

# Building Insulation Solutions





# INDEX

## Introduction

About us	4-5
Why Insulation?	6-9
General Information -Stone mineral wool	10
General Information - Glass mineral wool	11
General Information - EcoBuild	12

## Wall Insulation

Wall Application Overview	13-15
Façade wall (Ventilating & non-ventilating)	16-17
Curtain wall	18-19
Cavity wall	20-21
Partition wall	22-23
Internal wall	24-25
ETICS	26

## Roof & Floor Insulation

Roof & Floor Application Overview	27
Suspended Ceiling	28-29
Underdeck/ soffit	30-31
Floor Insulation	32-33
Over deck / flat	34

## Metallic Building Insulation

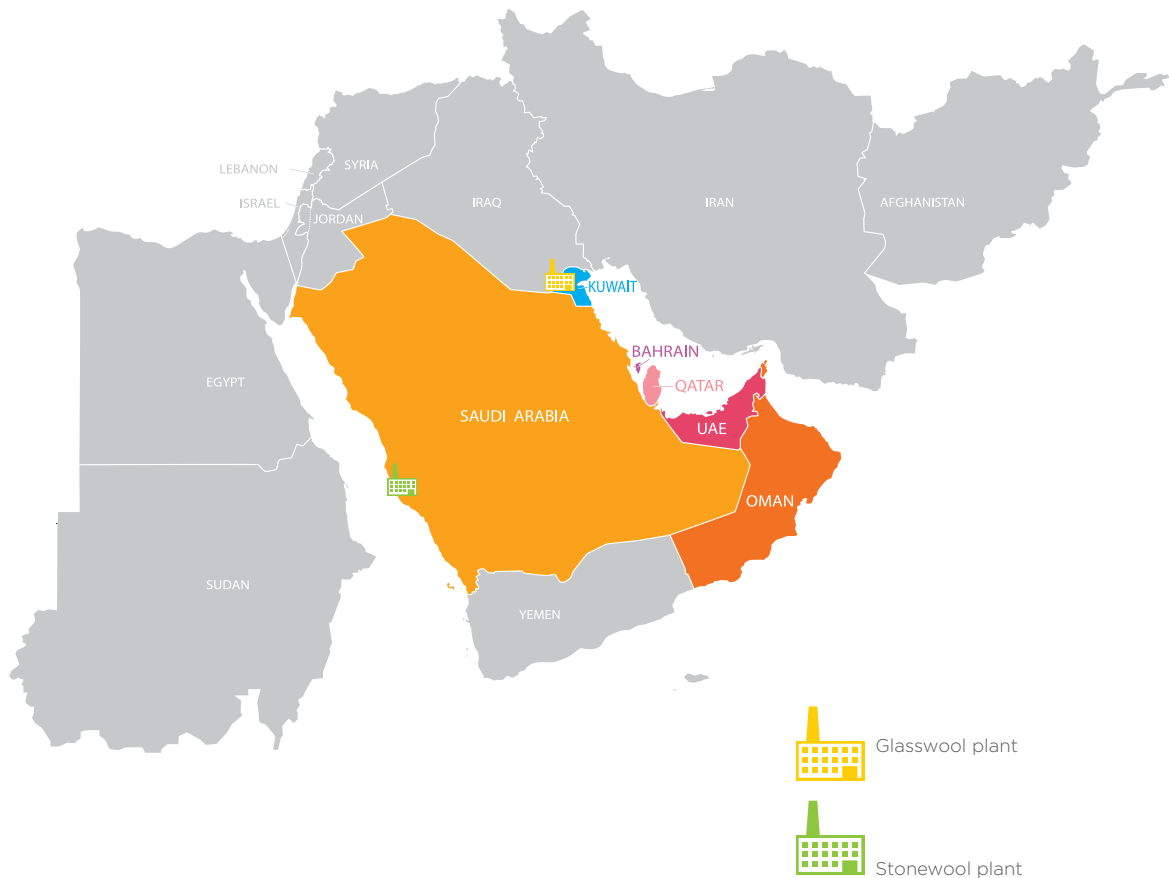
Metallic Building Overview	35
Metallic Wall	36-37
Metallic Roof	38-39

## Others

Other Application + Health	40
Conformity to standards & commitment to quality	41
Projects	42-43

# ABOUT US

Alghanim Industries and French construction giant Saint-Gobain ISOVER join forces together after the recent launch of their new stone wool plant in Yanbu Saudi Arabia and the integration of KIMMCO in Kuwait. With a 40 year track record in manufacturing, technology and supply of insulation materials and solutions to the Middle East markets, KIMMCO and Saint-Gobain ISOVER now offer their full range of glass wool and stone wool products and solutions under the brand KIMMCO-ISOVER.





- Alghanim Industries is one of the largest privately - owned companies in the Gulf region
- A heritage of over 100 years as a successful commercial enterprise in the Gulf region,
- Operations in over 40 countries and employing
- over 14,000 employees
- A multi-billion dollar company with more than 30 businesses.



World leader in sustainable habitat and construction market. Saint-Gobain designs, manufactures and distributes material and solution which are key ingredients in the wellbeing of each of us and the future of all.




- Founded in 1665
- Nearly 179,000 employees
- Operates in 67 countries
- Close to 400 patents filed each year

**A group driven by innovation**

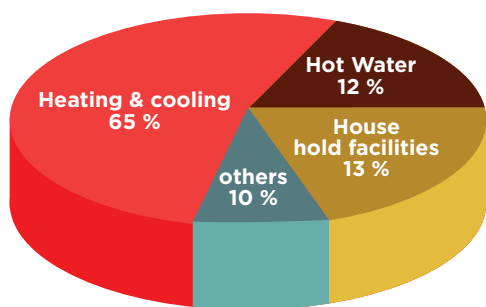
For the third year in a row, Saint-Gobain has been included in the Thomson Reuters Top 100 global innovators ranking. The list is based on the number of unique patents, the number of patents accepted compared with the number filed, and their international scope and renown

## Savings

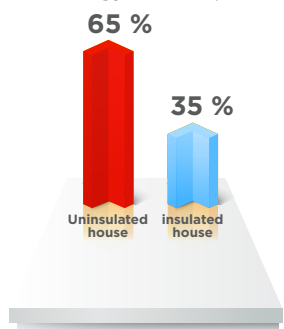
Insulation acts as a barrier to heat loss and heat gain, particularly in roofs and ceilings, walls and floors. In many buildings insulation is the most practical and cost-effective way to make a building more energy efficient, keeping it cooler in summer and warmer in winter and saving up to 46 % in heating and cooling losses, it will improve your comfort at home or office and at the same time lowers greenhouse gas emissions.

-  **Energy Savings** - Reduces Energy consumption
-  **Economic** - saves money on your energy bills
-  **Environment Protection** - lower greenhouse gas emission

Energy usage in typical building



Heating & Cooling: percentage of total energy consumption



\* Source - research study with KISR

Overall energy savings

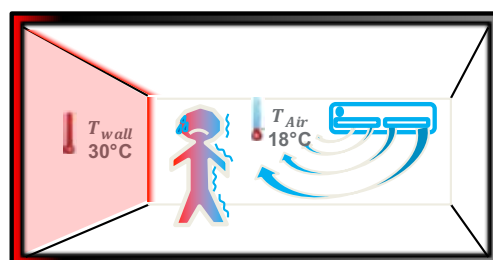


Considering the energy consumption of other components (house hold facilities & Hot water to be constant).

## Comfort

### Thermal comfort

Comfort all around the year in a building relies on maintaining a good inside temperature regardless of the season. The temperature difference between walls and air can create discomfort. Blowing cold air from the Air conditioning devices decreases the temperature, but increases the sensation of discomfort. Efficient insulation creates homogenous temperature and provides overall thermal comfort.



### Acoustic comfort

Insulation limits sound pollution. Nowadays noise became one of the major sources of discomfort. Humans need external protection to seal the sound. It is proven fact that the noise can create mental stress and reduce productivity. It is important to consider acoustic insulation to decrease airborne noise coming from outside to inside and other impact noise from upper floors and mechanical noise from ventilation system and machineries like elevators



## Fire Protection

Most building codes insist on using non-combustible insulation material for building applications. Beside non-combustibility, it is also important to consider fire resistance of the building components. Fire protection has always been a big concern for building occupants, fire fighters, building owners and people living in the vicinity.



Fire Performance		
Parameter	Standards	Mineral wool
Non-combustibility	ISO 1182 ISO 1716 BS 476 part 4 ASTM E136	
Euro Fire class	BS EN 13501	A1/A2
Burning Characteristics	ASTM E84	FSI : 25 SDI : 50
Class Rating	BS 476 Part 6 & 7	Class O
Surface Spread of flame	BS 476 Part 7	Class 1
Propagation Index	BS 476 Part 6	I<12 : i1 <6
Ignitibility	BS 476 part 12	Not Ignitable
Resistance to fire	NFPA 286 EN ISO 9705	Stop the fire and provides extra vital minutes to save life & valuables

## Sustainability

KIMMCO-ISOVER is actively and passionately dedicated to advancing the construction industry toward a sustainable future, Planet & People. It starts with a continuous focus on everything that improves the environmental quality, affects our products' sustainability and long term performance.

Our state of the art manufacturing facilities uses latest technology to produce mineral wool with sensibly sourced raw materials and energy. We use around 80 % of recycled content in all our glass mineral wool production. Our stone mineral wool products are 100 % recyclable. KIMMCO-ISOVER is contributing in LEED certification and is the member of many green building councils.

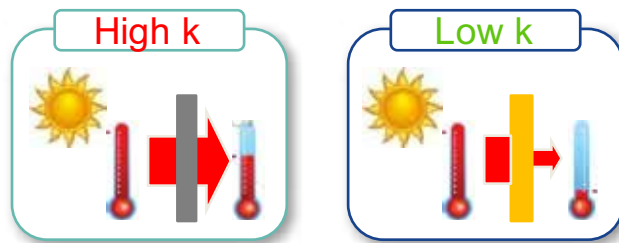


# Thermal performance

**K-value** (W/m.K) is the thermal conductivity, characterizing the amount of heat that can be transmitted through the material. The lower the K-value, the better the insulation performance.



Material

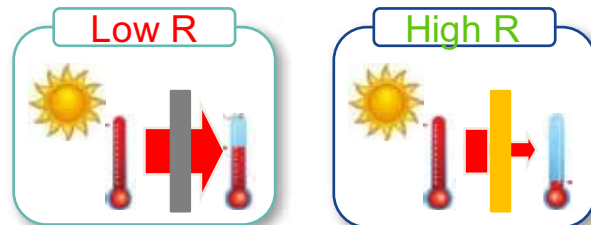


**Lower k → better insulation**

**R value** (K.m<sup>2</sup>/W) - R value is the measure of resistance of heat flow through a given thickness of the product. R-value is the ratio of the thickness of the material by its thermal conductivity. The thicker the insulation or the lower the thermal conductivity, the higher the R-value. Higher the R-value, better the insulation performance.



Product

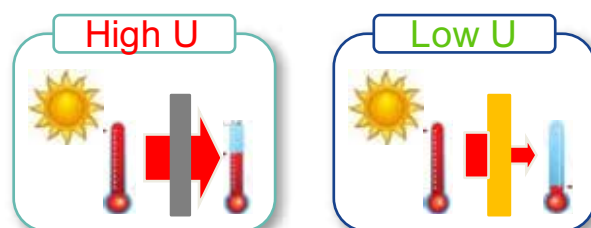


**Higher R → better insulation**

**U-value** (W/m<sup>2</sup>.K) U-value are used to measure how effective all the elements of a building assembly (wall, insulation, thermal bridges due to anchors) are in preventing the heat transfer from hot side to the cold side. U-value is reciprocal the Sum of all the R-values of the system components. The lower the U-value, the better the insulation performance.



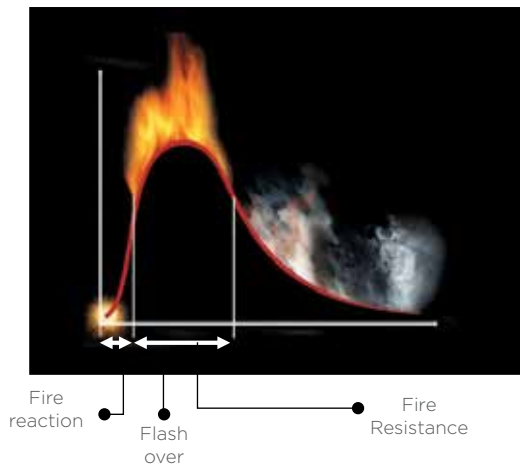
System



**Lower U → better insulation**

# Fire protection in Buildings

Fire performance of building materials can be generally described through two characteristics.



**1. Reaction to fire** - Reaction to Fire means how the material itself reacts in the case of fire. This indicates if the material supplies fuel to the fire before flash-over. Below are the points which need to be considered in reaction to fire

- Ignitibility
- Combustibility
- Smoke production
- Toxicity

**2. Fire Resistance** - This indicates how long a passive fire protection system can withstand a fire after flash over -(between 45 - 60 minutes....etc.). Below are the points which need to be considered in fire resistance.

- Construction Stability
- Construction integrity
- Temperature rise

# Acoustic Performance

## Sound insulation system

Sound insulation is the term describing the reduction of sound that passes between two spaces separated by a partition element. Level of airborne noise reduction provided by a construction to adjacent areas (speech or music) is measured by the STC value (Sound Transmission Class). STC is a single number rating to specify the reduction in sound levels that system like partition provides. Where the higher the STC rating, better is the acoustic performance.

Stc	Not Audible		Recommended			Clearly Audible		Example of rooms
	Normal Speech	Loud Speech	Shouting	TV & radio normal level	TV & radio high level	TV & radio extreme level		
30								Office
35								Office
40								School
44								School
48								School
52*								Apartment
56								Apartment
60								Special Rooms

Recommended for rooms where privacy is required  
Higher STC, better the sound reduction

## Sound Absorption

Sound absorption is defined as a process by which some of the incident sound energy is absorbed by the material. The choice of material will be influenced by its acoustic efficiency and material thickness, which have the greatest impact on the material sound absorbing properties. A material's sound absorbing properties are expressed by the sound absorption coefficient (alpha), as a function of the frequency. Alpha (a) ranges from 0 to 1.00 which corresponds to 100 % absorption.



# General Information



KIMMCO-ISOVER stone mineral wool products are made from natural stone (Basalt + Dolomite). The products are manufactured using the latest sustainable manufacturing technology developed by Saint-Gobain (ISOVER) with low environmental impact. KIMMCO-ISOVER stone mineral wool are 100 % recyclable

KIMMCO-ISOVER Stone mineral wool offers superior thermal, acoustic and fire safe properties. The products are ideally suitable for building applications which demand high fire safety & product rigidity. KIMMCO-ISOVER stone mineral wool is available in different types suitable for all building applications. The products are available in slabs and rolls form with different facings.



Enhanced Thermal Performance



Cost Effective Solution



Effective Fire Protection



High Mechanical Strength



Optimal Acoustic Performance



Energy Saving



Easy and Fast Installation



Active Environmental Protection

# General Information



KIMMCO-ISOVER Glass mineral wool is made from silica sand, an inorganic raw material, a natural raw material available abundantly on earth. It is produced through heating silica sand and other minerals over 1,000°C and transforming it into wool. It can be manufactured in the forms of roll, slab and pipe in different sizes and with different technical properties, with different facing materials according to the intended use and the place of use. It is used for thermal and acoustic comfort. KIMMCO-ISOVER is ISO 9001, 14001 and OHSAS 18001 certified.



Enhanced Thermal Performance



Energy Saving



Optimal Acoustic Performance



Cost Effective Solution



Non-Combustible



Maximum Flexibility



Easy and Fast Installation



High Compression Transport & Storage Savings



Unique Light Weight



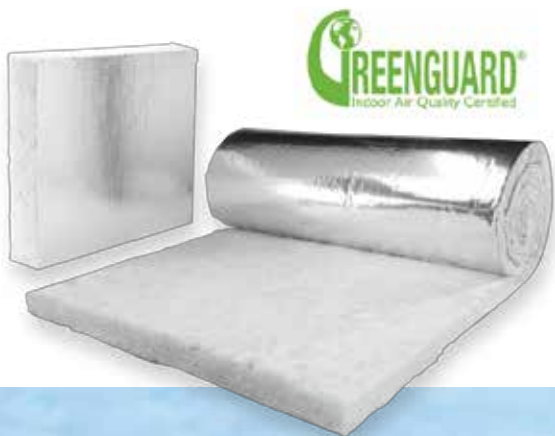
Active Environmental Protection

## General Information - EcoBuild



EcoBuild Mineral wool is a further development of its existing high performing Glass mineral wool insulation for building applications and opens a new era in sustainable insulation solutions. Manufactured by using Saint-Gobain Isover's patented state-of-the-art technology, EcoBuild mineral wool contains natural resources as e.g. sand, soda etc, and up to 80 % recycled post-consumer glass cullet and therefore has a unique natural color. Furthermore, with its performance, EcoBuild is a big contributor in reducing energy consumption of buildings, either in winter or summer, for cooling or heating.

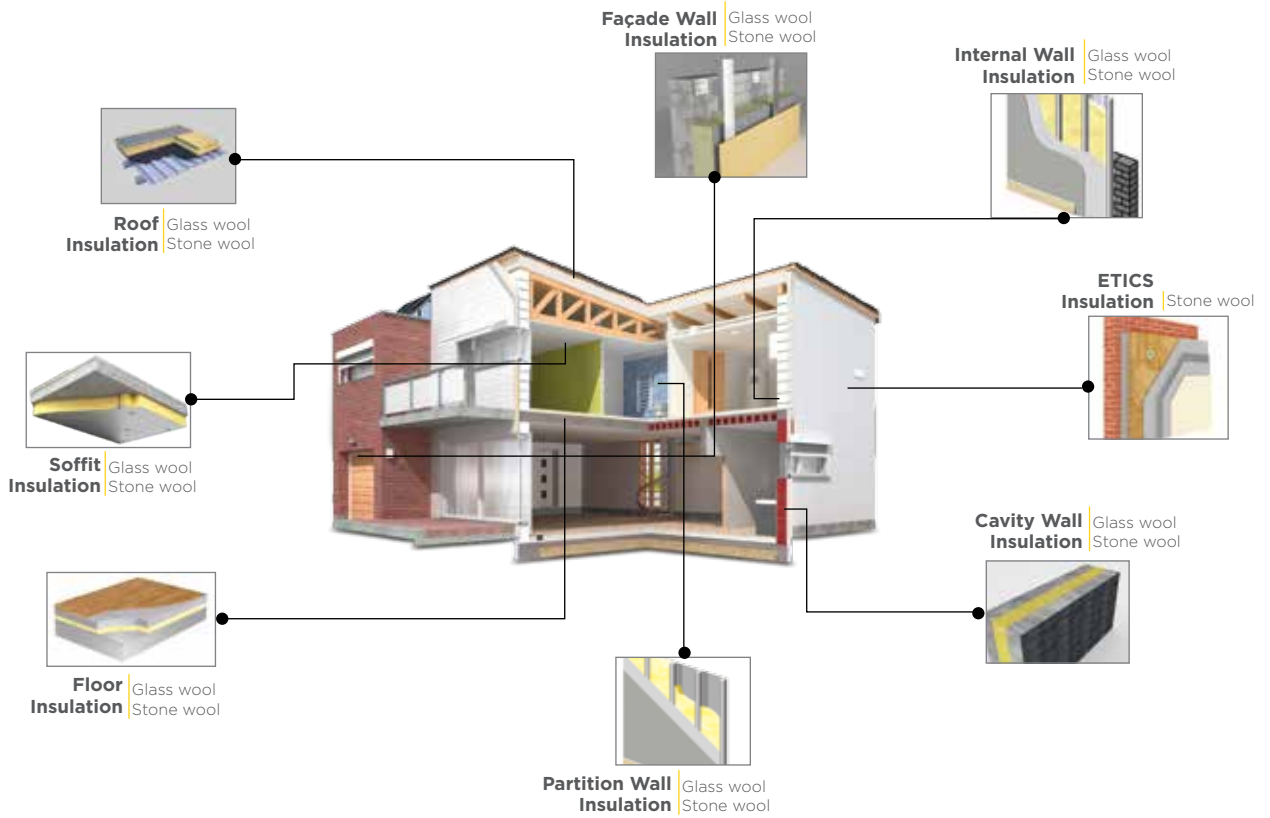
With exceptional handling benefits including superior softer touch and no odor. EcoBuild mineral wool slabs and rolls improves job-site efficiency, as they are less dusty and easier to work with, while also providing the excellent thermal, acoustic, fire and indoor air quality performances that customer demands. Being non-hazardous to health according to WHO (World Health Organization), EcoBuild is therefore the ideal solution for interior building insulation.



- Soft touch
- Odorless
- Improved indoor air Quality
- Reduces greenhouse gas emissions
- Natural color
- Durability



# Application Overview



## Applications on Building types

Building Applications			Non Residential Buildings					Residential Buildings	
			Hospitals	Offices & Government	Universities	Towers	Commercial Buildings	Villas	Apartments
External	Roof	Concrete	✓	✓	✓	✓	✓	✓	✓
		Metal			✓		✓		
	Wall	Cavity	✓	✓	✓	✓	✓	✓	✓
		Curtain	✓	✓	✓	✓	✓		
		Façade	✓	✓	✓	✓	✓		
		ETICS	✓	✓	✓		✓	✓	✓
Internal	Roof	Soffit	✓	✓	✓	✓	✓	✓	
		Suspended	✓	✓	✓	✓	✓	✓	
	Wall	Partition	✓	✓	✓	✓		✓	
		Internal	✓	✓	✓	✓	✓	✓	
	Floor	Floor	✓	✓	✓	✓	✓	✓	



## Wall Overview



**External wall**



**Partition wall**

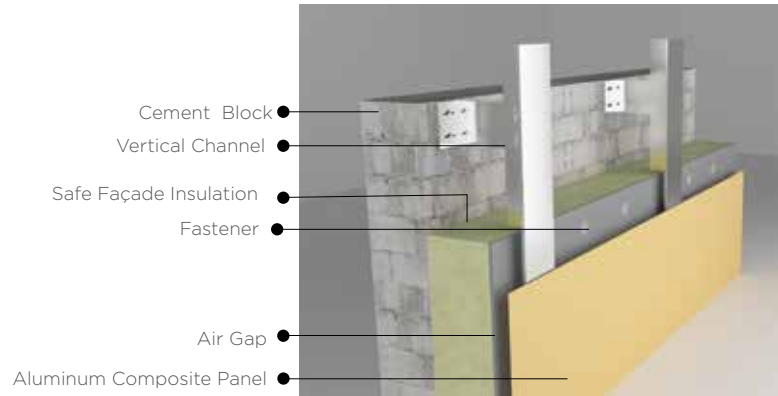


**Internal wall**



# Façade

Façade is the external face of a building. Façade insulation functions as a protection barrier against heat, cold, noise and fire. It also keeps the building dry and safe. It is advisable to consider non-combustible insulation in façade applications since it will reduce and delay the fire spread besides offering excellent thermal comfort and acoustics.



KIMMCO-ISOVER's façade insulation products are non combustible and hydrophobic in nature, do not keep moisture. The open wool structure keeps the insulation dry. Façade products are an excellent choice for ventilated and unventilated façade. The product is available in Aluminum Foil Scrim (FS), unfaced or Black Glass Tissue (BGT)

## ADVANTAGES

- Thermal Performance
- Fire Performance
- Acoustic Performance
- Water Resistance
- Unique Light Weight
- Easy and Fast Installation
- Durability

Characteristic	Unit	Value			Standards
Product Name		Safe Façade Insulation			
Width	m	0.6-1.2			ASTM C303
Length	m	1			
Thickness	mm	50-100			
Facing		Unfaced / FS / BGT			
Density	kg/m <sup>3</sup>	24	32	48	ASTM C303
Thermal Conductivity (25°C)	W/m.K	0.035	0.033	0.031	ASTM C518
Thermal Resistance (25°C)	m <sup>2</sup> .K/W	1.42-2.85	1.51 - 3.03	1.61 - 3.22	
Reaction to Fire			A1		EN 13501
Surface burning Characteristics			Class A		ASTM E84
Fire Rating / Surface spread of flame			Class 0, Class 1		BS 476 part 6 & 7
Non Combustibility			Non Combustible		ASTM E136/ BS476 part4
Short term water Absorption	kg.m <sup>2</sup>		≤ 1.0		EN 1609
Long term water Absorption	kg.m <sup>2</sup>		≤ 3.0		EN 12087

\* Non-standard products may be available upon request



KIMMCO-ISOVER's façade insulation products are non combustible and hydrophobic in nature. The products are durable and do not have aging effect. COMFORT Façade Slab are available either un-faced, or faced with Aluminum foil or Black Glass Tissue (BGT). The product is suitable for all types of ventilated facades system (glass, granite, marble and aluminum)



### ADVANTAGES

- Thermal Performance
- Effective Fire Performance
- Acoustic Performance
- Water Resistance
- Durability
- Easy and Fast Installation

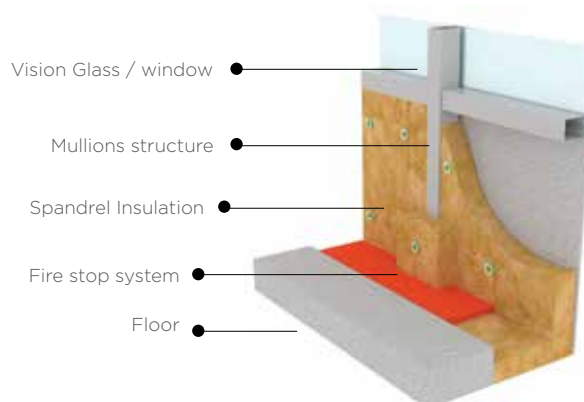
Characteristic	Unit	Value		Standard
Product Name		COMFORT Façade Slab		
Length	m	1.2		EN 822 / ASTM C303
Width	m	0.6		EN 822 / ASTM C303
Thickness	mm	50 - 200		EN 823 / ASTM C303
Facing	-	Unfaced / Aluminum foil / BGT		
Density	kg/m <sup>3</sup>	50	70	EN 1602 / ASTM C303
Thermal Conductivity (24°C)	W/m.K	0.036	0.035	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.35 - 5.55	1.4 - 5.7	EN 13162
Reaction to Fire	-	A1/A2		EN 13501-1
Surface Burning Characteristics	-	Class A		ASTM E84
Dimensional Stability	%	≤ 1		EN 1604
Short Term Water Absorption	kg/m <sup>2</sup>	< 1		EN 1609
Long Term Water Absorption	kg/m <sup>2</sup>	< 3		EN 12087

\* Non-standard products may be available upon request



# Curtain wall

Curtain wall systems are a non-load bearing solution for an external wall. Low thermal conductivity and high fire rating of the curtain wall system is important for energy saving and safety. Fire usually spread through spandrel region, it is advisable to use non-combustible insulation materials for such applications for improved safety and this will also provide higher R-value at spandrel locations.



COMFORT SA slab are non-combustible with low thermal conductivity ideally suitable for spandrel insulation system. COMFORT SA slab are available Unfaced or with one side faced with Black Glass Tissue (BGT) for thermal, Acoustic and fire safety purposes.

**ADVANTAGES**

- Thermal Performance
- Effective Fire Performance
- Acoustic Performance
- Improves comfort
- Easy to handle
- Durable

Characteristic	Unit	Value		Standard
Product Name		COMFORT SA Slab		
Length	m	1.2		EN 822 / ASTM C303
Width	m	0.6		EN 822 / ASTM C303
Thickness	mm	50 - 200		EN 823 / ASTM C303
Facing	-	Unfaced / BGT		-
Reaction to Fire	-	A1/A2		EN 13501-1
Surface Burning Characteristics	-	Class A		ASTM E84
Density	kg/m <sup>3</sup>	50	70	EN 1602 / ASTM C303
Thermal Conductivity (24°C)	W/m.K	0.036	0.035	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.35 - 5.55	1.4 - 5.7	EN 13162
Dimensional Stability	%	≤ 1		EN 1604

\* Non-standard products may be available upon request



### Perimeter Joint fire protection

Perimeter joint (edge of slab) separates spaces vertically between floors, and it is needed to facilitate the movement between curtain wall and building structures to avoid excessive loading. Fire naturally spread from bottom to top floors through perimeter joints. Therefore, it is important to stop the spread of fire by sealing these joints through fire rated systems.

COMFORT SA slab is a non-combustible, rigid & semi-rigid stone mineral wool insulation that provides superior fire resistance and sound control. COMFORT SA slab is UL and Intertek approved as a forming material for firestop systems.



Characteristic	Unit	Value	Standard
Product Name		COMFORT SA Slab	
Density	kg/m <sup>3</sup>	50 - 150	EN 1602 / ASTM C303
Length	m	1.2	EN 822 / ASTM C303
Width	m	0.6	EN 822 / ASTM C303
Thickness	mm	50 - 100	EN 823 / ASTM C303
Facing	-	Unfaced	-
Reaction to Fire	-	A1	EN 13501-1
Surface Burning Characteristics	-	Class A	ASTM E84
Fire Rating	minutes	40 - 180	EN 1366-4

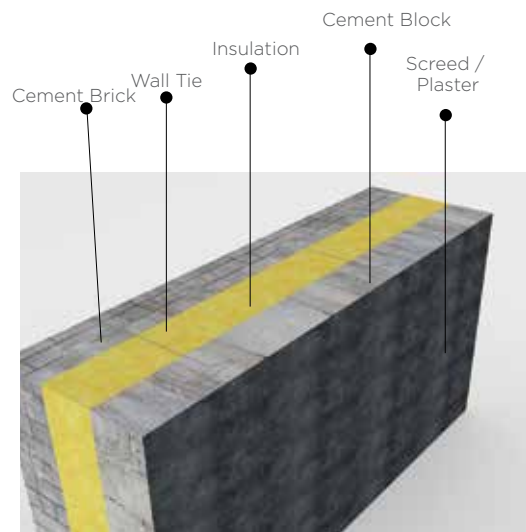
\* Non-standard products may be available upon request



# Cavity

A cavity wall is made up of two walls with a gap in between known as the cavity; the outer leaf is usually made of brick, and the inner layer of brick or concrete block, with the cavity being usually filled with Insulation to get an excellent Thermal & Acoustic comfort.

Filling the cavity with the KIMMCO-ISOVER insulation material reduces the heat gain during summer and heat loss during winter through the building walls.



Safe Cavity insulation is an unfaced or Aluminum Foil Scrim Kraft (FSK) faced roll & slab specifically developed for cavity application. Safe Cavity insulation achieves best thermal, fire & acoustic performances. Safe Cavity insulation are flexible, light in weight, easy to install and can compress to save on logistics and onsite space.

**ADVANTAGES**

- Thermal Insulation
- Acoustic Performance
- Improves comfort
- Durable
- Non-Combustible
- Light in weight
- Easy to handle and install
- Increase the value of home



Characteristic	Unit	Value		Standards
Product Name		Safe Cavity Insulation		
Facing	-	Unfaced / FSK		ASTM C1136
Thickness	mm	50-100		ASTM C167 / C303
Length	m	10-30 (Roll)	1 (Slab)	
Density	kg/m <sup>3</sup>	18	24	
Thermal Conductivity (25°C)	W/m.K	0.038	0.035	ASTM C518
Thermal Resistance (25°C)	m <sup>2</sup> .K/W	1.31 - 2.63	1.42 - 2.85	
Reaction to Fire	-	A1		EN 13501
Surface burning Characteristics		Class A		ASTM E84
Fire Rating / Surface spread of flame		Class 0, Class 1		BS 476 part 6 & 7
Non Combustibility		Non Combustible		ASTM E136/ BS476 part4

\* Non-standard products may be available upon request



COMFORT SA slab are hydrophobic in nature with low thermal conductivity. when fitted in cavity, it provides excellent thermal performance. COMFORT SA slab are available in un-faced and aluminum faced type.

### ADVANTAGES

- Thermal Insulation
- Acoustic Performance
- Improves comfort
- Durable
- Fire Performance
- Increase the value of home

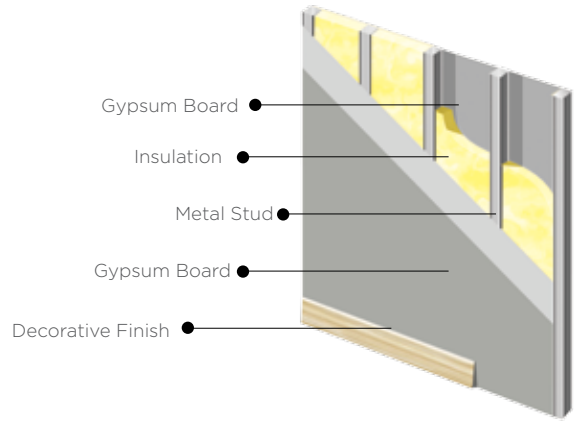
Characteristic	Unit	Value		Standard
Product Name		COMFORT SA Slab		
Length	m	1.2		EN 822 / ASTM C303
Width	m	0.6		
Thickness	mm	50 - 100		EN 823 / ASTM C303
Facing	-	Unfaced / Aluminum		-
Density	kg/m <sup>3</sup>	40	50	EN 1602 / ASTM C303
Thermal Conductivity (24°C)	W/m.K	0.037	0.036	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.35 - 2.7	1.35 - 2.75	EN 13162
Reaction to Fire	-	A1 (Unfaced)		EN 13501-1
Surface Burning Characteristics	-	Class A		ASTM E84
Water Vapor Diffusion Resistance Factor	-	1		EN 12086
Short Term Water Absorption	kg/m <sup>2</sup>	< 1		EN 1609
Long Term Water Absorption	kg/m <sup>2</sup>	< 3		EN 12087

\* Non-standard products may be available upon request



# Partition wall

Partition wall is a lightweight, non-loadbearing wall structure. Normally partition walls are made of gypsum board with insulation as infill. It is primarily used as a sound resisting wall in a residential, commercial and industrial buildings. It is an alternative to brick wall that can offer high acoustic and fire resistance with minimum wall thickness. Partition wall can offer sound reduction up to 60 dB and fire rating upto 4 hr with suitable construction.



KIMMCO-ISOVER glass mineral wool roll is light weight and is ideally suitable for partition wall applications where superior noise reduction is required. The flexible glass mineral wool roll can be easily cut and installed.

## ADVANTAGES

- Acoustic Performance
- Non-combustible
- Light in weight
- Easy to handle and install
- Reduce the load on structure
- Saves floor space
- Cost saving



Characteristic	Unit	Value		Standards
Product Name		KBR		
Density	kg/m <sup>3</sup>	16	24	ASTM C167
Width	m	0.6		
Length	m	10-20		
Thickness	mm	25-150		
Facing	-	Unfaced		
Reaction to Fire	-	A1		EN 13501
Surface burning Characteristics	-	Class A		ASTM E84
Fire Rating / Surface spread of flame	-	Class O, Class 1		BS 476 part 6 &7
Non Combustibility	-	Non Combustible		ASTM E136/ BS476 part4
Sound Transmission Class (STC)	dB	Up to 60 Based on construction		ASTM E90

- Non-standard products may be available upon request
- These product are also available in EcoBuild range



KIMMCO-ISOVER stone mineral wool slabs are fire safe and have good noise reduction properties. The products can be used in normal and fire rated partition walls, stairwells and elevator shafts, adjacent walls.

#### ADVANTAGES

- Enhanced Fire resistance
- Acoustic Performance
- Easy to handle and install
- Reduce the load on structure
- Saves floor space
- Cost saving

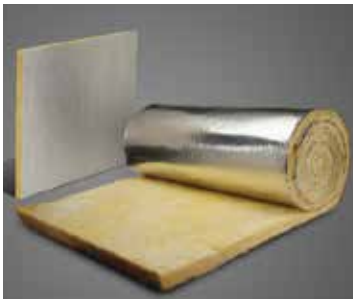
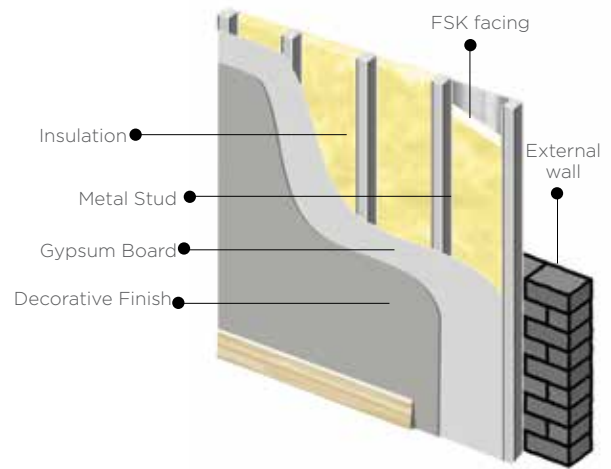
Characteristic	Unit	Value		Standard
Product Name		COMFORT SA Slab		
Density	kg/m <sup>3</sup>	40	50	EN 1602 / ASTM C303
Length	m	1.2		EN 822 / ASTM C303
Width	m	0.6		EN 822 / ASTM C303
Thickness	mm	50 - 200		EN 823 / ASTM C303
Facing	-	Unfaced		-
Reaction to Fire	-	A1		EN 13501-1
Surface Burning Characteristics	-	Class A		ASTM E84
Fire Rating / Surface spread of flame	-	Class O, Class 1		BS 476 part 6 & 7
Non Combustibility	-	Non Combustible		ASTM E136/ BS476 part4
Sound transmission class	dB	Up to 60 Based on construction		ASTM E90

\* Non-standard products may be available upon request



# Internal wall

The perimeter walls of the building can be effectively insulated from inside the building for thermal and acoustic benefits. Internal wall insulation reduces the heat gain through walls during summer and heat loss during winter offering enhanced thermal comfort with minimum dependency on air conditioners. The insulation also reduces traffic noise and other noise disturbance entering the building.



KIMMCO-ISOVER glass mineral wool is light weight, flexible and semi rigid products specifically designed to deliver optimal thermal and acoustic performance wall application. The products are available with Aluminum Foil Scrim Kraft (FSK)



## ADVANTAGES

- Acoustic Performance
- Thermal Insulation
- Improved comfort
- Durable
- Fire Performance
- Improved indoor air quality
- Can be implemented during renovation/ upgrade

Characteristic	Unit	Value		Standards
Product Name		KBS		
Width	m	0.6-1.2		ASTM C303
Length	m	1		
Thickness	mm	25-100		
Facing	-	Unfaced / FSK		ASTM C1136
Density	kg/m <sup>3</sup>	32	48	ASTM C303
Thermal Conductivity (25°C)	W/m.K	0.033	0.031	ASTM C518
Thermal Resistance (25°C)	m <sup>2</sup> .K/W	0.75 - 3.03	0.80 - 3.22	
Reaction to Fire	-	A1		EN 13501
Surface burning Characteristics		Class A		ASTM E84
Fire Rating / Surface spread of flame		Class O, Class 1		BS 476 part 6 & 7
Non Combustibility		Non Combustible		ASTM E136/ BS476 part4

- Non-standard products may be available upon request
- These product are also available in EcoBuild range



Stone mineral wool slab faced with gypsum board on one side and unfaced or aluminum foil in between. It is used on the inner surfaces of exterior walls, adjacent walls, internal walls of the buildings, periphery walls of staircases and elevator shafts and as internal wall lining timber framed buildings for fire safe, thermal and sound insulation purposes.

### ADVANTAGES

- Acoustic Performance
- Thermal Insulation
- Improved comfort
- Durable
- Fire Performance
- Improve indoor air quality
- Can be implemented during renovation/upgrade

Characteristic	Unit	Value		Standard
Product Name		COMFORT SA Slab		
Length	m	1.2		EN 822 / ASTM C303
Width	m	0.6		EN 822 / ASTM C303
Thickness	mm	50 - 200		EN 823 / ASTM C303
Facing	-	Unfaced / Aluminum Foil		-
Density	kg/m <sup>3</sup>	40	50	EN 1602 / ASTM C303
Thermal Conductivity (24 °C)	W/m.K	0.037	0.036	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.35 - 5.4	1.35 - 5.55	EN 13162
Reaction to Fire	-	A1		EN 13501-1
Surface Burning Characteristics	-	Class A		ASTM E84
Water Vapor Diffusion Resistance Factor	-	1		EN 12086

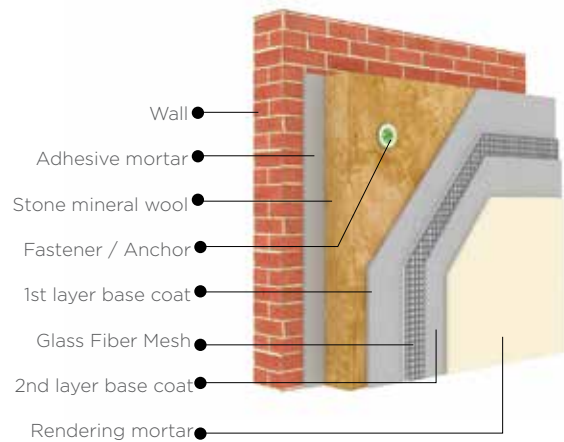
\* Non-standard products may be available upon request



# ETICS / EIFS

External Thermal Insulation Composite System (ETICS) or External Insulation Finish System (EIFS) is one of the most efficient systems to insulate external walls (new or renovated) to offer improved thermal and acoustic comfort.

Theoretically ETICS has zero thermal bridges. Besides that, ETICS protects the structure from the thermal stresses caused by harsh weather conditions.



KIMMCO-ISOVER COMFORT ETICS Slab are specifically produced to provide high mechanical strength and superior thermal properties. COMFORT ETICS Slabs improve the acoustic performance of external walls as well as enhance fire safety of façade system.

## ADVANTAGES

- Thermal Insulation
- Acoustic Performance
- High mechanical strength
- Fire Safe
- Durable
- Water repellent



Characteristic	Unit	Value	Standard
Product Name		COMFORT ETICS Slab	
Density	kg/m <sup>3</sup>	100-140	EN 1602 / ASTM C303
Length	m	1.2	EN 822 / ASTM C303
Width	m	0.6	EN 822 / ASTM C303
Thickness	mm	50 - 200*	EN 823 / ASTM C303
Facing	-	Unfaced	-
Thermal Conductivity (24°C)	W/m.K	0.034-0.033	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.45-6.05	EN 13162
Reaction to Fire	-	A1	EN 13501-1
Surface Burning Characteristics	-	Class A	ASTM E84
Compressive Strength	kPa	≥ 20	EN 826
Tensile Strength Perpendicular to Faces	kPa	≥ 7.5	EN 1607
Dimensional Stability	%	≤ 1	EN 1604
Squareness	mm/m	≤ 5	EN 824
Flatness	mm	≤ 6	EN 825
Long Term Water Absorption	kg/m <sup>2</sup>	≤ 3	EN 12087

- Non-standard products may be available upon request
- Multiple layer might be required

## Roof and Floor Overview



**Underdeck/ soffit  
Suspended Ceiling**



**Over deck / Flat Roof**



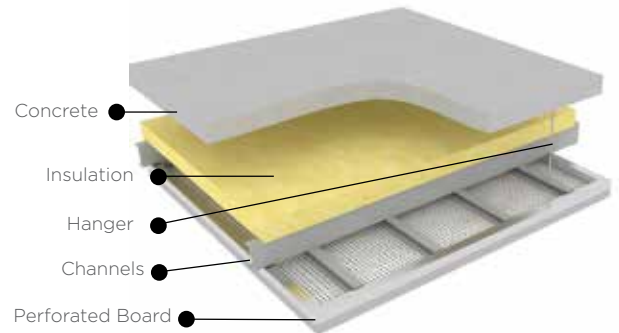
**Floor**



# Suspended Ceiling

Suspended ceilings offers exceptional acoustic properties and enhance indoor environmental quality by absorption of noise. They also reduce sound transmission to and from a room or building ,makes sound clear and audible. Suspended ceiling also increases the fire safety as mineral wool products are naturally non-combustible.

As the material is installed so high, the soft and absorbent Mineral wool insulation are safe from mechanical damage. It is easy to install and maintenance free. A sustainable choice to use it in schools, hospitals, shopping malls and offices.



Glass mineral wool roll is faced with Yellow Glass Tissue (YGT) on one side and takes the form of a slab when it is rolled out. The system is used for the thermal and sound insulation of the ceilings.

## ADVANTAGES

- Acoustic Performance
- Fire performance
- Improved indoor air quality
- Decreased cooling time
- Easy to handle and install
- Energy Savings
- Light in weight
- Improved Comfort



Characteristic	Unit	Value		Standards
Product Name		KBR		
Width	m	0.6-1.2		ASTM C167
Length	m	10-20		
Thickness	mm	25-150		
Facing	-	Unfaced / YGT		
Noise Reduction Coefficient (NRC)	-	1		ASTM C423
Sound Transmission Class (STC)	dB	35 (50mm Insulation + Gypsum Board)		ASTM E 90
Density	kg/m <sup>3</sup>	16	24	ASTM C167
Thermal Conductivity (25°C)	W/m.K	0.039	0.035	ASTM C518
Thermal Resistance (25°C)	m <sup>2</sup> .K/W	0.64 - 3.84	0.71 - 4.28	
Reaction to Fire	-	A1		EN 13501
Surface burning Characteristics	-	Class A		ASTM E84
Fire Rating / Surface spread of flame	-	Class O, Class 1		BS 476 part 6 & 7
Non Combustibility	-	Non Combustible		ASTM E136/ BS476 part4

- Non-standard products may be available upon request
- These product are also available in EcoBuild range



Stone mineral wool slabs are manufactured with Black Glass Tissue (BGT) facing on one side. It is used on top of the perforated gypsum for acoustic performance.

### ADVANTAGES

- Acoustic Performance
- Fire performance
- Improved indoor air quality
- Decrease the cooling time
- Energy Saving
- Improved Comfort

Characteristic	Unit	Value		Standard
Product Name		COMFORT SA Slab		
Length	m	1.2		EN 822 / ASTM C303
Width	m	0.6		EN 822 / ASTM C303
Thickness	mm	50 - 100		EN 823 / ASTM C303
Facing	-	Unfaced / BGT		-
Noise Reduction Coefficient (NRC)	-	1		ISO 354/ ASTM C423
Sound Transmission Class (STC)	dB	35 (50mm Insulation + Gypsum Board)		ASTM E 90
Density	kg/m <sup>3</sup>	40	50	EN 1602 / ASTM C303
Thermal Conductivity (24°C)	W/m.K	0.037	0.036	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.35 - 2.7	2.75	EN 13162
Reaction to Fire	-	A1		EN 13501-1
Surface Burning Characteristics	-	Class A		ASTM E84
Water Vapor Diffusion Resistance Factor	-	1		EN 12086

\* Non-standard products may be available upon request



## Underdeck/ soffit

The fundamental advantage of the under deck insulation is the lower consumption of energy that is spent on cooling space. Soffit acts as a barrier for the solar heat entering inside the building through exposed roof or heat loss through floor like in underground car parking.



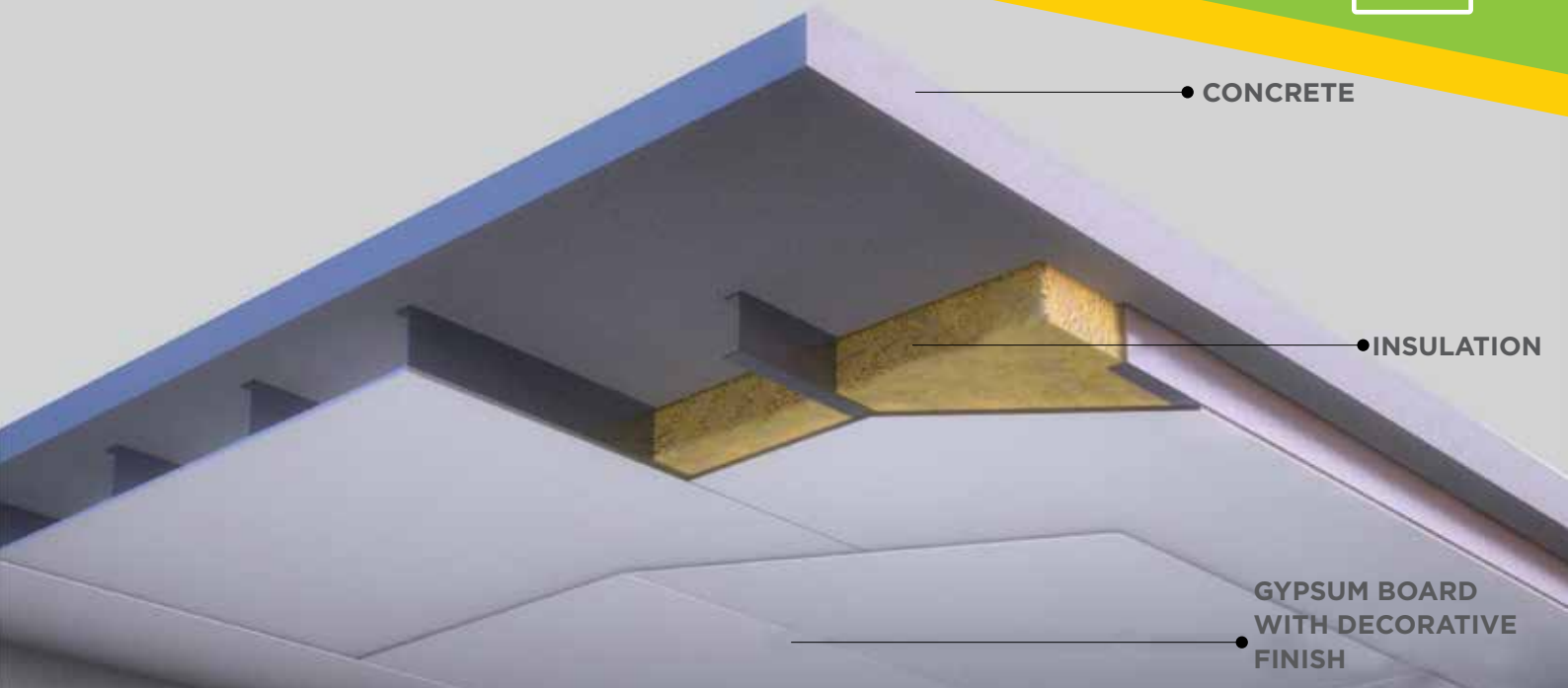
Glass mineral wool slabs are available with various facings. The products are light weight and can be directly fixed to the ceiling with the help of mechanical fixation.

### ADVANTAGES

- Thermal Insulation
- Acoustic Performance
- Fire performance
- Improved indoor air quality
- Decreased cooling time
- Energy Saving
- Improved Comfort

Characteristic	Unit	Value		Standards
Product Name		KBS		
Width	m	0.6 - 12		ASTM C303
Length	m	1		
Thickness	mm	25-100		
Facing	-	FSK / WMP		
Reaction to Fire (Base Fiber)	-	A1		EN 13501
Density	kg/m <sup>3</sup>	24	48	ASTM C303
Thermal Conductivity (25°C)	W/m.K	0.035	0.031	ASTM C518
Thermal Resistance (25°C)	m <sup>2</sup> .K/W	0.71-2.85	0.80 - 3.22	
Sound Transmission Class (STC)	dB	45 (Concrete + 50mm Insulation)		ASTM E90
Surface Burning Characteristics		Class A		ASTM E84
Fire Rating / Surface spread of flame		Class O, Class 1		BS 476 part 6 &7
Non Combustibility		Non Combustible		ASTM E136/ BS476 part4

- Non-standard products may be available upon request



● CONCRETE

● INSULATION

● GYPSUM BOARD WITH DECORATIVE FINISH



KIMMCO-ISOVER SA Comfort slabs are non combustible and are available with aluminum foil or Black Glass Tissue(BGT) facing. The slabs can be directly fixed to the ceilings with the help of mechanical fixation

### ADVANTAGES

- Thermal Insulation
- Acoustic Performance
- Fire performance
- Improved indoor air quality
- Decreased cooling time
- Energy Savings
- Improved Comfort

Characteristic	Unit	Value		Standard
Product Name		COMFORT SA Slab		
Length	m	1.2		EN 822 / ASTM C303
Width	m	0.6		EN 822 / ASTM C303
Thickness	mm	50 - 200		EN 823 / ASTM C303
Facing	-	Aluminum foil / BGT		-
Density	kg/m <sup>3</sup>	50	70	EN 1602 / ASTM C303
Thermal Conductivity (24 °C)	W/m.K	0.036	0.035	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.35 - 5.55	1.4 - 5.7	EN 13162
Sound Transmission Class (STC)	dB	45 (Concrete + 50mm Insulation)		ASTM E90
Reaction to Fire	-	A1/A2		EN 13501-1
Surface Burning Characteristics	-	Class A		ASTM E84
Squareness	mm/m	≤ 5		EN 824
Flatness	mm	≤ 6		EN 825

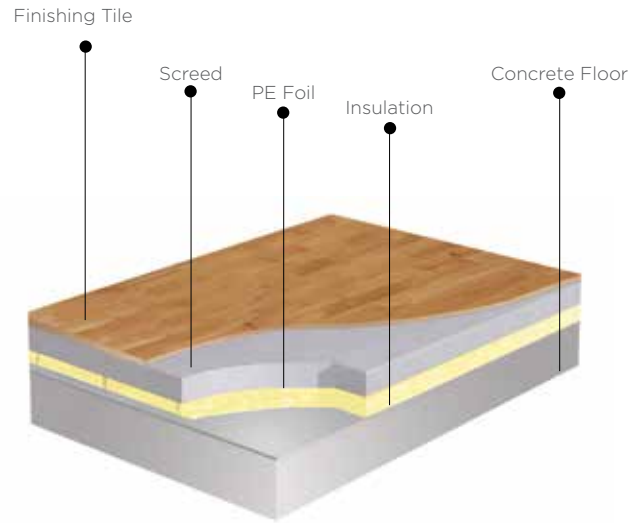
\* Non-standard products may be available upon request



# Floor Insulation

Floor insulation in intermediate floor acts as sound barrier preventing impact noise from being transmitted to other parts of the building through floor and wall structures.

In case of floor separating air-conditioned space from unconditioned area, floor insulation acts as a thermal insulation reducing the heat loss/gain besides acting as sound barrier.



KIMMCO-ISOVER Glass mineral wool slabs are resilient and have sufficient elasticity to act as sound absorber. It provides optimum acoustic insulation against impact noise from human traffic or from equipment vibrations

## ADVANTAGES

- Acoustic Performance
- Mechanical Strength
- Improved Comfort
- Durable
- Easy to Install

Characteristic	Unit	Value	Standards
Product Name		KAFI	
Density	kg/m <sup>3</sup>	120	ASTM C303
Width	m	0.6-1.2	
Length	m	1	
Thickness	mm	20-50	
Facing	-	Unfaced	
Reaction to Fire	-	A1	EN 13501
Surface burning Characteristics	-	Class A	ASTM E84
Fire Rating / Surface spread of flame	-	Class O, Class 1	BS 476 part 6 & 7
Non Combustibility	-	Non Combustible	ASTM E136/ BS476 part4
Impact Insulation Class	IIC	57	ASTM E 492

\* Non-standard products may be available upon request



COMFORT Floor Slab are durable, resilient and have very high compressive strength and point load making it a preferred choice for floor insulation application. COMFORT Floor Slab provide optimum acoustic insulation against impact noise from human traffic or from equipment vibrations



### ADVANTAGES

- Acoustic Performance
- Mechanical Strength
- Improved Comfort
- Durable
- Easy to Install

Characteristic	Unit	Value		Standard
Product Name		COMFORT Floor Slab		
Density	kg/m <sup>3</sup>	130	150	EN 1602 / ASTM C303
Length	m	1.2		EN 822 / ASTM C303
Width	m	0.6		EN 822 / ASTM C303
Thickness	mm	30 - 50		EN 823 / ASTM C303
Facing	-	Unfaced		-
Reaction to Fire	-	A1		EN 13501-1
Surface Burning Characteristics	-	Class A		ASTM E84
Compressive Strength	kPa	≥ 15		EN 826
Point Load	N	>500		EN 12430
Squareness	mm/m	≤ 5		EN 824
Flatness	mm	≤ 6		EN 825

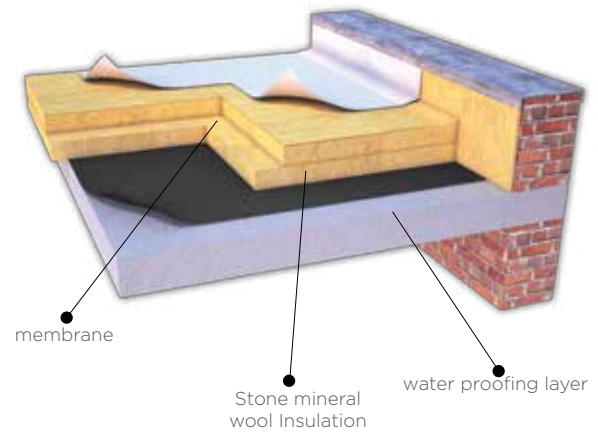
\* Non-standard products may be available upon request



## Over deck / Flat Roof

Floor insulation in intermediate floor acts as sound barrier preventing impact noise from being transmitted to other parts of the building through floor and wall structures.

In case of floor separating air-conditioned space from unconditioned area, floor insulation acts as a thermal insulation reducing the heat loss/gain besides acting as sound barrier.



COMFORT Roof Slab products are non-combustible stone mineral wool slabs that are specifically produced for flat roof insulation. They have high mechanical strength and offer efficient thermal & acoustic insulation for all kinds of metal and concrete roofs having various slopes.



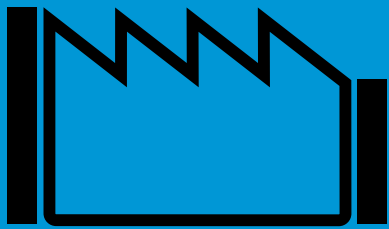
### ADVANTAGES

- Thermal Insulation
- Mechanical Strength
- Acoustic Performance
- Water Repellent
- Energy Saving
- Improved Comfort

Characteristic	Unit	Value		Standard
Product Name		COMFORT Roof Slab		
Length	m	1.2		EN 822 / ASTM C303
Width	m	0.6		EN 822 / ASTM C303
Thickness	mm	50 - 200*		EN 823 / ASTM C303
Facing	-	Unfaced		-
Density	kg/m <sup>3</sup>	130	150	EN 1602 / ASTM C303
Thermal Conductivity (24°C)	W/m.K	0.033	0.033	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.5 - 6.05	1.5 - 6.05	EN 13162
Reaction to Fire	-	A1		EN 13501-1
Surface Burning Characteristics	-	Class A		ASTM E84
Compressive Strength	kPa	≥ 40		EN 826
Point Load	N	>500		EN 12430
Dimensional Stability	%	≤ 1		EN 1604
Short Term Water Absorption	kg/m <sup>2</sup>	≤ 1		EN 1609
Long Term Water Absorption	kg/m <sup>2</sup>	≤ 3		EN 12087

- Non-standard products may be available upon request
- Multiple layer might be required

# Metallic Building Overview



**Metallic wall**

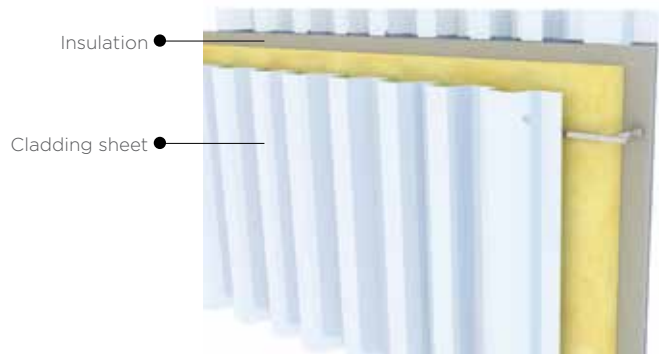


**Metallic Roof**



# Metal Buildings -Wall

Since the steel used in metal buildings is a highly conductive material, a good thermal insulation is a must. Insulation reduces the energy consumption for cooling and the risk of moisture generation by condensation. It also improves the acoustic comfort inside the building.



KIMMCO-ISOVER Glass mineral wool rolls are light weight and are available with FSK or white vinyl. The product can be supplied in different sizes to optimize installation. It is utilized for thermal and acoustic insulation in façade cladding in Metallic buildings.

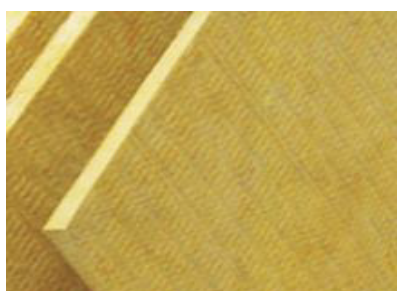
## ADVANTAGES

- Thermal Insulation
- Acoustic Performance
- Light in weight
- Fire safe
- Durable
- Easy to install



Characteristic	Unit	Value		Standards
Product Name		KBR		
Width	m	0.6-1.2		ASTM C167
Length	m	10-20		
Thickness	mm	25-150		
Facing	-	Unfaced / FSK / White vinyl		ASTM C1136
Density	kg/m <sup>3</sup>	12	20	ASTM C167
Thermal Conductivity (25°C)	W/m.K	0.041	0.036	ASTM C518
Thermal Resistance (25°C)	m <sup>2</sup> .K/W	0.61 - 3.65	0.69 - 4.16	
Reaction to Fire	-	A1		EN 13501
Surface burning Characteristics	-	Class A		ASTM E84
Fire Rating / Surface spread of flame	-	Class O, Class 1		BS 476 part 6 & 7
Non Combustibility	-	Non Combustible		ASTM E136/ BS476 part4

- Non-standard products may be available upon request
- Multiple layer might be required



Stone mineral wool slabs and rolls are non-combustible. The products are durable and are available un-faced or with FSK are vapor barrier. Comfort SA is used for thermal insulation, sound insulation and fire safety in facade cladding of Metallic buildings.



### ADVANTAGES

- Thermal Insulation
- Acoustic Performance
- Non -Combustible
- Durable
- Easy to install

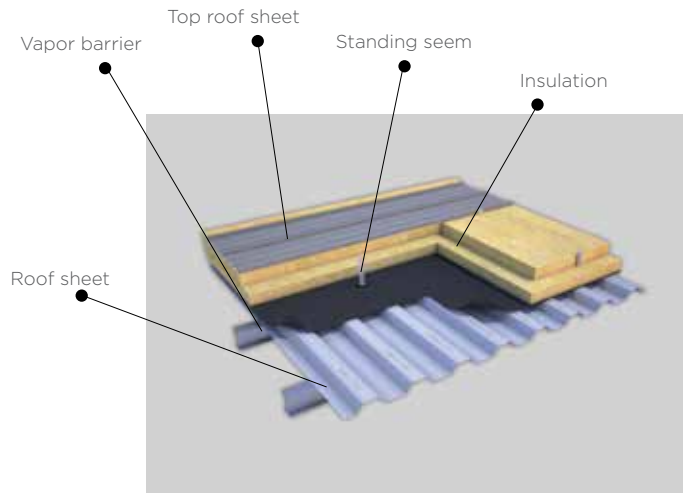
Characteristic	Unit	Value		Standard
Product Name		COMFORT SA		
Length	m	1.2(Slab)	3-7(Roll)	EN 822 / ASTM C303
Width	m	0.6	1.2	EN 822 / ASTM C303
Thickness	mm	50 - 200		EN 823 / ASTM C303
Facing	-	Unfaced / Aluminum foil		-
Density	kg/m <sup>3</sup>	40	50	EN 1602 / ASTM C303
Thermal Conductivity (24°C)	W/m.K	0.037	0.036	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.35 - 5.4	1.35 - 5.55	EN 13162
Reaction to Fire	-	A1/A2		EN 13501-1
Dimensional Stability	%	≤1		EN 1604
Surface Burning Characteristics	-	Class A		ASTM E84
Fire Rating / Surface spread of flame	-	Class O, Class 1		BS 476 part 6 & 7
Non Combustibility	-	Non Combustible		ASTM E136/ BS476 part4

- Non-standard products may be available upon request
- Multiple layer might be required



# Metal Buildings - Roof

Insulating metal buildings is essential, because steel is a highly conductive material and the mineral wool will help to reduce the heat loss during the cold season and the heat gain during summer. Mineral wool insulation in roof also acts as a good sound insulator and reduce the noise generated by the rain.



KIMMCO-ISOVER Glass mineral wool Rolls are light weight and are available with FSK or white vinyl. The product can be supplied in different sizes to optimize installation. It is utilized for thermal and acoustic insulation in Metal buildings.

## ADVANTAGES

- Thermal Insulation
- Acoustic Performance
- Non -Combustible
- Durable
- Energy Saving
- Easy to install



Characteristic	Unit	Value		Standards
Product Name		KBR		
Width	m	0.6-1.2		ASTM C167
Length	m	10-20		
Thickness	mm	25-150		
Facing	-	Unfaced / FSK / White vinyl		ASTM C1136
Density	kg/m <sup>3</sup>	12	20	ASTM C167
Thermal Conductivity (25°C)	W/m.K	0.041	0.036	ASTM C518
Thermal Resistance (25°C)	m <sup>2</sup> K/W	0.61 - 3.65	0.69 - 4.16	
Reaction to Fire	-	A1		EN 13501
Surface Burning Characteristics	-	Class A		ASTM E84
Fire Rating / Surface spread of flame	-	Class O, Class 1		BS 476 part 6 & 7
Non Combustibility	-	Non Combustible		ASTM E136 / BS476 part4

- Non-standard products may be available upon request
- Multiple layer might be required



Stone mineral wool slabs and rolls are non-combustible. The products are durable and are available un-faced or with FSK are vapor barrier. Comfort SA is used for thermal insulation, sound insulation and fire safety in facade cladding of Metallic buildings.

#### ADVANTAGES

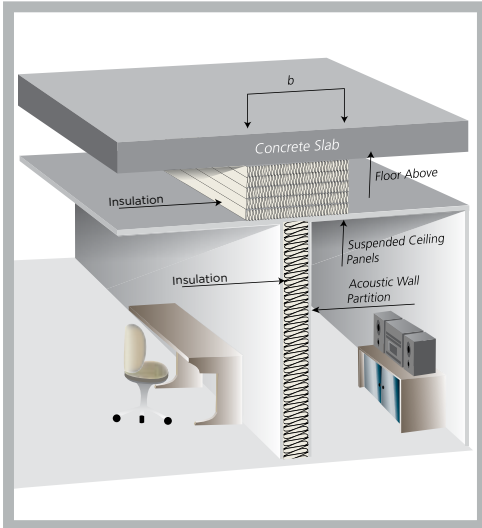
- Thermal Insulation
- Acoustic Performance
- Non -Combustible
- Durable
- Energy Saving
- Easy to install



Characteristic	Unit	Value		Standard
Product Name		COMFORT SA		
Length	m	1.2 (Slab)	3-7 (Roll)	EN 822 / ASTM C303
Width	m	0.6	1.2	EN 822 / ASTM C303
Thickness	mm	50 - 200		EN 823 / ASTM C303
Facing	-	Unfaced / Aluminum foil		-
Density	kg/m <sup>3</sup>	40	50	EN 1602 / ASTM C303
Thermal Conductivity (24°C)	W/m.K	0.037	0.036	EN 12667/ASTM C518
Thermal Resistance (24°C)	m <sup>2</sup> .K/W	1.35 - 5.4	1.35 - 5.55	EN 13162
Reaction to Fire	-	A1/A2		EN 13501-1
Dimensional Stability	%	≤1		EN 1604
Surface Burning Characteristics	-	Class A		ASTM E84
Fire Rating / Surface spread of flame	-	Class O, Class 1		BS 476 part 6 & 7
Non Combustibility	-	Non Combustible		ASTM E136/ BS476 part4

- Non-standard products may be available upon request
- Multiple layer might be required

## Other Application



Sound Stop system



Precast



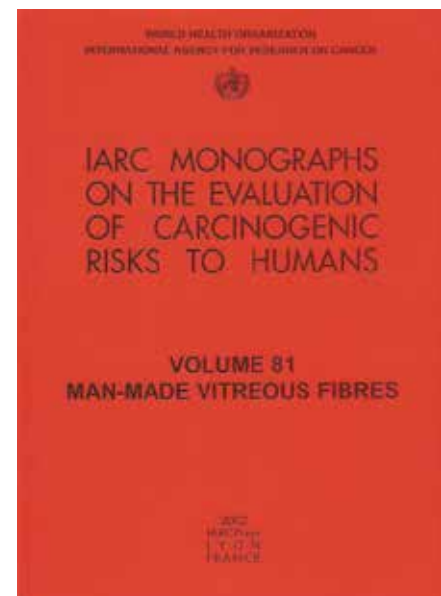
Sandwich Panels

KIMMCO-ISOVER has the knowledge and manufacturing expertise to offer customized products and solutions to meet your requirement. We have in-house testing facilities and latest technologies to consistency supply high quality products.

## HEALTH

Mineral wool products are bio-soluble in nature which means unrisky for health. The International Agency for Research on Cancer (IARC), a part of the World Health Organization, has declared glass mineral wool / stone mineral wool as group 3 “not classifiable as to carcinogenicity in humans”.

Mineral wool products, have been extensively studied with more than 2500 scientific publications, which support the decision of the most recognized experts that mineral wool fibers are safe to manufacture, install and live with and the same has been recognized by Health authorities at International (WHO/IARC),EU and national level and translated into rules and regulations, e.g. in the REACH regulation, where mineral wool fibres are not classified as hazardous.



# Commitment to Quality

## Properties of KIMMCO-ISOVER Products

- Excellent thermal performance
- Superior acoustic performance
- Excellent fire safety
- Environmentally friendly: made from abundantly available, non-strategic materials.
- Suitable for a wide variety of applications (flexible, semi-rigid, rigid and extra-rigid)
- Address a variety of performance requirements (wide range of facing materials)
- Easy to cut and install, minimum wastage on-site
- Comparatively light in weight
- Dimensionally stable
- No sagging or settling
- Complies with international standards

## Further, we are members of the following industry associations:

- Emirates Green Building Council (EGBC)
- Kuwait Green Building Council (KGBC)
- Qatar Green Building Council (QGBC)
- Singapore Green Building Council (SGBC)
- MASDAR (The Future Build)
- Middle East Mineral wool Insulation Manufacturers Association (MEMIMA)

## Our Commitment to the Environment

KIMMCO-ISOVER was selected as the sole insulation supplier and official collaborator with MASDAR city, the world's first zero-carbon, zero-waste city, in Abu Dhabi. We have a strong commitment to the environment, health and safety of our people, and surrounding communities, and actively collaborate with local and international environmental agencies. Furthermore, KIMMCO-ISOVER products help developers achieve green building rating certifications such as LEED, Estidama and QSAS

## Our Product Listing & Certification

- SASO
- DCL
- DCD
- UL
- CE
- BV
- ABS
- TBWIC

## Our Commitment to Quality

KIMMCO-ISOVER have a strong commitment to quality, as recognized by our certification by international bodies such as ISO.



# Referencing Success





**KIMMCO ISOVER**  
SAINT-GOBAIN

[www.kimmco-isover.com](http://www.kimmco-isover.com)

Kuwait Insulating Material Manufacturing Co.  
Saudi International Insulation Manufacturing Co.