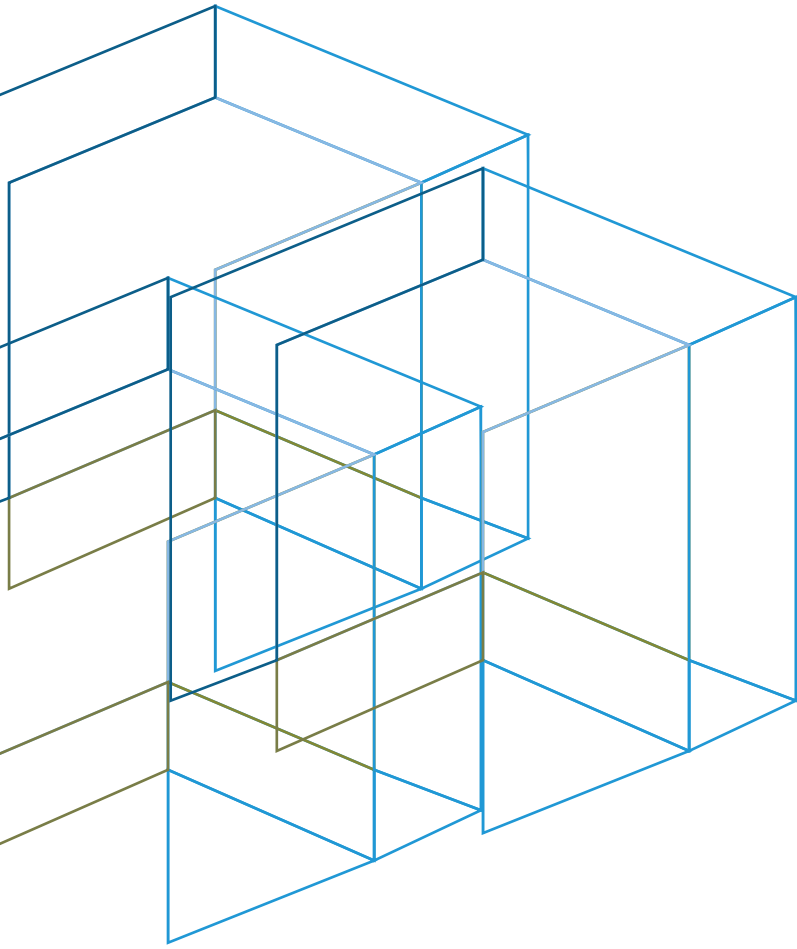


GlassRock GlassRock GlassRock GlassRock GlassRock



Glass**Rock**  
Insulation Company S.A.E



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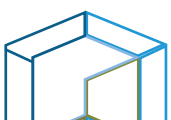
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# About Us

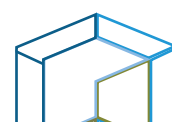
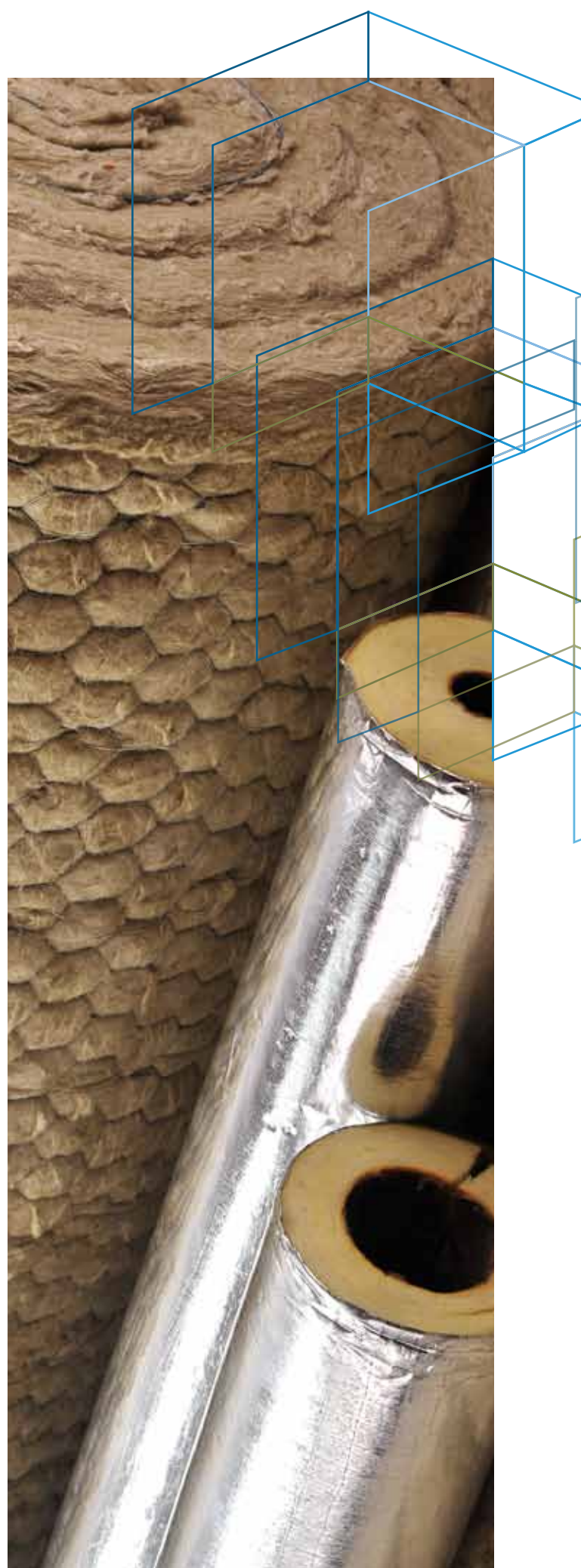


member of CITADEL CAPITAL, inaugurated in Egypt since 2008 and located in Sadat Free Zone Area, at equal distance from Cairo and Alexandria.

The company is specialized in manufacturing both glass wool and rock wool which are widely used in different insulation applications, and with great emphasis, directed towards the STM Technology applied on different production. The Company's total annual production capacity amounts for 30,000MT of rock wool and 20,000MT of glass wool.

Glass wool and rock wool products, manufactured with high- quality materials, are being used in various industrial sectors among which, construction, marine and automotive industries as well as in the agricultural sector where they are utilized as fertilizers and pests'/insects' killers.

In general, mineral wool products, such as glass wool and rock wool, have been playing a major role in conservation and rationalization of energy, which significantly reduces toxic emissions affecting the entire planet's temperature.



# Our Vision

We aspire to be recognized as the world's first class provider of insulation solutions. By adding value to our regional as well as worldwide customers and shareholders, and with the continuous support of our committed and innovative working team, we aim to become the company that clients are eager to work with, employees are proud to work for, shareholders are satisfied to invest in and above all, stakeholders are appreciating its social role.



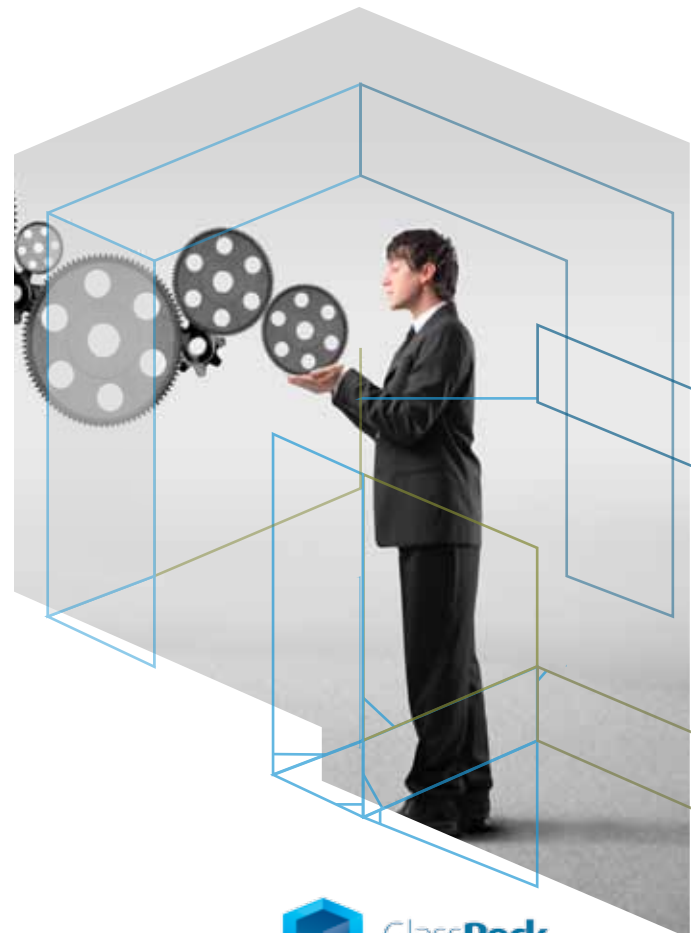
# Our Mission

Our mission is to develop and market thermal and acoustical insulation solutions.

By attaining our customers' quality satisfaction, we shall not only protect our environment but also save energy.

While doing so, we offer our employees a platform where they can learn, innovate and achieve sustainable profitable growth.

We shall always ensure to comply with the highest, most ethical, environment- friendly and safety standards.





# Our Values

## Leadership

integrated along with the Company's strategy by including both operational and organizational aspects to meet the exact needs of any specific Market.

## People

the core value of People is our greatest asset. By recognizing the essential importance of people to the success of our business accordingly, we are aiming to be the preferred company to work with. In return, we will develop people to have passion to excel.

## Ethics

maintaining the professional and ethical conduct, not only among our team, but also with our society and stakeholders.

## Constructive Partnership

believe that we, to our customers, are partners rather than sellers; and we believe that we are a proactive member in the society.

## Excellence

not only in product but through the services rendered, through research and through development.

## Care for Environment

being a participant in the energetic process of getting individuals and organizations fully and willingly committed to the idea of insulation, to protect the environment and save energy whilst having commonly held human values”.



“ believe that we, to our customers, are partners rather than sellers; and we believe that we are a proactive member in the society.”



# Mineral Wool History

## History of glass wool Insulation

In Early History, the first finely woven glass fibers, called mineral wool, were produced in 1870 by John Player. At the 1893 World's Fair, spectators were able to view an elaborate dress made of fiberglass.

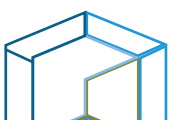
However, it was not until 1938 when the first fiberglass insulation was produced. It was invented by the Owens Corning Company, which is the world's number one producer of fiberglass until today.



## History of rock wool Insulation

A strange wool-like material - The volcanic principle. Around 1900, scientists on the Hawaiian volcano Kilauea found a strange wool-like material hanging in trees. Analysis showed it to be rock fiber and to have exceptional qualities - it had excellent fire protection qualities, superb insulating properties and was wholly natural.

In 1937, Gustav Kahler brought the volcanic principle to Denmark and set Rockwool's first factory up near Copenhagen. The sub-zero conditions created a huge demand for building insulation materials and work began to refine a process which would imitate nature in creating rock fibers



# Mineral Wool Characteristics

There are two basic types of mineral wool that are applied for insulation; and every type has its own characteristics. The user/applicator should be able to determine the right type to apply.

## Glass Wool Insulation

Glass wool is made of sand, recycled glass, limestone and soda ash. These are the same ingredients that are used to make familiar glass objects such as window panes or glass bottles. The glass is spun to form millions of fine fibers. A resin is used to bind the fibers together to form a mat of material. The density of the product determines whether the insulation is a lightweight quilt supplied in rolls, a flexible slab or a rigid slab, and thus determines its thermal insulation capacity.

### Characteristics

- Long fiber, giving good tear strength
- Suitable for temperatures up to 400°C
- Non-combustible
- Lightweight
- Available in rolls and slabs

### Main usage

- Loft insulation
- Cavity wall insulation
- Sound insulation (absorption) within partitions and floors



## Rock Wool Insulation

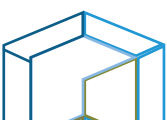
Rock wool is mainly made of volcanic rock, typically basalt and/or dolomite. An increasing proportion is composed of recycled materials made from slag, and a waste product made from blast furnaces. The materials are melted and then spun into fine fibers. A resin is then used to bind the fibers together to form a mat of insulation.

### Characteristics

- Short fiber - compressive strength
- Suitable for temperatures up to 850°C
- Non-combustible
- Denser than glass wool
- Available in the form of slabs, rolls and mattresses
- High compressive strength

### Main usage

- Thermal insulation of flat roofs, rain screen façades and external wall insulation
- Fire protection, including smoke and fire barriers
- High temperature applications
- Sound insulation for floors and walls

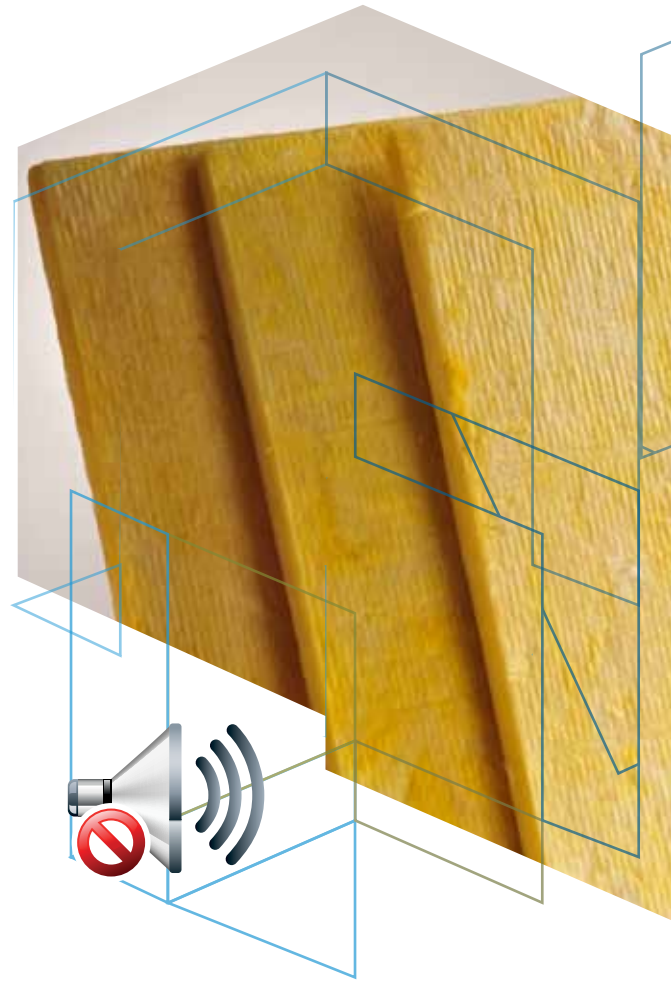




# Mineral Wool Properties

## Sound and vibrations absorption

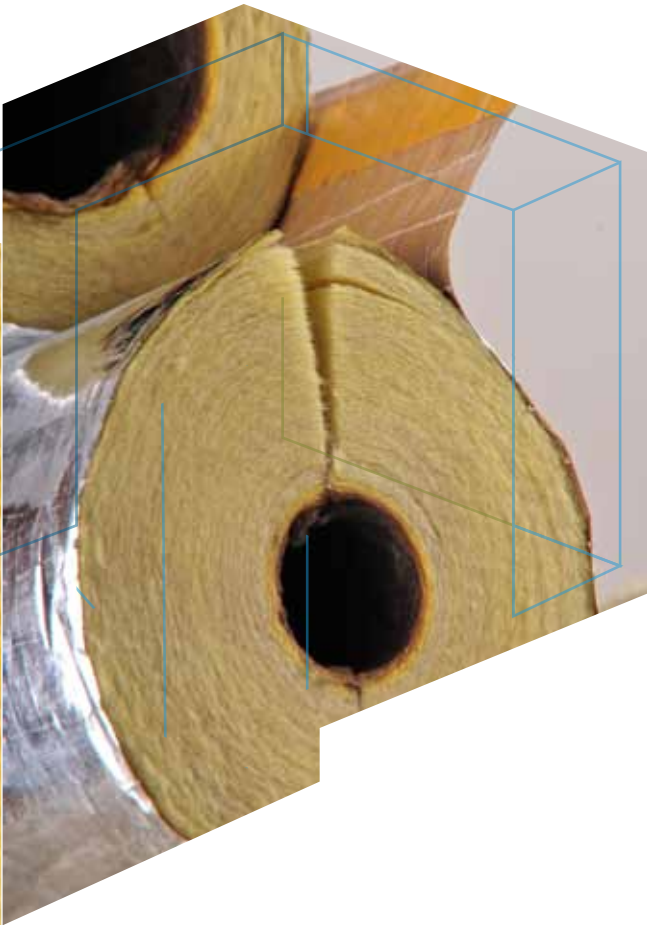
The energy of sound waves absorbed by rock wool and glass wool fibers due to the crisscrossed fibers and air pockets. This structure makes rock wool and glass wool one of the best sound absorbing insulation for building and industrial applications. Besides the advantage of light weight, rock wool can also be used to control vibrations caused by sources such as traffic, ventilating systems, heavy machines or similar.



## Fire resistance

Rock wool and glass wool fibers can resist temperatures of over 750°C for rock wool and 400°C for glass wool. Rock wool retains both its thermal conductivity and fire protection capability even when temperatures, as in the case of fire, reach over 900 °C. Therefore, in fire protection applications it should be fixed in such a way as to ensure that they retain their positioning and shape, even after the binder has evaporated because of fire.





## Stability

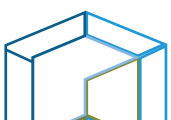
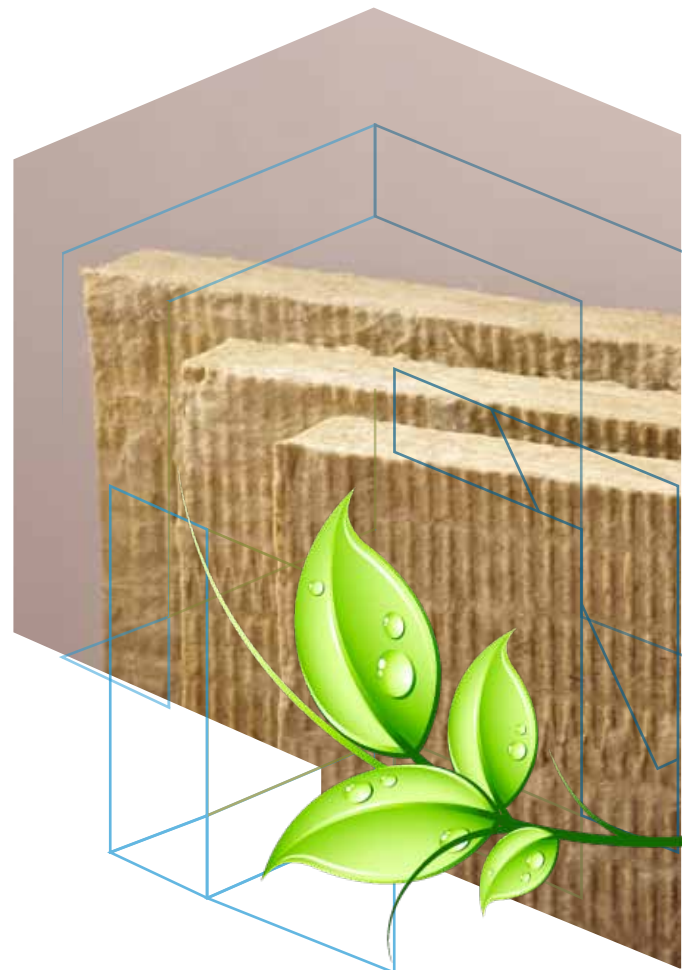
The orientation of rock wool fibers, give it very good mechanical properties as well as excellent stability, no thermal expansion or contraction, because of the open cell structure. Air pockets allow vapor to get through easily, while also having excellent thermal conductivity. The shorter fiber length of rock wool also offers the possibility of making higher density products with a much higher capacity load than other materials.



## Water repellency

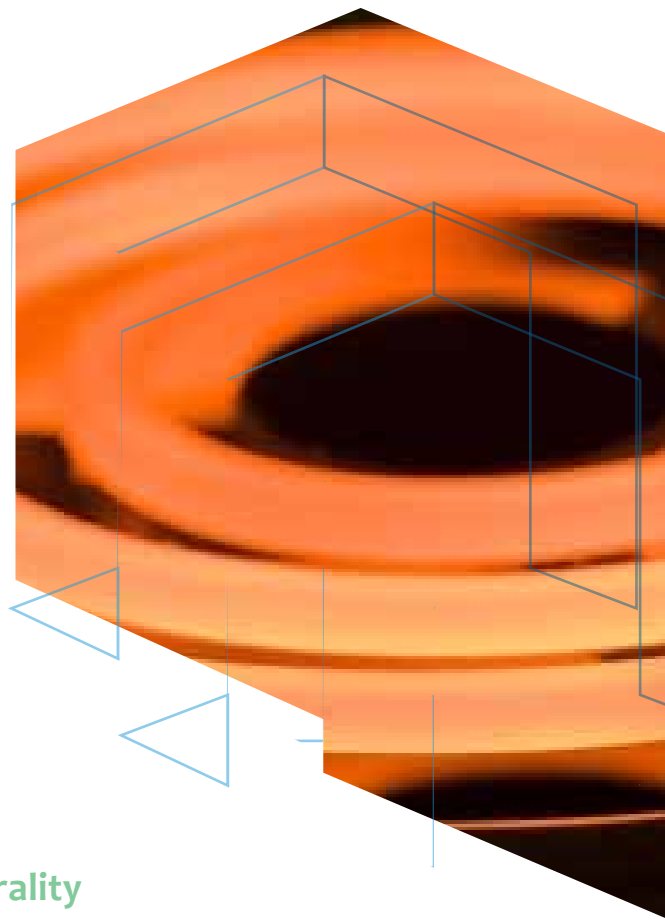
That moisture inside insulation reduces thermal conductivity performance. When exposed to water or rain, rock wool can sometimes look like it is wet throughout. In fact water does not penetrate the product.

Even if water is going into the core of a rock wool or glass wool, after a certain time the water evaporates and the fibers dry out, as the material is itself diffusing. After drying out, the product completely recovers its properties.



## Thermal conductivity

Thermal conductivity  $\lambda$  varies depending on the temperature of the element to be insulated. At normal temperatures rock wool has a thermal conductivity between 0,035 and 0,040 W/mK. The advantage of rock wool over other insulation materials is preserving its properties for a long time, even during serious fire. This capability prevents other materials behind the rock wool from overheating or even self-igniting.



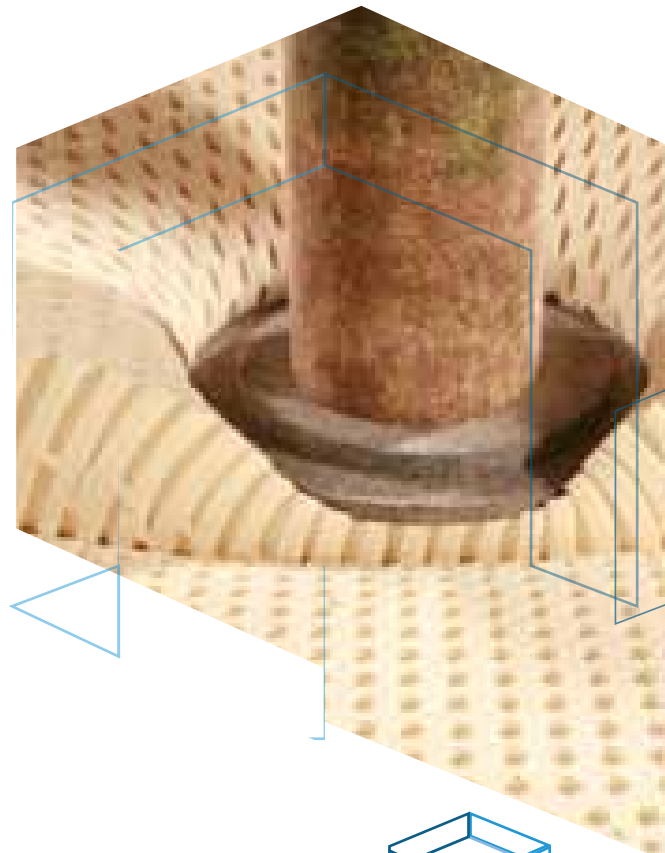
## Neutrality

Mineral wool fibers are inorganic biologically inert materials, made out of natural igneous rocks and sand, silica in case of glass wool that forms an unfavorable medium for the growth of fungi, bacteria, vermin, and pests. These fibers are also free of asbestos.



## Durability

Mineral wool fibers consist of natural, chemically- inert fibers forming an open- cell structure that maintains its characteristics with time, implying easy handling and hassle- free storage.





# Our Sustainability Choice



**GlassRock** is a committed company producing sustainable products.

## Global Energy and Climate Challenges

From nature to nature, our products are environment- friendly.

In our production processes, we care to adopt the most efficient techniques and integrate natural resources in effort of reducing CO<sub>2</sub> emissions and preserving energy.

## Affordable Insulation

Even during the production process, we care for reducing carbon emissions. 70 - 80 % of rock wool residues are recycled, thus we tremendously reduce waste.

## Energy efficiency in Construction

Residential buildings are a major energy consumer; buildings are responsible for at least 40% of energy consumption in most countries. Most of this energy waste is due to inadequate insulation.

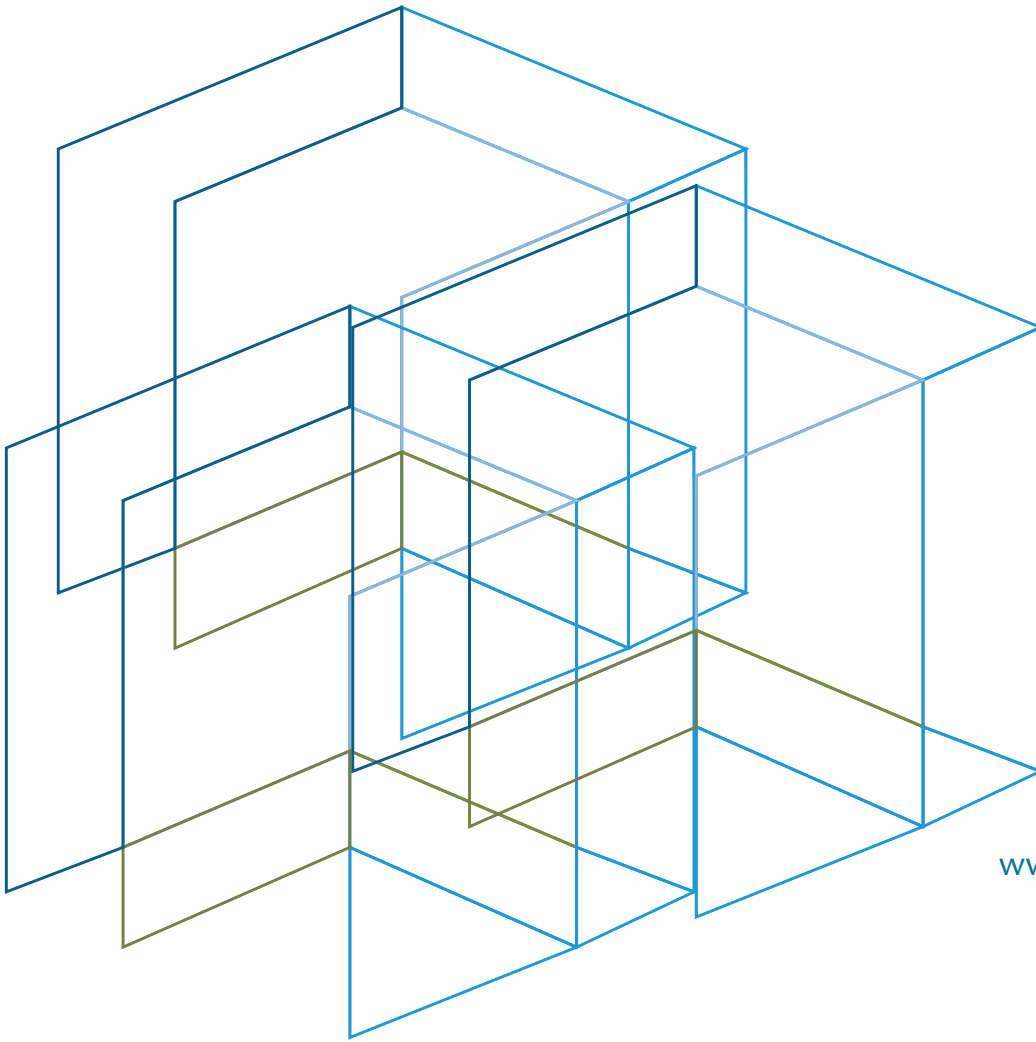
By insulating buildings, energy is saved. 80 % of a building's energy needed for heating or cooling can be reduced, expanding the asset's life span.

## Thermal and Acoustical Comfort

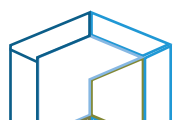
Moreover, since people spend most of their time in buildings, whether in offices, shopping malls or even homes, it is inevitable to secure one's indoor comfort.







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