

Wedge India

Mineral Stone Rock Slag Wool Insulation

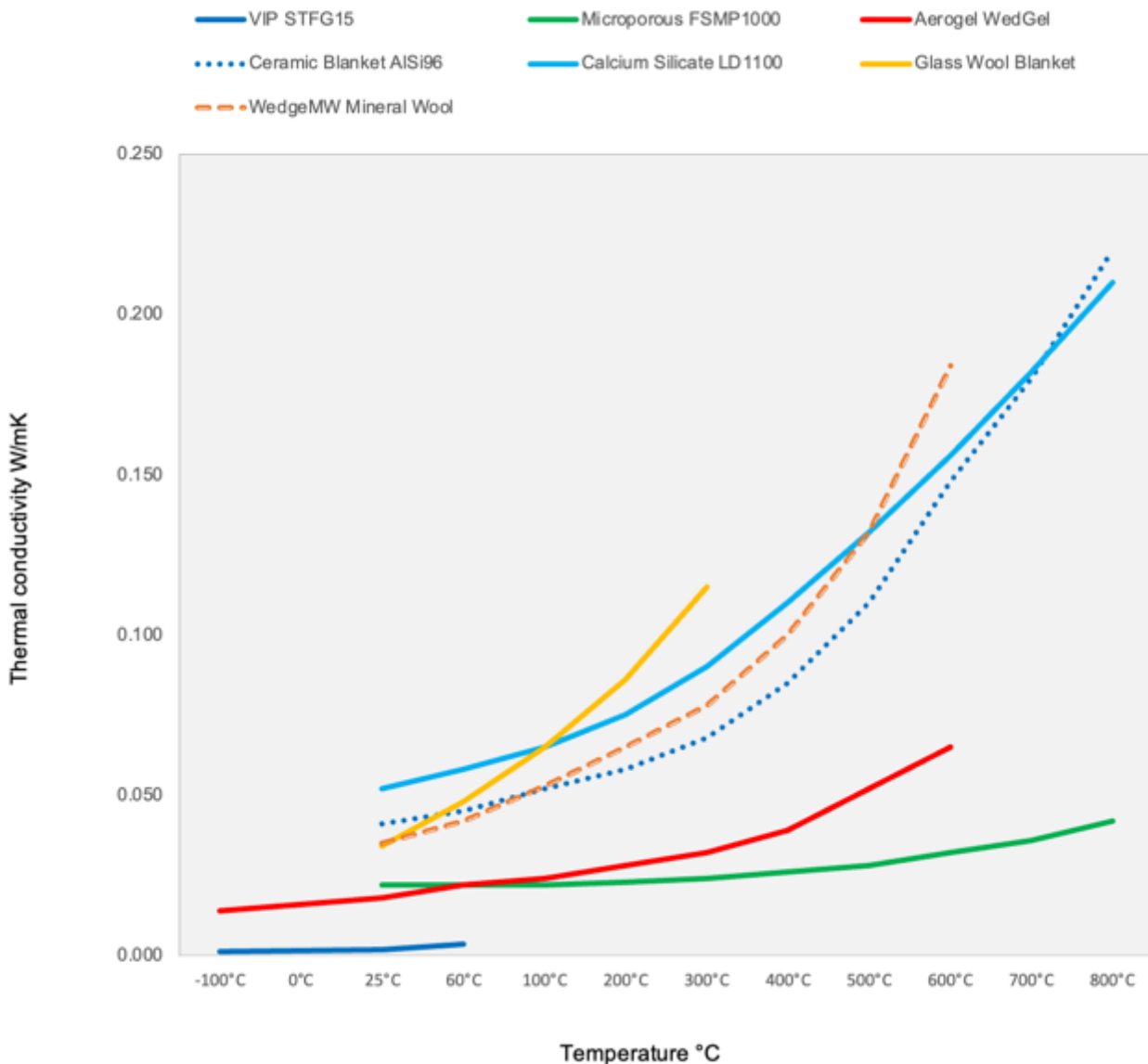


WedgeMW | Mineral Wool Insulation

Mineral wool, also known as rock wool, is a type of insulation material made from natural rock, typically basalt or diabase, which is heated and spun into fibers. These fibers are then compressed and formed into various shapes, including batts, rolls, boards, and loose-fill insulation. Rock wool insulation is valued for its excellent thermal insulation properties, as it effectively reduces heat transfer and helps maintain indoor temperatures. It is also known for its fire resistance, sound absorption, and resistance to moisture, making it suitable for a wide range of applications in residential, commercial, and industrial construction.

Rock wool insulation is commonly used in walls, roofs, floors, and attics to improve energy efficiency and indoor comfort. It is also used in fire-resistant barriers, acoustic panels, and as a growing medium in hydroponic gardening. Additionally, rock wool is considered environmentally friendly as it is made from abundant and recyclable materials. Mineral wool is a type of insulation material made from natural or synthetic minerals, primarily rock or slag. It is commonly used in construction for thermal and acoustic insulation. Mineral wool is manufactured by melting raw materials like basalt, diabase, or slag at high temperatures and then spinning the molten material into fibers. These fibers are then compressed into various forms such as batts, rolls, boards, or loose-fill insulation.

Thermal Conductivity Comparison



Mineral wool insulation offers several advantages, including excellent thermal insulation properties, fire resistance, sound absorption, and resistance to moisture and pests. It is commonly used in residential, commercial, and industrial buildings to improve energy efficiency and indoor comfort. Mineral wool insulation is available in different densities and thicknesses to suit various applications, and it can be installed in walls, ceilings, floors, attics, and HVAC systems. It is also used in fire-resistant barriers, acoustic panels, and as a growing medium in hydroponic gardening. Overall, mineral wool is considered a versatile and effective insulation material, valued for its durability, thermal performance, and fire safety properties. Additionally, it is environmentally friendly as it is made from abundant and recyclable materials.

Features & Benefits of Wedge Mineral Wool Insulation

Mineral wool insulation offers several benefits, making it a popular choice for construction projects:

- **Excellent Thermal Insulation:** Mineral wool has high thermal resistance, helping to reduce heat transfer and maintain comfortable indoor temperatures. This can lead to significant energy savings by reducing heating and cooling costs.
- **Fire Resistance:** Mineral wool is inherently non-combustible and can withstand high temperatures without melting or emitting toxic fumes. It acts as a fire barrier, helping to prevent the spread of flames and contributing to overall fire safety in buildings.
- **Acoustic Insulation:** Mineral wool has excellent sound absorption properties, helping to reduce noise transmission between rooms and floors. This makes it ideal for use in walls, ceilings, and floors where noise control is important.
- **Moisture Resistance:** Mineral wool is hydrophobic, meaning it repels water and does not absorb moisture. This helps to prevent mold growth, rot, and degradation of the insulation over time, particularly in humid environments.
- **Pest Resistance:** Mineral wool is not attractive to pests such as rodents and insects, reducing the risk of infestation and damage to the insulation.
- **Durable and Long-lasting:** Mineral wool insulation is durable and does not degrade over time, maintaining its thermal and acoustic properties for many years. It does not shrink, settle, or compress, ensuring consistent performance over the lifespan of the building.
- **Environmentally Friendly:** Mineral wool is made from abundant and recyclable materials, such as natural rock or slag. It can be recycled and reused at the end of its life, reducing waste and environmental impact.
- **Versatility:** Mineral wool insulation is available in various forms, including batts, rolls, boards, and loose-fill, making it suitable for a wide range of applications in residential, commercial, and industrial buildings.



Mineral Wool Applications

Mineral wool, rock wool, has a wide range of applications across various industries due to its excellent thermal insulation, fire resistance, sound absorption, and other beneficial properties. Some common applications include:

- **Building Insulation:** Mineral wool is widely used for thermal insulation in residential, commercial, and industrial buildings. It is installed in walls, roofs, floors, and attics to improve energy efficiency and indoor comfort.
- **Fire Protection:** Mineral wool is used as a fire-resistant barrier in buildings to prevent the spread of flames and protect structural elements. It is often installed in fire-rated walls, floors, and ceilings to enhance fire safety.
- **Acoustic Panels:** Mineral wool is an effective sound-absorbing material and is used to manufacture acoustic panels and tiles. These panels are installed in walls and ceilings to reduce noise transmission and improve sound quality in spaces such as offices, theaters, recording studios, and classrooms.
- **HVAC Insulation:** Mineral wool is used to insulate heating, ventilation, and air conditioning (HVAC) ducts and pipes to minimize heat loss or gain and improve system efficiency. It helps maintain consistent temperatures and reduces energy consumption.
- **Industrial Applications:** Mineral wool is used in various industrial applications, such as insulation for furnaces, boilers, ovens, and other high-temperature equipment. It withstands extreme temperatures and provides thermal insulation in harsh environments.
- **Hydroponic Gardening:** Mineral wool is used as a growing medium in hydroponic gardening systems. It provides support for plant roots, retains moisture, and allows for proper aeration, promoting healthy plant growth without soil.
- **Marine and Automotive Insulation:** Mineral wool is used for thermal and acoustic insulation in marine vessels, automobiles, trains, and other transportation vehicles to enhance passenger comfort and reduce noise levels.
- **Cold Storage and Refrigeration:** Mineral wool is used to insulate cold storage facilities, refrigerated trucks, and refrigeration systems to maintain low temperatures and prevent heat transfer.

Mineral wool Vs Rock wool

Mineral wool and rock wool are often used interchangeably, but there are some differences between the two:

- **Raw Materials:** Both mineral wool and rock wool are made from natural minerals, but the specific types of minerals used may differ. Rock wool is typically made from basalt or diabase rock, while mineral wool can also be made from slag, a byproduct of industrial processes such as steel production.
- **Manufacturing Process:** The manufacturing process for both types of insulation is similar. Both involve melting the raw materials at high temperatures, spinning them into fibers, and compressing them into various forms. However, the specific process details may vary slightly depending on the manufacturer and the type of mineral used.
- **Density and Properties:** The density and properties of mineral wool and rock wool may vary depending on the specific product and manufacturer. Generally, both types of insulation offer excellent thermal insulation, fire resistance, sound absorption, and moisture resistance. However, there may be differences in performance depending on the specific application and requirements.
- **Availability:** In some regions, the term "rock wool" is more commonly used, while in others, "mineral wool" may be preferred. Both types of insulation are widely available and used in construction projects around the world.



WedgeMW | Technical Data Sheet of Wedge Mineral Wool Insulation

Mineral wool insulation possesses several technical properties that make it a popular choice for various applications in construction and other industries.

Technical Properties	Test Method	Wedge MW40	Wedge MW60	Wedge MW100	Wedge MW150	Wedge MW200
Density, kg/m ³	GB/T 5480.3 / ASTM C303	45-48	60-65	96-100	150-160	180-220
Working Temperature, °C	GB/T17430 / ASTM C411	650	650	650	650	650
Max. Use Temperature, °C	GB/T17430 / ASTM C411	750	750	750	750	750
Melting point °C	ASTM E794	> 1000	> 1000	> 1000	> 1000	> 1000
Thermal conductivity, W/m•K (at 25 °C)	GB/T10294 / ASTM C518	0.036	0.036	0.036	0.036	0.036
Fibre diameter, µm	GB/T5480	≤6	≤6	≤6	≤6	≤6
Shot content (Particle size >0.25mm, %)	GB/T5480 / ASTM C612	≤7.0	≤7.0	≤7.0	≤7.0	≤7.0
Wet resistance factor	GB/T30801 / GB/T17794-2008	≤10	≤10	≤10	≤10	≤10
Compression Strength, kPa	EN 826 / GB/T13480	55	55	55	55	55
Tensile Strength, kPa	EN 1607	21	21	21	21	21
Fire Performance, Class	GB 8624, EN13501- 1, BS 476 Part4	A1	A1	A1	A1	A1
Moisture Absorption, % by weight	ASTM C1104	<1	<1	<1	<1	<1
Moisture resistance rate, %	GB/T10299 / ASTM E96	≥98.0	≥98.0	≥98.0	≥98.0	≥98.0
Acidity coefficient	GB/T 5480	≥1.8	≥1.8	≥1.8	≥1.8	≥1.8
Shear Strength, Kpa	GB/T32382	≥60	≥60	≥60	≥60	≥60
Noise reduction coefficient (NRC)	GB/T18696.1	≥0.45	≥0.45	≥0.45	≥0.45	≥0.45
Formaldehyde emission, mg/(kg.h)	GB/T32379	≤1.4	≤1.4	≤1.4	≤1.4	≤1.4
Point load, Kpa	GB/T30802	≥200	≥200	≥200	≥200	≥200
Fungi Resistance	ASTM C665	Does not encourage Fungi Growth				
Non-Combustibility	ASTM E84	Flame Propagation: 25; Flame Diffusivity: 50				
Corrosion Resistance	ASTM C665	No Chemical Reaction				
Corrosiveness	GB/T11835-2007	Non-corrosive				
Mold Resistance	ASTM C665	Mildew proof				



HDRW 850 | High Density Mineral Wool Boards

Wedge HDRW 850 are Refractory Insulation Boards are made of high quality refractory grade mineral fibers wool bonded with high temperature clays. These insulation boards possess unique combination of properties for various industrial applications in furnace backup insulation, fire rated doors, fire protection & heat shield, high temperature gasketing & seals.

- Strong Rigid Boards with high compressive strength.
- High temperature resistance upto 850 °C.
- Very low Thermal Conductivity at high temperatures.
- High Electrical Resistance at high temperature.
- High fire resistance and heat shield properties.
- Easy to cut, laminate, and punch.
- Adaptable by wet moulding for pipe insulation.

Applications:

- Furnace Insulation
- High Temperature Pipe Insulation
- Fire Doors Making / Lift Doors
- Heat Shield / Thermal Protection
- Fire Protection Systems
- Lime Kiln and Cement Kiln Insulation
- High temperature insulation Gaskets
- Boiler & Furnace Insulation
- Oil & Gas Burners Insulation
- Furnace, Dryer, and Oven Insulation
- Refractory insulation expansion joints
- Metal clad Gaskets fillers
- Induction Furnace Insulation
- Glass rollers as washers on mandrel
- Electrical & home appliances insulation gaskets



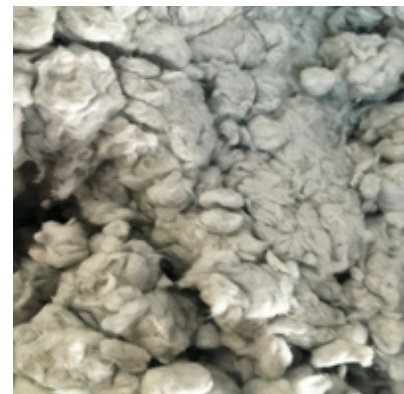
Technical Properties	HDRW 850	
Colour	Light Brown	
Classification Temperature, °C	850	
Density, Kg/M3	950	
Thermal conductivity, W/m.K		
	400 °C	0.10
	600 °C	0.11
	800 °C	0.12
Fire Resistance for 10 mm thickness, minutes	120	
Fire Resistance for 5 mm thickness, minutes	60	
Tensile Strength, Mpa	3.5	
Shrinkage % @ 1000 °C	2	
Compression @ 70 Kg/cm2	15	

WedgeLMW | Loose Mineral Wool

Loose mineral wool refers to mineral wool insulation that is manufactured and sold in a loose-fill form, typically consisting of fine fibers or granules. It is commonly used as an insulation material in areas where traditional batts or rolls may be difficult to install, such as attics with irregular or confined spaces, or in retrofitting existing structures.

Features and Benefits of Loose mineral wool insulation

- **Installation:** Loose mineral wool is installed by blowing or pouring the material into cavities or spaces using specialized equipment. It conforms to the shape of the area being insulated, providing effective coverage even in hard-to-reach areas.
- **Thermal Insulation:** Loose mineral wool provides excellent thermal insulation properties, helping to reduce heat transfer and improve energy efficiency in buildings. It helps to maintain comfortable indoor temperatures and can contribute to lower heating and cooling costs.
- **Fire Resistance:** Like other forms of mineral wool insulation, loose mineral wool is inherently non-combustible and offers fire resistance. It can help to slow the spread of flames and provide added fire protection in buildings.
- **Acoustic Insulation:** Loose mineral wool also offers good acoustic insulation properties, helping to reduce noise transmission between rooms and floors. It can contribute to a quieter and more comfortable indoor environment.
- **Moisture Resistance:** Loose mineral wool is typically hydrophobic, meaning it repels water and does not absorb moisture. This helps to prevent mold growth, rot, and degradation of the insulation over time.
- **Environmentally Friendly:** Loose mineral wool is made from natural minerals such as basalt or slag, making it environmentally friendly and sustainable. It is also recyclable at the end of its useful life.



Technical Data Sheet of Wedge Loose Mineral Wool Insulation

Item	Unit	Specification	Standard
Color	Off-white	Off-white	
Water content	Percent	<1.0	ASTM C726
Shot content	Shot size>0.5mm	≤1.5%	ASTM C1335
Shot size>0.25mm	≤5.0%		
Particle Size	>25mm		ASTM E2651
(12-25)mm	≥60%		
(6-12)mm			
≤6mm	<10%		
Conpinet content	Al2O3	(12-20)%	
Tfe2O3	(0-1.0)%		
CaO	(28-35)%		
MgO	(6-10)%		
SiO2	(38-42)%		
Bulk density	Kg/m3	≤200	ASTM C167
Average Fiber Diameter	Micron	(3.5±0.5)	ASTM C612
Melting point	Celsius	>750	
Bale	Kg	25±0.5Kg	



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