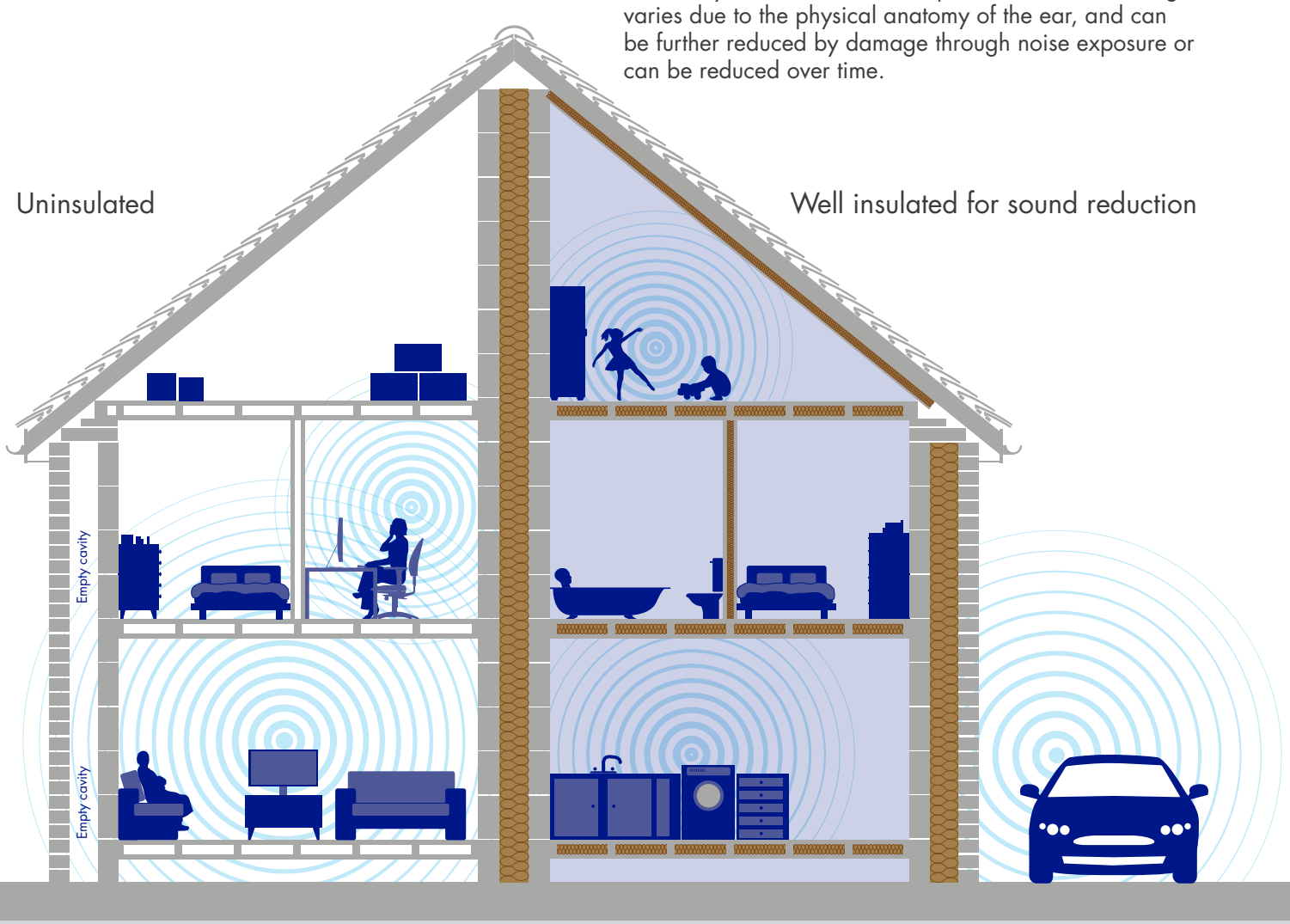
[1] https://blog.ted.com/9-ways-that-sound-affects-our-health-wellbeing-and-productivity/

WHY REDUCING NOISE IS IMPORTANT

Sound can affect us in a variety of ways. In our everyday lives, we value those things that protect our health in noisy workplaces, promote the amenity values of our homes and outdoor spaces, and maintain our privacy in offices and consulting rooms. These and many other aspects of our lives rely on the appropriate consideration of how noise is controlled, in our ever-busier world.

THE BASICS OF ACOUSTICS

The term 'acoustics' encompasses the combination of complex factors which affect the generation, propagation and perception of sound in the environment. Sound is a sensation detected by the ear as a result of pressure variations set up in the air by a vibrating source. Our ability to detect a sound varies depending on its frequency composition, with a young and healthy human ear being able to detect sounds between the frequencies of approximately 20 Hz and 20 kHz. Our ability to accurately detect individual frequencies within that range varies due to the physical anatomy of the ear, and can be further reduced by damage through noise exposure or can be reduced over time.



THE DIFFERENCE BETWEEN SOUND INSULATION AND SOUND ABSORPTION

Sound insulation is the ability of a material to prevent the transmission of sound energy through it. The sound insulation performance of a construction element is critical when considering the ingress of noise from outside to inside via the building envelope or from one room to another through an internal or separating wall or floor. Typically, the higher the mass of a material, the better its sound insulation properties.

Sound absorption describes the ability of a material to prevent sound energy from reflecting from its surface. Sound energy is absorbed by a material by converting to heat energy; generally speaking, materials that are 'soft' are better sound absorbers than materials that are rigid and 'hard'. Sound absorbing materials are often used to treat walls or ceilings to prevent unwanted echoes (reverberation) within large spaces.

USING ABSORPTION FOR NOISE REDUCTION

Glass and Rock Mineral Wool insulation products have excellent acoustic absorption performance. The use of these materials in carefully specified constructions with good detailing can contribute significantly towards the requirements stipulated in building regulations.

The presence of a sound absorbing material such as Mineral Wool within the cavity can improve the overall sound insulation rating of a double leaf partition by as much as 10 dB compared with an empty cavity.

INTRODUCING SEPARATION FOR ENHANCED PERFORMANCE

Introducing separation in combination with absorption can achieve much larger improvements in sound insulation. Leaves must be independent i.e. there should be no physical connections between the two leaves of the construction.

When introducing separation, a cavity of at least 50mm wide prevents 'mass-air-mass resonance', whereby the air between the two leaves acts as a spring and transmits sound energy at a specific frequency through the partition. This resonant frequency is dependent upon the mass of the leaves and the cavity depth. The cavity should also contain a sound absorbing material to prevent the build-up of reverberant sound.

Want to find the right product for your application?

Use our Noise Reduction Insulation Product Finder by visiting

knaufinsulation.co.uk/acoustics

Simply select the details of your project - the tool will tell you which sound insulation regulations apply and which products to use to achieve the acoustic performance you require.

AVAILABLE INSULATION CPD COURSE

SOUND INSULATION PRINCIPLES FOR BETTER BUILDING ACOUSTICS:

Science, standards and solutions:

- How sound insulation is measured
- Various solutions to improve sound insulation performance
- How sound absorbent Mineral Wool contributes towards high levels of sound insulation

Visit knaufinsulation.co.uk/technical-support/cpd to book your CPD today!

INSULATION FOR MAINTAINING A COMFORTABLE ENVIRONMENT

Indoor air quality is moving up the agenda and VOCs are in the spotlight.

The government's Clean Air Strategy 2019 seeks to address poor indoor air quality by reducing emission sources of VOCs and improving building ventilation. Public England's Indoor Air Quality guidelines identify reducing indoor-generated formaldehyde as of the greatest importance due to its prevalence and known health impacts.

WHAT ARE VOCS?

Volatile Organic Compounds (VOCs) are chemicals that evaporate at room temperature, becoming vapours or gases.

Common sources of VOCs include domestic cleaning products, furnishings, office printers and building materials e.g. paint, insulation etc. Many different chemicals are classed as VOCs, but one of the most common in building materials is formaldehyde, which is classed as a VVOC (Very Volatile Organic Compound).

WHY ARE VOCS IMPORTANT?

VOCs are one of the main causes of poor indoor air quality, particularly as buildings become more airtight.

VOCs and indoor air pollution can have long-term consequences on the health of installers and later the building occupiers – for example, skin and eye irritation, nausea, headaches and asthma.

HOW TO LIMIT VOCS

The construction sector is under pressure to reduce sources of VOCs in buildings.

NICE (National Institute of Health & Care) guidelines recommend architects, builders, developers and landlords favour materials that only emit low levels of VOCs and formaldehyde.

The British Lung Foundation recommends using building materials with low VOC emissions.

We have already seen the impact of this on the paint industry – regulation changes have resulted in the development of low VOC paints, which are increasingly popular with consumers. This means VOC emissions are now an essential consideration in deciding which products to stock, specify and install to reduce the risk of being left behind by changing building regulations and customer demand.

HOW TO CHOOSE INSULATION WITH LOW VOCS

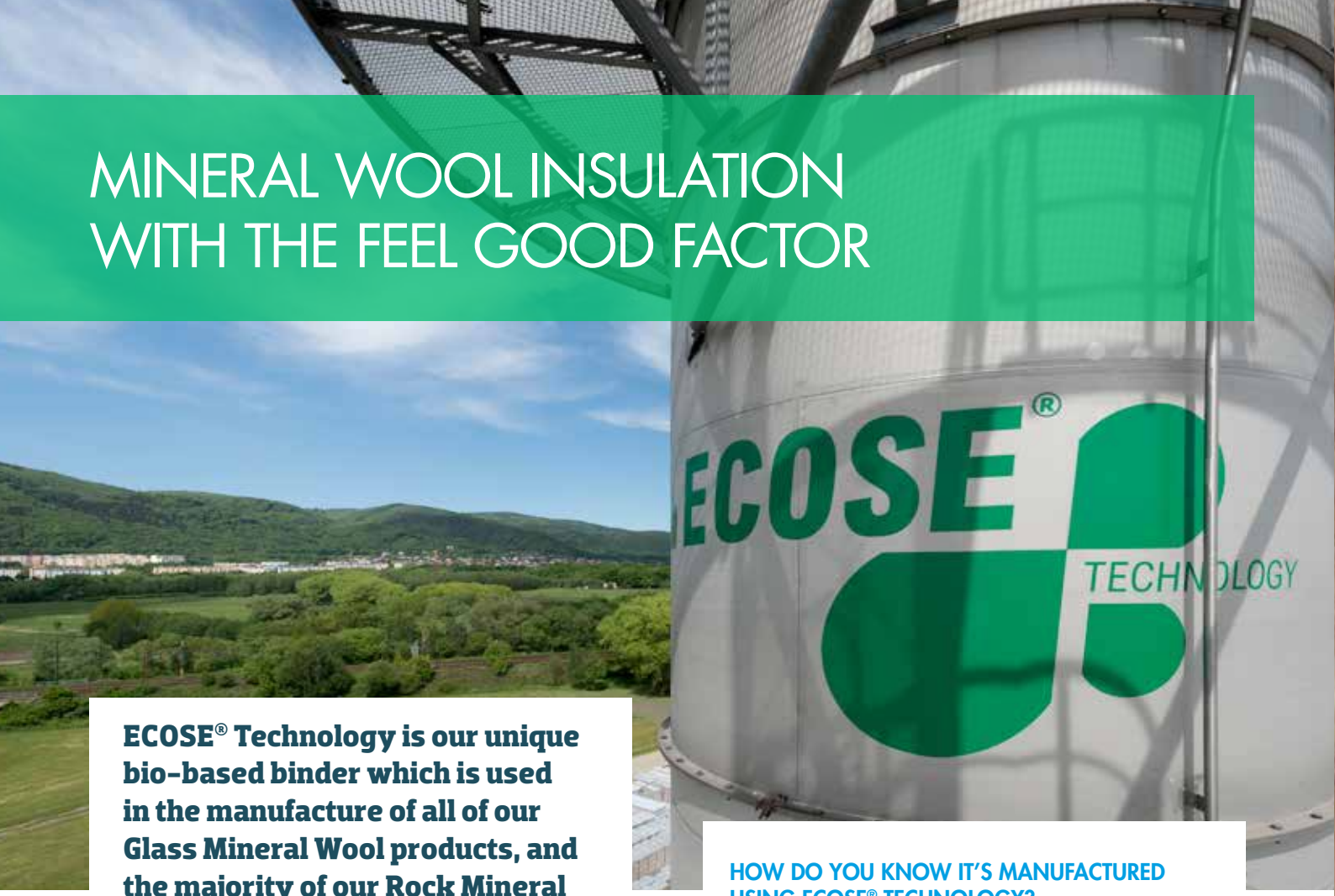
The best way to be sure that a product does not compromise indoor air quality is to look for independent certification by Eurofins. Products that meet the highest standards for VOC emissions are certified 'Indoor Air Comfort GOLD' by Eurofins.

All of our Blown Glass Mineral Wool products and cured Glass and Rock Mineral Wool products manufactured using ECOSE® Technology have been awarded Eurofins 'Indoor Air Comfort GOLD' certification.

HOW MINERAL WOOL HELPS CREATE COMFORTABLE INDOOR ENVIRONMENTS

When installed correctly, our Mineral Wool insulation solutions help maintain stable inside temperatures by slowing heat transfer, keeping buildings warm when it's cold outside, and cool when it's warm. By preventing air leaks, uncontrolled condensation and possible mould spores, mildew or microbial organic compounds, a well-insulated, airtight building can help maintain a healthy environment.

MINERAL WOOL INSULATION WITH THE FEEL GOOD FACTOR



ECOSE® Technology is our unique bio-based binder which is used in the manufacture of all of our Glass Mineral Wool products, and the majority of our Rock Mineral Wool products.

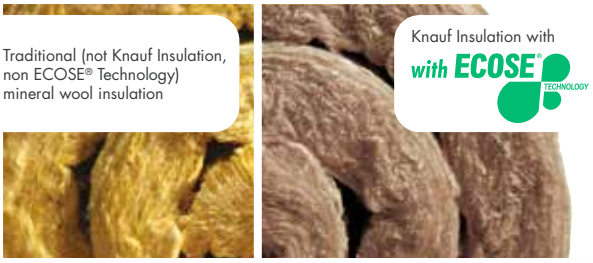
Our Mineral Wool made with ECOSE® Technology contains no added formaldehyde or phenol. This means our insulation generates very low levels of dust, increasing the comfort of those handling it. ECOSE® Technology makes our insulation soft to touch and easy to handle.

It is made from natural raw materials that are rapidly renewable and is 70% less energy-intensive to manufacture than traditional binders, so it is kinder to the environment too.

with ECOSE® TECHNOLOGY

HOW DO YOU KNOW IT'S MANUFACTURED USING ECOSE® TECHNOLOGY?

Products manufactured using ECOSE® Technology have a natural brown colour so you can see, as well as feel the difference.



with ECOSE® TECHNOLOGY

- Soft to touch
- Low levels of dust
- Low VOCs*

*Volatile Organic Compounds

***70%** less*
energy intensive to manufacture than traditional binders

No added formaldehyde or phenol

THE ONLY UK MANUFACTURER OF BOTH GLASS AND ROCK MINERAL WOOL INSULATION

CURED GLASS MINERAL WOOL

There is a broad spectrum of insulation materials available on the market, with an equally broad variance in form, performance, sustainability, cost-effectiveness and availability.

All our Mineral Wool products meet the highest specifications and have demonstrated excellent rounded performance in the most demanding projects, including those built to the Passivhaus standard.

EUCEB - an independent certification authority that guarantees our Mineral Wool products are made of certified bio-soluble fibres. This applies globally.

Glass Mineral Wool

Our high performance Glass Mineral Wool insulation solutions contain up to 80% high quality recycled content, to which sand, limestone and soda ash is added before being melted in a furnace. The molten glass is spun to form millions of fine strands of wool.

To manufacture our Cured Glass Mineral Wool, we use our unique bio-based binder, ECOSE® Technology, to bind the mineral wool together to form a mat of material which is then cured in order to form the final product. The density of the product determines whether the insulation is a lightweight quilt supplied in rolls, a flexible slab or a rigid slab, and its thermal insulation value.

Our Blown Glass Mineral Wool is an un-bonded, virgin fibrous insulation, which is produced in the same way as the Cured Glass Mineral Wool, however, it is not cured but produced as a loose-fill product to be blown into cavity walls, partitions, timber frame walls and ceilings.

Rock Mineral Wool

Our Rock Mineral Wool insulation solutions are mainly made from volcanic rock, typically basalt and/or dolomite. An increasing proportion is now recycled material from slag, a waste product from blast furnaces. The raw materials are melted and then spun into fine strands of wool. A binder is used to bind the wool together to form a mat of insulation, which is then cut into slabs or wired mattresses. Most of our Rock Mineral Wool products use our ECOSE® Technology.

Industry-leading Compression Packaging

Our industry-leading compression packaging technology (up to 10:1 ratio across our Glass Mineral Wool products) allows for more product per pack, therefore less packaging used, less trucks on the roads and reduced transport related carbon emissions. All of which contributes to a low lifecycle impact. It also means our customers require less storage space, and less carrying and handling when compared to other products. As part of our continuous improvement process, we continually strive for further developments in our manufacturing and supply chain operations to enhance quality and minimise our impact on the environment.

RAL – a German quality mark confirming Knauf Insulation's Rock Mineral Wool products (including those made in the UK) are made of certified bio-soluble fibres and can be safely used for thermal & acoustic purposes.

		Glass Mineral Wool	Blowing Wool	Rock Mineral Wool
Features	Naturally non-combustible	✔	✔	✔
	Compression packed to limit transport & warehouse requirements	✔	✔	
	Strand type	Long strands giving high levels of tear strength	Loose to allow blown installation	Short strands giving high levels of compressive strength
	Available in slabs	✔		✔
	Available in rolls	✔		
	Available loose for blown installation		✔	
	Available in wired mattresses			✔
	Available with a variety of facings	✔		✔
Applications	Residential buildings	✔	✔	✔
	Commercial buildings	✔	✔	✔
	New build	✔	✔	✔
	Refurbishment	✔	✔	✔
	Fire protection			✔

Krimpact® Technology

A number of our Rock Mineral Wool products are manufactured using Krimpact® Technology which gives our products consistent density throughout, combined with superior impact and compression resistance. Krimpact® Technology aligns fibres in the Mineral Wool in such a way as to dramatically increase compressive strength and its ability to resist heavy loads.

WE PROVIDE EXPERT ADVICE AND SUPPORT TO OUR CUSTOMERS

At Knauf Insulation, we aim to support our customers to ensure our products are specified, procured and installed with the highest quality standards. Our dedicated Sales, Technical, Specification and Customer Service teams are here to provide advice to our customers and specifiers.

Technical Support Team

We offer expert advice on all our products and solutions through our in-house Technical Support Team.

With over 20 years insulation experience, our Technical Support Team provide free, expert advice for builders merchants, distributors, stockists, architects and any other customers involved in the construction industry and the wider specification community.

As well as technical advice, our Technical Support Team can provide U-value calculations, NBS clauses and 3D Heat Loss/U-value Calculations.

You can contact the team on 01744 766 666 or alternatively by email technical.uk@knaufinsulation.com

Specification Team

If you need project specification support over the phone, online, on-site, or wish to book a CPD presentation we have a dedicated team of Project Specification Managers who cover all areas of the UK and Ireland.

Visit knaufinsulation.co.uk/contact-finder to find your local representative.

Marketing Support

We provide a fast turnaround on sample and literature requests, eliminating delays with planning and client approval of material, so that projects begin on time.

All our collaterals are also available on our website at knaufinsulation.co.uk/all-downloads

Specifications Documentations and Tools

Building Information Modelling (BIM)

Our BIM objects are not only easily accessible and user-friendly; they are also packed with reliable, comprehensive data, such as DOP, EPDs and CE marking. They are available on our website at knaufinsulation.co.uk/technical-support/building-information-modelling-bim

Insulation CAD Details and NBS Specification Clauses

All our CAD details are available on our website in .DWG format and fully compatible with AutoCAD. You will need a version of AutoCAD or a .DWG viewer installed on your computer to view or use these files. They are available on our website at knaufinsulation.co.uk/technical-support/nbs-cad

BBA certifications

The British Board of Agrément offers third party certification for the use of building products and systems in critical applications. It is also incredibly important to specifiers, as it provides them with assurance that the product is manufactured to the highest level of quality, which have passed a series of comprehensive and rigorous assessments, ensuring the product is fit for purpose. You can find our BBA certificates at knaufinsulation.co.uk/downloads/bba-certificates

Continuing Professional Development (CPD)

Our range of CPDs provide an essential service to architects and specifiers, helping them keep up to date in a rapidly changing and evermore challenging environment. knaufinsulation.co.uk/technical-support/cpd

EXPLORE OUR ONLINE U-VALUE CALCULATOR

Free, accurate and easy to use.

Do the seconds, minutes and hours quickly add up when conducting multiple U-value calculations per day?

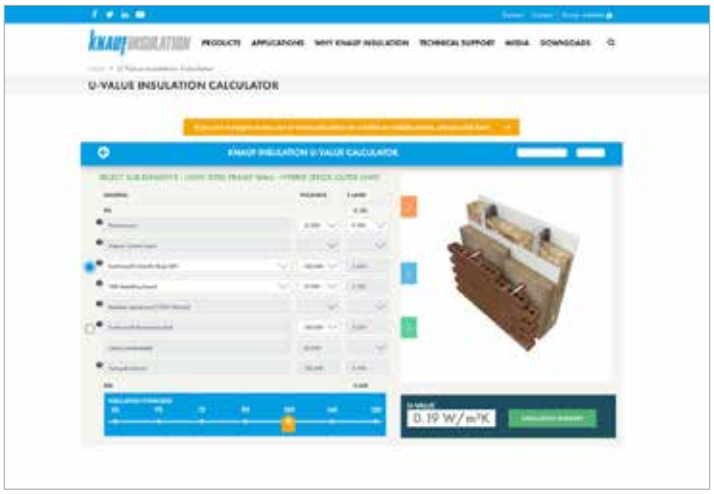
We are aware that your time is precious. With this in mind, we have launched our brand NEW U-value calculator that is quick and easy to use.

Why use our online U-value calculator?

You can use our online U-value calculator to give you quick access to accurate U-values.

- Simply select the construction type and use the drop down menus to change individual components or corrections in the template.
- Once the U-value is calculated, you will be recommended the most suitable Knauf Insulation Glass or Rock Mineral Wool product for your roof, wall or floor application. You will be able to download detailed calculations, BIM files and product data, or send a copy of the calculation to your email address.
- If you need further assistance or information, our Technical Support Team will work with you on your project.

Our calculator follows the methodology of BRE calculations, in accordance with BS EN ISO 6946 and conventions given in BR443.



All solutions included in the tool are non-combustible

We believe we have the most comprehensive and up to date range of materials in both Glass and Rock Mineral Wool to choose from, so you can be confident your U-value calculation is accurate and complies with Building Regulations.

Start your next calculation today by visiting knaufinsulation.co.uk/uvalue-calculator

KNAUF INSULATION

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sales.uk@knaufinsulation.com

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technical.uk@knaufinsulation.com

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www.knaufinsulation.co.uk/contact-finder

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