

# OEM Insulation

with ROCKWOOL Core Solutions



# Why choose ROCKWOOL stone wool?

Stone wool is a leading industry standard for insulation used across all forms of original equipment manufacturing (OEM), from offsite building construction elements to manufactured industrial systems.

Engineering stone wool solutions into your products and systems can greatly enhance end results for you and your customers – when you wish to achieve high standards of fire protection, acoustic absorption/insulation, thermal performance and durability.

ROCKWOOL stone wool has fire resilient, thermal and sound insulating properties built-in to its smart fibre structure. By harnessing the power of stone – one of the world's most abundant natural resources – we integrate insulation with the exact properties and measurements your process and system require, creating the right results for you.

We call these the **7 Strengths of Stone:**<sup>1</sup>



## Fire resilience

Enhancing fire protection within industrial, commercial or domestic settings, to improve safety and comply with local building regulations. ROCKWOOL stone wool is non-combustible and can resist temperatures up to 1,000°C (1,800°F).



## Thermal properties

Regulating temperatures and comfort to ensure optimal conditions are met. Improving energy efficiency also leads to cost and energy savings for your customers, as well as building owners and occupants.



## Acoustic capabilities

Noise pollution affects around one in five Europeans.<sup>2</sup> ROCKWOOL stone wool's acoustic absorption abilities help to reduce decibel levels from both internal and external sound transfer.



## Robustness

Stone wool's performance does not deteriorate over time. It retains the same dimensional stability throughout the lifetime of the space where it is installed.



## Aesthetics

Design remains a priority for architects, the construction industry at large and many businesses. The adaptability of stone wool can suit a wide range of plans and structures.



## Water properties

Protection against the elements is vital during manufacturing, construction and when the end-product is in use. Stone wool's non-hygroscopic nature ensures that it does not absorb and retain moisture from the air – meaning that the insulation's thermal and structural performance, as well as its durability, remains unaffected by exposure to moisture. It will continue to withstand wear and pressure.



## Circularity

Stone wool is highly sustainable. It can be recycled indefinitely, removed at the end of a building's lifetime and reused again and again – reducing waste and having a positive environmental impact.

We can help you find the right balance of these strengths – with a turnkey solution that is suitable for your assembly, process, application and end-line use. The products we engineer do not just have one strength built in – but all the 7 Strengths of Stone.

ROCKWOOL stone wool can be easily customised to suit individual requirements and dimensions. It's also easy to handle, work with and integrate into your manufacturing process and final products.

At ROCKWOOL Core Solutions we offer flexible and adaptable solutions to meet your precise needs. Our personalised approach, open-minded vision and tailor-engineered solutions are just a few of the reasons why Original Equipment Manufacturers (OEMs) across Europe and beyond work with us to integrate quality stone wool insulation into their finished products and systems.



# Who we are

ROCKWOOL Core Solutions is a dedicated, specialist unit within the ROCKWOOL Group, committed to providing customised solutions for OEMs in one comprehensive service package. Far more than just a provider of raw materials, we work to form a true partnership with you – acting almost as an extended external department of your business.

Curiosity and innovation are at the heart of our process. Our knowledgeable team of experts source and tailor solutions based on your performance needs, listening to you to learn about your challenges and goals – then seeking out the right answers.

Thanks to the innovation capability offered by our group R&D teams, together with our mix of global expertise, local knowledge and connections, we can even improve upon those initial goals.

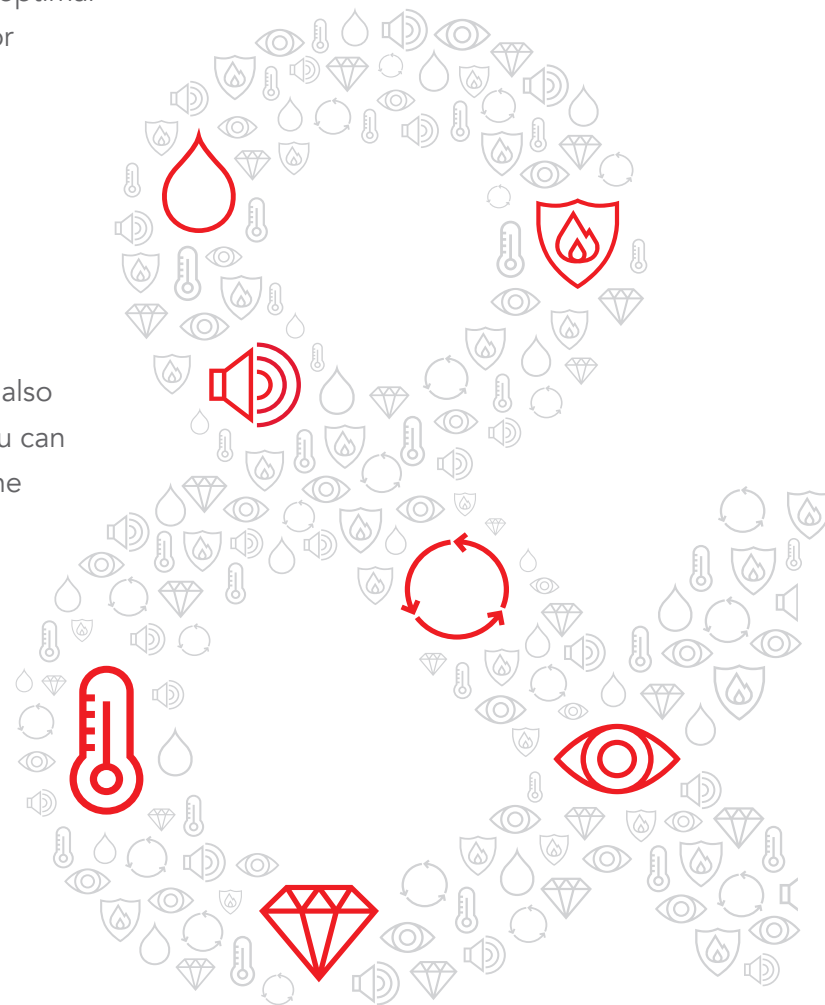
Everything we do is encompassed by a simple philosophy: **The Power of &<sup>3</sup>**

With ROCKWOOL Core Solutions, you get products that provide the best of the 7 Strengths of Stone, combined with a service that is tailored to focus on your priorities.

Whether your solutions and customers require optimal fire protection, high-level acoustic absorption or best-in-class energy efficiency, our service will look to easily engineer these qualities into your products and processes.

We develop partnerships based on a close, consultative approach, working together to understand your manufacturing and assembly process and advising on the right solutions. By also testing the customised insulation we create, you can be sure it is ready to add to your products as the core material of choice.

Communicating with your supply chain means we can also allocate packaging that is easily integrated into your existing processes, and is provided in-sync with a just-in-time delivery system.



Our approach is about more than just the final product. We will adapt our solutions to suit your production line, processes and budgets, to find an answer that is both sustainable and profitable for your company.

Curious and open-minded, our expert team will tackle the challenges of your new and innovative projects – asking questions first, then developing a solution that works. Understanding any obstacles that you face, the context of your products and their final use helps us uncover the right solution – one that is effective and competitive at the same time. We can help streamline the 'go-to-market' strategy of the system with the right performances it needs.



# Tailored quality to meet your challenges

At ROCKWOOL Core Solutions, we can work with you to consider both new and existing market trends, and the drivers of change that shape your operations.

Whatever your industry or end-line product, we can help you navigate these hurdles and succeed in your goals. Our customised stone wool insulation will be specifically engineered for your products and processes, helping you to overcome the unique challenges you face every day.

## Sustainability

Stone wool improves thermal performance wherever it is applied, reducing energy consumption levels for more sustainable living. It can also be reused and recycled at the end of a building's lifetime, contributing to a circular economy.<sup>4</sup>

Our customised solutions deliver the exact shape, size and dimensions of material required for your applications – limiting your production waste. We also have a service that can take production waste for recycling. This reduces the environmental impact not just of your manufacturing operations, but that of the construction firms, building owners and occupants or workers who directly and indirectly use and benefit from your products.

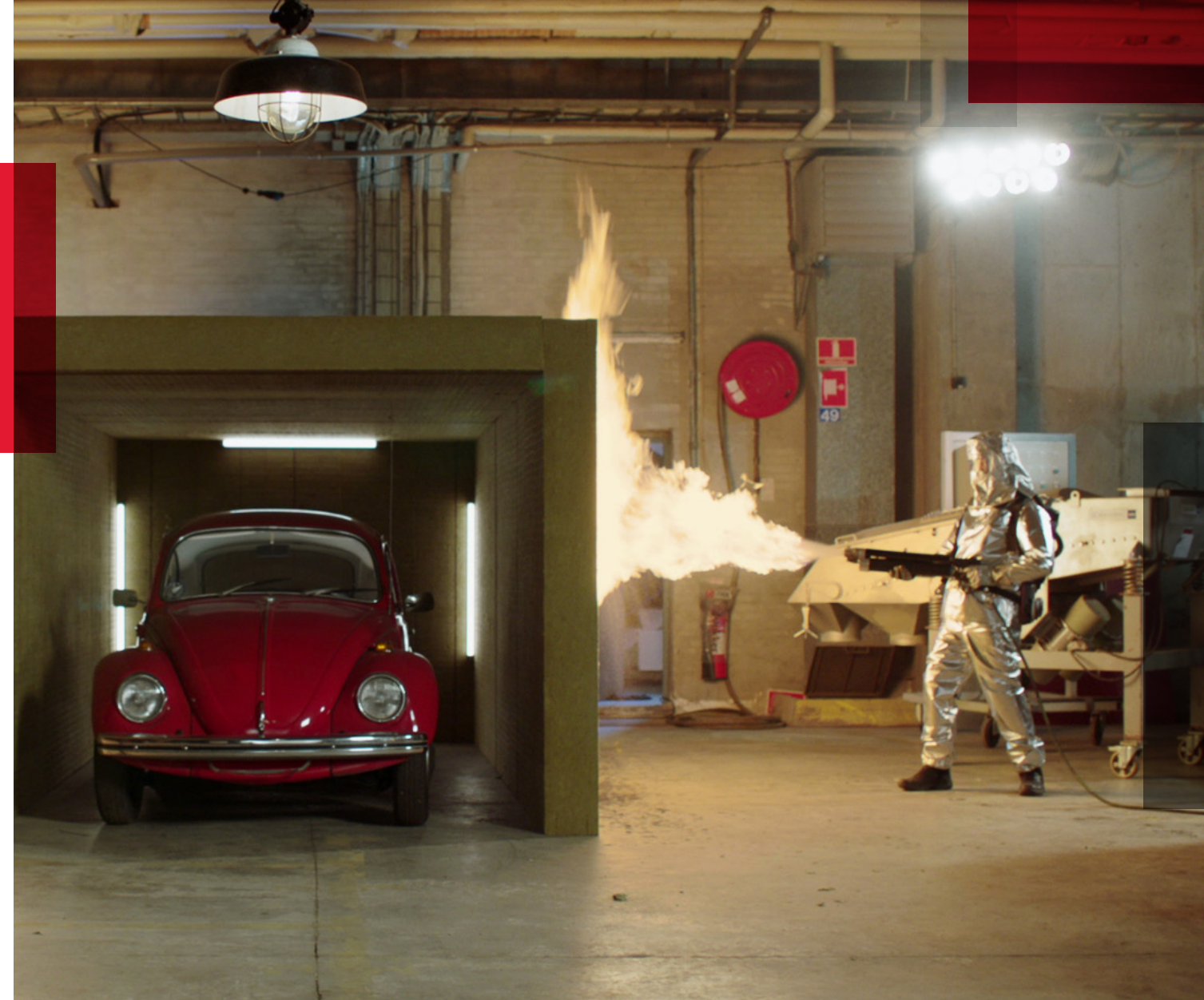
When stone wool is integrated, your solutions will have sustainability built-in. Take on the increasing demands of a circular economy, meet and exceed green standards, and have a positive impact on our planet.

## Fire Safety

Our stone wool is non-combustible and does not emit toxic smoke if exposed to high heat levels, or when coming into contact with fire. This acts to protect people from death or serious injury. Using ROCKWOOL stone wool can also support your final product or system to reach the highest fire class rating.

Fire resilience can take on even greater importance depending on the space, product or piece of equipment that is to be insulated. With fire doors and industrial ovens, for example, fire performance will be a number one priority, so you may require specific solutions focused on fire resilience.

For fire doors, this is crucial for meeting EU Construction Products Regulation standards of fire resistance and reaction (EN-16034).<sup>5</sup> Our stone wool can also help to meet standards for a range of applications, regarding fire classification for Building Material (EN-13501-1).<sup>6</sup>



Whatever your shape, size and space requirements, our insulation is **Euroclass A1 classified** and complies with **European REACH regulations**.<sup>7</sup>

## Thermal Resistance

Effective protection against excessive cold and heat can be required for a whole range of applications, depending on primary use. ROCKWOOL stone wool is adaptable and a natural insulator, which can be used to help maintain the desired indoor comfort for a residential setting, or combat uncomfortably high or low temperatures in an industrial setting. In turn this also acts to reduce heating, cooling and ventilation costs.

We can provide support to create thermal solutions that meet your requirements, and those of your customers – whether you need to retain or block the transfer of hot or cool air.

Our insulation can be tailored to your specific needs regarding thermal conductivity (lambda value). We are able to engineer tailored thicknesses to meet your particular thermal resistance specifications.



# OEM Experts

At Core Solutions, we are the specialist OEM division of ROCKWOOL Group.

For all your products and systems that are produced offsite in a manufacturing facility, we can tailor our high-quality insulation – creating customised stone wool solutions as a core.

Whatever business or industry you are working in, and whether you define yourself as offsite building construction or industrial manufacturing, we can partner with you to enhance product performances, optimise processes and meet your market needs.

As the offsite stone wool providers of ROCKWOOL Group, we deliver insulation value to a wider range of markets today.

We have the scope, adaptability and expertise to apply both our knowledge and quality stone wool to any form of original equipment manufacture. The following are some of the main business segments we serve.

## Offsite Construction

We work with a wide variety of offsite construction businesses, flexibly solving the challenges faced by many different companies and industries – and engaging with these markets to provide all the 7 Strengths of Stone for desired solutions.

Here is the synthesis that we are achieving.

### Prefabricated Buildings

The prefabricated building market is expected to grow at a Compound Annual Growth Rate (CAGR) of more than eight percent between 2019 and 2025.<sup>8</sup>

Working with **2D insulated elements** and **3D modular systems**, both sectors are expected to be part of this surge in the coming years, due to expanding urbanisation, sustainability factors, innovation in design and affordability.



However, they face challenges around:

- Improving industrial processes
- Unique, detailed and sometimes uniform designs
- Offsite construction taking place far from development sites
- Compliance with local building regulations in different areas

As a key partner, we can provide knowledge, support and suggest changes to make your assembling process more efficient.

Our tailor-engineered stone wool will also bring enhanced fire protection, acoustic performance and thermal efficiency to your final system if needed.

We provide recommendations of stone wool insulation dimensions and design based on your particular manufacturing process. Our local experts can also visit facilities to be a part of your process optimisation, and adapt the engineering of our product to help streamline your process – advising on integrating our stone wool more easily, efficiently and with the highest levels of performance.

We offer a range of services – from sourcing materials to ensuring strict deadlines are met, with the correct material volumes delivered.

ROCKWOOL stone wool is non-combustible and **A1 Classified** under the European Reaction to Fire classification system (Euroclass) to prevent the spread of fire. Our solutions act to protect building occupants while also ensuring that prefabricated structures comply with strict safety regulations.

In addition, they are backed by environmental product declarations (EPDs) and can help prefabricated buildings conform to sustainable building schemes.





## Bricks

Bricks are an integral part of many structures and systems – from single family homes (SFH) to multi-unit housing (MUH) – and required performances and challenges will vary depending on use.

Those used in exterior walls can be more exposed to the elements and require strong thermal insulation properties. Bricks used within partition walls may need insulation that reduces the risk of fire spread, or sound transfer between neighbouring spaces.

Our stone wool can provide excellent thermal and acoustic performance, helping to improve indoor comfort in residential buildings – and provide effective acoustic insulation to prevent the intrusion of unwanted noise.

We can provide close tolerance capability at very high specifications when filling cavities and streamlining the production of insulated bricks. Stone wool slabs, for example, can grind to one or two faces from +/- 4mm to +/- 0.5mm. Many of our customers operate fully automatic production lines – and we can help with the key challenge of integration.

ROCKWOOL Core Solutions offer a fit for purpose solution by listening to and reviewing any request, to ensure we deliver the right choice for your business needs.

## Sandwich Panels

Within many modern constructions including industrial buildings, logistic centres, shopping malls and those using steel structures, sandwich panels can enable fast construction, economical processes and improved energy efficiency for buildings.

The industry does face a few challenges however, including:

- Sustainability
- Fire safety
- Durability and life-time performance
- Urbanisation impacts

When integrated successfully, stone wool benefits the structural performance of sandwich panels and greatly improves the thermal performance and energy efficiency of the final system.

Depending on the application that the panel is to be used in – whether roof, façade, partition wall or otherwise – we can adjust mechanical performances as required.

Fire resilience is an especially important factor. With a ROCKWOOL stone wool A1 core installed, a sandwich panel reaches the standard of A2-s1, d0 – providing far greater protection against flames than many other insulation types. It will also not emit toxic smoke, due to its non-combustible nature.

The acoustic absorption qualities offered by our stone wool cores can tackle the growing impact of noise pollution.

At ROCKWOOL Core Solutions, we can also work with you to develop improved processes – for example, when your offsite construction facility may be far from the location where your sandwich panels are applied. Due to the international reach of ROCKWOOL Group, we have manufacturing sites all across Europe (and globally) to facilitate local demand, minimising long lead times and logistical carbon footprints.

Tailored dimensions and mechanical performances mean that our insulation can adapt to fit any design, engineered to offer high quality fire resilience, acoustic absorption and thermal performance as required. We can engineer our stone wool to exhibit high performances for desired outcomes and – in addition – inherently provide all the 7 Strengths of Stone for the application regardless.





# Industrial Manufacturing

We can tailor our qualities for a range of industrial manufacturing applications. Core Solutions experts are adept at working with partners across many different industries to develop new and innovative solutions.

Whatever your manufacturing area or process, we will focus on what fits your purpose. In addition, we aim to make your solutions sustainable and profitable moving forward.

Here are some examples of areas where ROCKWOOL stone wool integration has provided effective results.



## Acoustic baffles

Many industrial applications require sound insulation to reduce noise transfer from heavy machinery – whether in commercial, industrial or residential settings. **At least one in five Europeans are currently exposed to harmful noise levels<sup>9</sup>**, which can have serious short and long-term health implications.

Some of the market segments we work with today include:

- Air handling units
- Drying systems
- Air-conditioning silencers

To preserve performance integrity when exposed to constant airflow, Core Solutions can propose specialised facing for our stone wool insulation.

The excellent acoustic absorption properties of stone wool then provide high levels of performance in the final system, protecting workers, residents and passers-by from high noise levels.

While reducing sound transfer is often the priority with these applications, we can also create bespoke solutions that reduce thermal transfer too. Many of these units use a lot of energy and generate high heat levels, requiring combinations of insulating performances specific to them – to ensure safe and efficient operation.

The balance of stone wool qualities is something we can determine in each case, in order to find the right solution for you.



## Chimney Pipe Sections

Chimneys play a vital role in many residential applications and are a prime area for heat loss – as well as concerns around fire safety. As gases are eventually released into the atmosphere, they also play a pivotal role in determining the size of a building's carbon footprint.

Using stone wool drastically improves pipe section performance. As it is non-combustible, installing our insulation limits the risk of flames spreading and ensures the insulation does not emit smoke when a chimney fire occurs. Its thermal properties also protect against the risk of heat transfer from the chimney to the roof element.

Whether you utilise steel or ceramic pipe sections in your products, we can create dedicated, tailor-engineered stone wool solutions for each. For example, we can supply granulate insulation or wire mats for steel, and stone wool slabs for ceramic – taking into account your specific manufacturing production requirements in the process.

Effective thermal insulation prevents condensation inside the chimney tube and reduces heat losses in flue gas channels, with downstream heat recovery.<sup>10</sup> Stone wool integration can make homes safer – and help contribute towards environmental or sustainability targets.



## Sound barriers

In the modern world, people are regularly exposed to unsafe decibel levels exceeding 55dB.<sup>11</sup> Traffic, heavy machinery and general urbanisation can all lead to increased noise pollution.

Alongside other properties of stone wool, integration into offsite manufactured products can provide enhanced protection for occupants, workers and passers-by against excess noise.

Common locations requiring sound barrier insulation include:

- Airports
- Residential roads
- High-speed rail
- High-speed autoroutes

Our stone wool cores are robust and durable when installed in sound barriers. They will not shift or sag – and they maintain their performance over time, with no deterioration in effect.

To further ensure this performance is maintained over the lifetime of the barriers, we can propose specialised facing to protect against the effects of cleaning – or the impact of pollution. This is especially important for applications such as car tunnels, where barriers will be consistently exposed to fumes from passing vehicles.

At ROCKWOOL Core Solutions, we can also assess decibel levels and test our suggested solutions, ensuring they meet the acoustic absorption capabilities required for your specific desired performance.

This could be anything from insulating office workers against external noise from a neighbouring railway line, to protecting passengers from aeroplane engine noise when waiting within airports.







## Industrial ovens

Heavy-duty ovens operate at incredibly high temperatures, consuming a lot of energy.

They can be a prime source of heat loss, and expensive to run when not insulated properly.

Two examples of applications we work with are:

- Bakery ovens
- Industrial thermal treatment ovens

When integrated, the high thermal performance of ROCKWOOL stone wool acts to keep hot air inside the oven, reducing the amount of energy required to heat it. This in turn saves money for operators and creates more sustainable solutions.

By helping to keep the external surface of the oven at a lower temperature, additional benefits are also provided to people nearby – who can more safely and comfortably work with and around it.

Thermal insulation protects workers from uncomfortably high temperatures, while the non-combustible

properties of stone wool also prevent the spread of flames and ensure that it will not emit smoke.

Our tailored insulation can therefore improve energy efficiency, safety and the cost-effectiveness of running large bakeries, food plants and industrial factories.

## Numerous possibilities

At ROCKWOOL Core Solutions, we go beyond existing industrial manufacturing applications. Whatever product or application you require insulation integration for, we will work alongside you in an open-minded and ever-curious way, developing the right option to meet your specific challenges.

With the added value provided by The Power of &, we will learn how to partner with you to improve your final products and processes – and customise the 7 Strengths of Stone to meet the challenges you face and the results you require.

Whenever you need circularity and sustainability, fire resilience, thermal performance, acoustic insulation, durability and robustness, ROCKWOOL Core Solutions can support you to determine the right specifications for your offsite manufactured product, and engineer the solution that works.

If we do not have a suitable product ready, our expert team will work to create one tailored to your requirements. Through analysing your process, current performance and needs, we can harness the power of stone wool and tailor it for any and all offsite applications.

## How do we work with you?

Drawing on the **7 Strengths of Stone** and **The Power of &**, we do so much more than simply supply stone wool to your business.

In fact, we work closely with your operations in a number of key ways.

## Partnership

ROCKWOOL Core Solutions aims to become an extension of your business.

At the first stage, we will learn as much as possible about your:

- Product application and final use
- Supply chain and delivery operations



- Production line process
- Dimensional and performance requirements
- Maximum budget levels

Our curiosity and drive to create the most effective solution means we may look to challenge any of these aspects, to help ensure the right results.

From here, we will work to engineer a solution that ensures close tolerance for the best dimensional fit.

With a global network of experts combined with knowledge and connections at a local level, we have the capability to support product innovation, develop your process and grow with you. By analysing processes to work out what will be effective and cost-efficient, we can also promote a greater chance of success.

## Testing and Support

Whether you are developing an entirely new product or looking to improve an existing one, we will work with you to ensure the final result meets the exacting demands of your customers, not to mention building regulations, green schemes and any other relevant regulations.

- We have more than 35 years of experience working at international and national levels.
- Our worldwide support network includes more than 20 factories, plus a large network of sub-contractors across Europe.
- This includes our international development centres and laboratories, where we thoroughly test your stone wool insulation cores to deliver maximum performance when integrated into your products. We can attend testing sessions with you and talk you through the process and outcomes, explaining each stage and what the results mean.
- We offer a wide range of laboratory tests to assess the insulation performance for your desired application. This includes testing against European standards for technical performance characteristics.

However, our support even continues beyond the point of your product's delivery to the market. We can offer ongoing aftercare to ensure the highest levels of satisfaction, efficiency and help you with any future developments.

## Innovation

Our extensive technical and design expertise can help drive product innovations and bespoke insulation solutions for your business. We provide an inventive and open-minded approach to working

with our partners, always looking to raise standards, suggest efficiencies and make recommendations for future improvements.

We will also adapt solutions to suit your production line, not just the final product. Our team will assess the manufacturing process and assembly to identify and resolve pain points and create new, more effective and efficient solutions.

Disruptions to supply chains can cause all kinds of headaches to your operations, with many businesses seeking back-up options in case something falls through.







## How our products can help meet environmental goals

Our customised solutions harness the 7 Strengths of Stone, which introduces improved thermal performance to any application. This raises the energy efficiency of both the product itself and the system it is integrated into, reducing energy consumption levels and passing on savings to operators and occupants.

Stone wool is recyclable and can be repurposed endlessly to make new products, without reducing its performance.<sup>12</sup> It also contains zero greenhouse or ozone-depleting gases, such as CFCs, HCFCs or CO<sub>2</sub>.

Due to its open structure, with air only in-between the smart fibres, ROCKWOOL insulation does not release particulate matter into the atmosphere. This saves the same amount of emissions that removing 50 million cars from the road would.

All our customised core insulation is **Environmental Product Declaration (EPD) certified** and can contribute to residential, commercial or industrial buildings attaining 'Green Building' certifications (LEED, BREEAM, HQE etc.).

Our bespoke insulation solutions also significantly reduce the amount of waste produced, thanks to their close tolerance fit.

## Footnotes

1. <https://www.rockwoolgroup.com/why-stone-wool/>
2. <https://www.euro.who.int/en/health-topics/environment-and-health/noise/noise>
3. [https://www.rockwoolgroup.com/siteassets/rw-cs/j2538\\_rw\\_cs\\_brochure\\_v9.1.pdf?f=20191108075459](https://www.rockwoolgroup.com/siteassets/rw-cs/j2538_rw_cs_brochure_v9.1.pdf?f=20191108075459)
4. Journal of Building Engineering, 2019, "Data and stakeholder management framework for the implementation of BIM-based material passports", M.Honicet et al.
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10. <https://www.rockwool.com/applications/industrial/chimney/>
11. <https://www.euro.who.int/en/health-topics/environment-and-health/noise/data-and-statistics>
12. ROCKWOOL Group, Sustainability Report 2019, p.17.
13. ROCKWOOL Group, Sustainability Report 2018, p.18.

## Why choose ROCKWOOL Core Solutions?

*"At ROCKWOOL Core Solutions, we have both the will and the skills necessary to achieve your goals. If it is possible, we will find a way."*

**Francois Torrebruno**

**European Business Director, ROCKWOOL Core Solutions**

ROCKWOOL Core Solutions is part of the ROCKWOOL Group, offering advanced tailor-made stone wool insulation products for original equipment manufactured (OEM) systems.

At the ROCKWOOL Group, we are committed to enriching the lives of everyone who experiences our product solutions. Our expertise is perfectly suited to tackle many of today's biggest sustainability and development challenges, from energy consumption and noise pollution to fire resilience, water scarcity and flooding. Our product range reflects the diversity of the world's needs, while supporting our stakeholders in reducing their own carbon footprint.

Stone wool is a versatile material and forms the basis of all our businesses. With more than 11,000 passionate colleagues in 39 countries, we are the world leader in stone wool solutions, from building insulation to acoustic ceilings, external cladding systems to horticultural solutions, engineered fibres for industrial use to insulation for the process industry and marine & offshore.



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