

EcoBuild

Future Insulation by KIMMCO



100% Natural

In Sync with Nature



means insulation!

In Sync with Nature



EcoBuild, provided by KIMMCO, opens a new era in sustainable insulation solutions. It is a further development of its existing high performing glasswool insulation for building applications. Manufactured by using Saint-Gobain Isover's patented state-of-the-art technology, EcoBuild is 100% containing 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.

Hence, EcoBuild has a big impact in reducing the fossil fuels utilization and being able to prolongate the existing oil and gas resources for our future generations.

Being "In Sync with Nature", KIMMCO is determined continuously to supply products which have a maximum positive impact to the environment by minimizing the carbon footprint impact of our manufacturing processes, shipping operations and provide the next generation products that raise the level of sustainability.





Sustainable Insulation Solution



- 100% Natural
- High Quality
- High Value
- High Performance



The building market has a strong potential to help protect the environment, save the nature, increase life comfort and is, hence, demanding more and more “green” and sustainable products. Additionally, Green Building rating systems, codes and standards are increasingly becoming an integral part of today’s market demand.

With the EcoBuild product range, KIMMCO is able to provide an answer .

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



Technical performances to be delivered over time must be guaranteed and at the same time, the environment and social features of the solutions must be enhanced, in a cost-efficient manner.



Next Generation products

About EcoBuild

EcoBuild is a product range which is predestined for the comfort and safety insulation inside a building. Made 100% out of natural resources, its performance protects the environment during the lifetime of a building.

With exceptional handling benefits including superior softer touch and no odour. EcoBuild slabs and rolls improves job-site efficiency, as it is less dusty and easier to work with, while also providing the excellent thermal, acoustic, fire and indoor air quality performance that customer demands. It meets the most stringent requirements, statutory or voluntary, in Europe on emissions of formaldehyde and VOCs in the indoor air, thereby improving the quality of the environment in which we live and work. EcoBuild is already proven through zero phenol-formaldehyde emission certificate! Being non-hazardous to health according to WHO (World Health Organization), EcoBuild is therefore the ideal solution for interior building insulation.

- Performances that last forever
- Soft touch
- Odourless
- Improved indoor air Quality
- Reduces greenhouse gas emissions
- Zero phenol formaldehyde
- Natural color



Softer touch & comfortable installation



EcoBuild is a high performing product that offers a very soft touch which makes it user-friendly and comfortable to work with. The light-in-weight products are less dusty and itchy, which makes it easy for the contractors to work with and furthermore, makes it easier to handle and install the product onsite.

At the same time, with EcoBuild highly compressed packaging, the products will reduce transport costs and optimize usage of packaging. The storage on-site and in the warehouse will occupy less space which leads to a higher flexibility in planning of the project.

“The product is really flexible and light in weight which makes the product more pleasant and makes my life so easy on-site for easier and faster handling”

Make it. Move it. Feel it.



Odorless



EcoBuild contains only natural resources and manufactured based on KIMMCO's Sustainable Green Technology. The combination of this makes EcoBuild naturally odorless. The product is perceived much more pleasant during installation.

Improved Indoor Air Quality

EcoBuild improves indoor air quality and contributes to the creation of healthier interiors. It complies with GREENGUARD indoor air quality requirement and bonded with free formaldehyde binder.

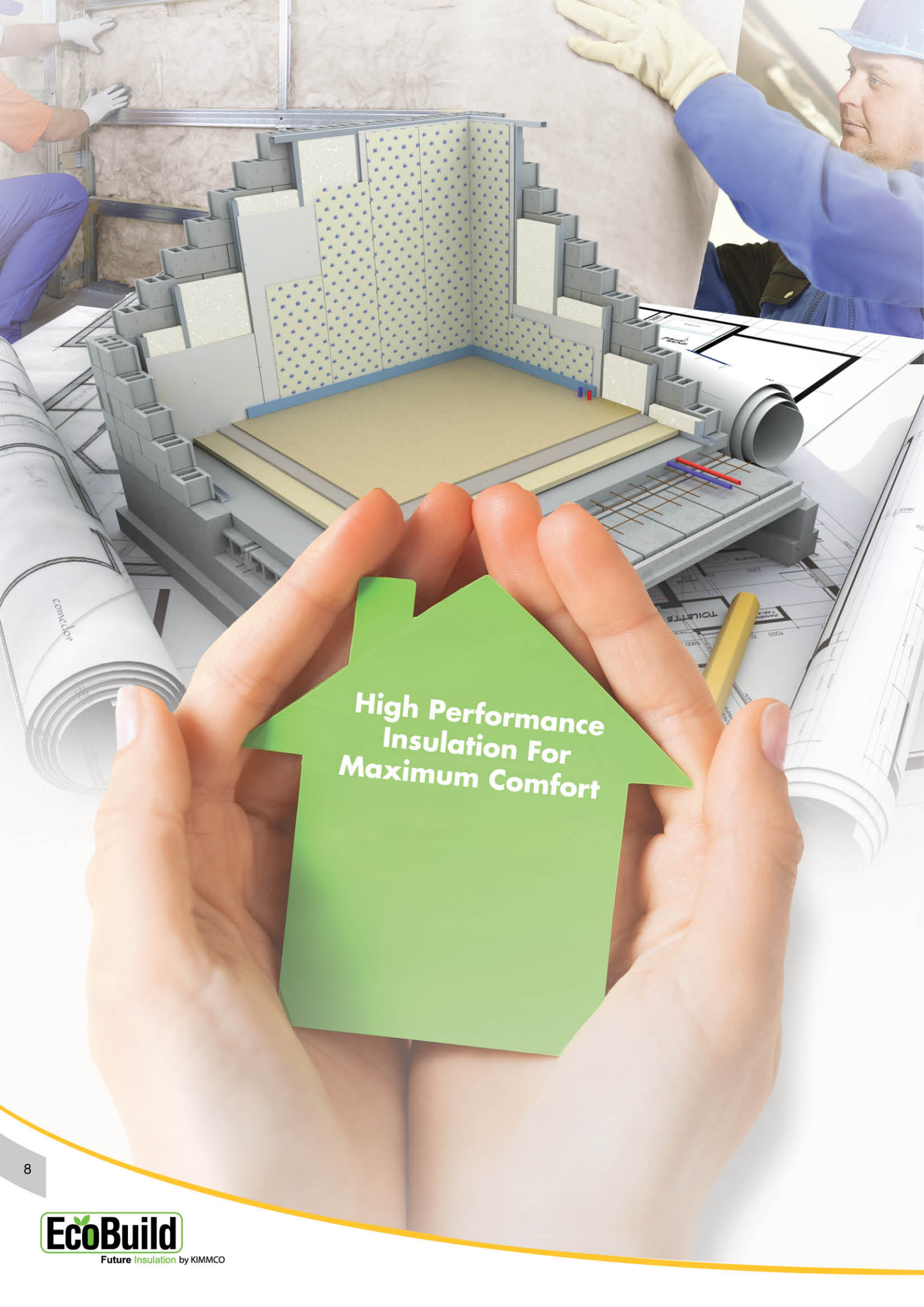


EcoBuild is an ultimate solution for sustainable requirements in building structure. It also has other unique features which makes the user more easy & comfortable to use it.

- Thermally efficient to help fight rising energy bills
- Good sound reduction; reduces noise level wherever applied
- Efficient fire safety through its non-combustibility performance
- Lightweight and flexible for easy installation
- GREENGUARD certified

“Within the first year, EcoBuild saves 12 times as much energy as is used to manufacture it - then continues to save till the life of the structure”





**High Performance
Insulation For
Maximum Comfort**



Insulation in Construction

Insulation is necessary to reduce energy consumption, sound pollution and improve the comfort and quality of life in new or existing buildings regardless of the construction system.

- **Environmental quality** - Insulation fights global warming as it reduces greenhouse gases. Insulating your home is an ecological process. The signing of the Kyoto agreements was a major stage in collective awareness of the need to protect the environment by fighting global warming.
- **Energy savings** - Thermal insulation, by reducing heat wastage, minimizes energy consumption (demand for heating) and therefore reduces the heating bill, consumption and pollution by up to 80%.



Enhanced Thermal Performance



Optimal Acoustic Performance



Effective Fire Protection



Energy Efficiency



Light Weight



Indoor air quality



Environmental friendly



Soft touch



Cost saving



Comfortable Installation



Fast Installation



Maximum Compressibility

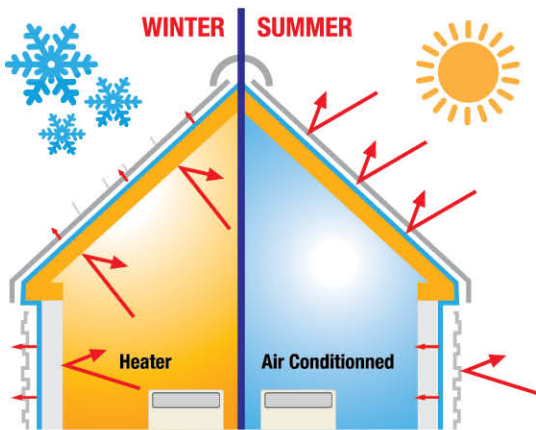
The new EcoBuild Comfort range

KIMMCO's Ecobuild Comfort range achieves best thermal, acoustic and easy to install performances.

The products are named and classified according to their comfort efficiency. The right choice of the most suitable product in building applications has never been made easier.

EcoBuild Indoor Classes	K value (W/m.k @ 25 °C)
Classic	0.039
Premium	0.035
Extra	0.031

Enhanced Comfort through Thermal Insulation



Glasswool Insulation works as a barrier to heat transfer, helping to keep out unwanted heat in summer and preserving precious warmth in winter. In fact, a well-insulated home can stop up to 70% of all heat flow through the roof, walls and floors. Even with air conditioning, insulation is indispensable, as chilled air is far more expensive than warmed air. In the United States, where air conditioning was developed, regulations require Glasswool insulation in walls (US R-Values of 19) and roofs (US R-Values of 30).

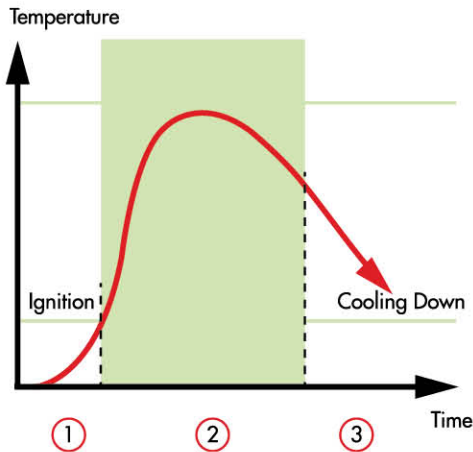
THERMAL RESISTANCE (R VALUES)

An R-Value is the measurement of a material capacity to resist heat flow from one side to the other. In simple terms it measures the effectiveness of insulation and the higher number will represent more effective insulation i.e. more energy savings.

For example, the following table shows the thermal resistance (R) of KIMMCO EcoBuild insulation for each standard thickness at 25°C (77°F), according to S.I. and IMPERIAL Units System.

EcoBuild Indoor Classes	Thermal Resistance (m ² .K/W) at 25 ⁰ C Mean Temp.	Thermal Resistance (ft ² .h/Btu) at 77 ⁰ F Mean Temp.
Classic	1.282	7.407
Premium	1.429	8.333
Extra	1.613	9.306

*Insulation thickness is 50mm



Excellent Fire Protection

EcoBuild glass wool insulation is certified as non-combustible according to the stringent ISO, ASTM & BS tests. But it is even more than this. During fire, EcoBuild Glasswool does not produce any toxic fume which could be a real danger when evacuating premises. Glasswool insulation act as fire barriers which reduce the spread of flame, affording valuable time to save people and property, and reduce environmental damage.

Principles of Fire Protection in Buildings.

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

- 1) Reaction to fire – This indicates if the material supplies fuel to the fire before flash-over
(Euro class – A1, A2, B, C, D, E, F)
- 2) Fire Resistance - This indicates how long time a construction can withstand a fire after flash over
(15, 30, 45, 60.....etc. minutes)

Fire Performance		
Parameter	Standards	EcoBuild
Non - Combustibility	ISO 1182 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 0
Surface Spread of Flame	BS 476 Part 7	Class 1
Propagation Index	BS 476 Part 6	Less than 6
Ignitibility	BS 476 Part 12	Not ignitable
Heat of Combustion	ISO1716	~2.0
Reaction to Fire	Fuel to fire	No
Resistance to Fire	NFPA 286 EN ISO 9705	Stop the fire and provides extra vital minutes to save life and valuables

Enhanced Comfort from Acoustic Insulation



Better Sound Insulation

Due to their unique fibrous structure, Glasswool insulation provide dual benefits of thermal and acoustic insulation. Insulation dramatically reduces the levels of external noise entering homes, offices, and commercial buildings, allowing for quiet, peaceful living and working environments. Conversely, insulation also helps to reduce noise generated from within a building (home theatres, etc.) from escaping outside. Furthermore, insulation is used to reduce noise in applications such as air ducts and under metallic roofs.

Basic Concepts about Noise

Noise is pressure waves transmitted through the air. Sound pressure is measured in Decibels (dB). The range of human hearing is from about 0 dB, the threshold of our hearing to 140dB which is above the threshold of pain.

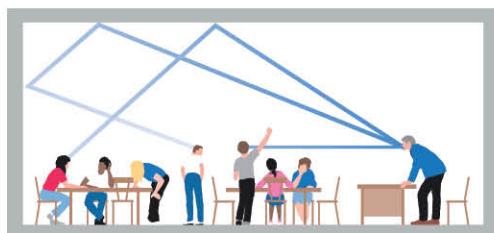


Stc	Clearly Audible		Recommended			Not Audible		Example of rooms
	Normal Speech	Loud Speech	Shouting	TV & radio normal level	TV & radio high level	TV & radio extreme level		
30							Office	
35							Office	
40							School	
44							School	
48							School	
52*							Apartment	
56							Apartment	
60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

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

Sound Absorption

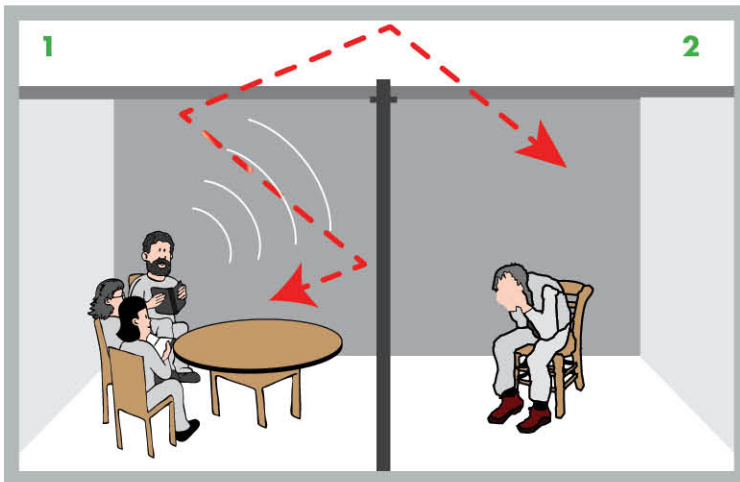
Sound absorption is defined as the incident sound that strikes a material that is not reflected back. The choice of material will be influenced by its acoustic efficiency and material thickness, which have the greatest impact on the material's sound absorbing qualities. A materials sound absorbing properties are expressed by the sound absorption coefficient (alpha), as a function of the frequency. Alpha (α) ranges from 0 to 1.00 which corresponds to 100% absorption.



EcoBuild Indoor Class	Absorption Coefficient of one-third octave frequencies Hz						
	125	250	500	1,000	2,000	4,000	NRC
Classic	0.20	0.51	0.72	0.89	0.88	0.88	0.80
Premium	0.22	0.57	0.97	1.00	0.98	1.00	0.90
Extra	0.16	0.52	0.89	0.92	1.03	0.95	0.85

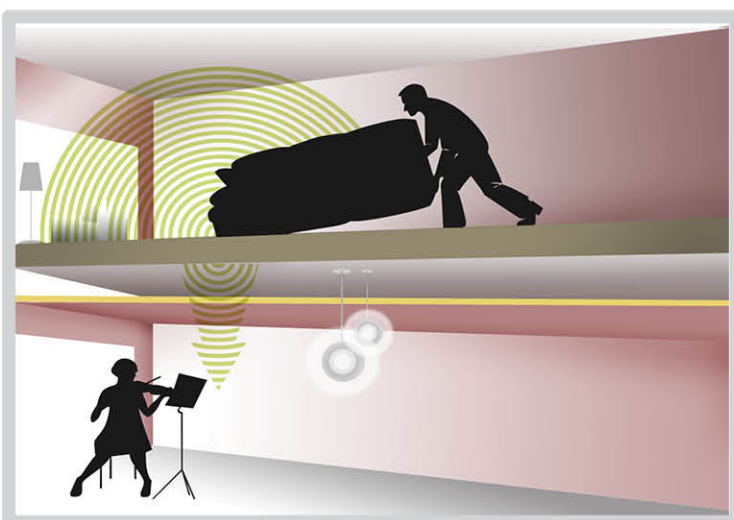
These are typical values subject to normal manufacturing and testing variances.

NRC value – Noise reduction coefficient of a service exposed material in a room simply denote its ability to absorb vs reflect sound. The higher the NRC value, the stronger the sound absorption, The lower the sound reflection in the room



Sound insulation system

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

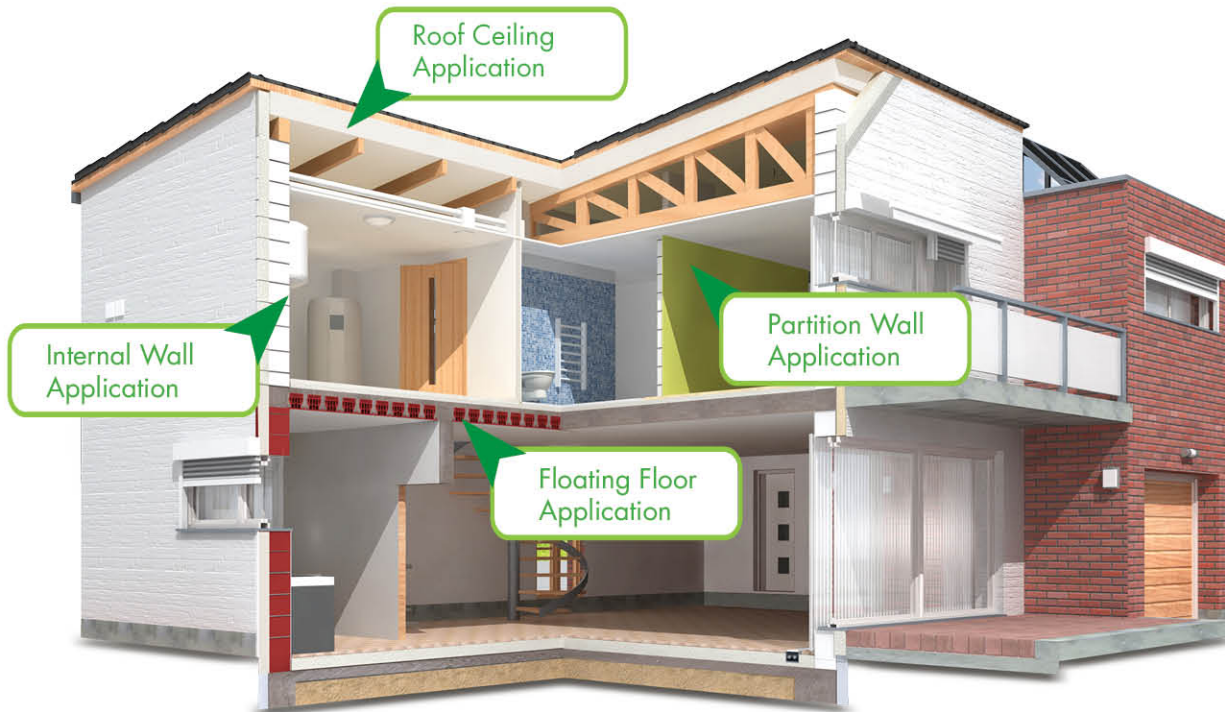


Impact sound insulation

Impact noise that is transmitted to floor /roof assembly (sources of impact sound are foot steps, children playing, scraping furniture, banging doors, vibration from loud music and plumbing noise).

Impact sound acts directly on the concrete structure of the building causing the structure to vibrate and to radiate acoustical energy into the rooms. Impact insulation class (IIC) rating describe the impact noise high rating indicate the impact noise is reduced substantially.

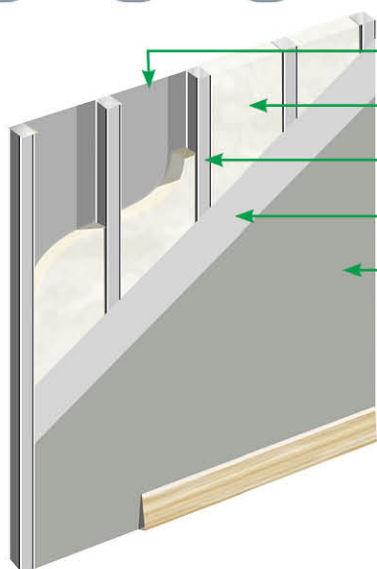
Internal Building Applications



Our commitment to achieve green building and sustainability goes well beyond certifications, standards and testing. We believe that we are uniquely positioned, as an insulation manufacturer and solution provider, to offer products that help protect and preserve the environment. In many applications, KIMMCO's mineral wool products help to fulfil the challenging requirements. We provide extraordinary solutions in a wide assortment of tested and certified products and constructions for thermal insulation as well as for fire and sound protection.

Our knowledge and experience has allowed us to create the industry's widest range of products for Thermal, Acoustic and Fire protection insulation. Our experts will provide sound and practical advice and will recommend the best possible insulation solution for your project.

Product type	Partition wall	Internal wall	Roof insulation, ceiling	Floating floor
Rolls	✓	✓	✓	
Slabs	✓	✓	✓	✓

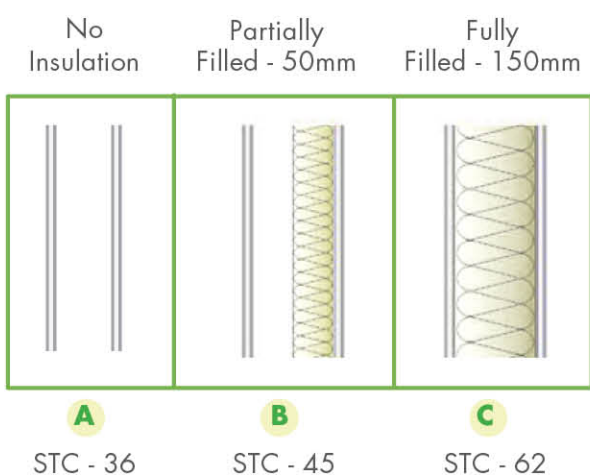


- Gypsum Board
- EcoBuild Indoor Premium Insulation
- Metal Stud
- Gypsum Board
- Decorative Finish

Description

Partition wall insulation helps you to provide acoustic solutions, prevent the transport, and enhance comfort and privacy. Being non-combustible means EcoBuild's Indoor Premium class insulation will also help to prevent the spread of fire, increase safety and provide additional time to leave a building in the event of a fire.

Light Weight Construction VS Concrete Wall Performance					
Light Weight Construction			Concrete Wall		
Total Wall thickness (mm)	Mass/unit (kg/m ²)	STC (dB)	Total Wall thickness (mm)	Mass/unit (kg/m ²)	STC (dB)
90	25	49	90	207	47
100	26	50	100	230	49
140	38	61	220	506	60



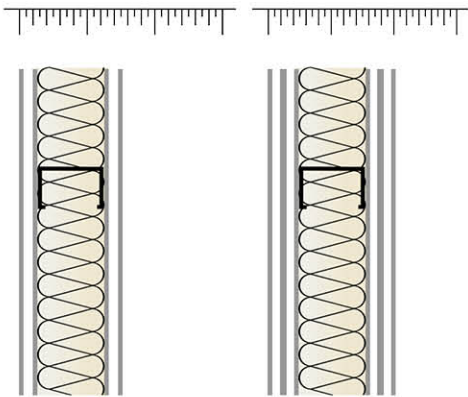
Advantages

- Sound reduction
- Fire resistance
- Non combustibile
- Light in weight
- Easy to handle and install
- Reduce the load on structure
- Saves floor space
- Cost saving
- Saves on labor
- Installation cost
- Logistics

Single Steel Stud Partition

Acoustic performance of Insulation in Partition wall – single leave of 12.5cm Gypsum Board (e.g – Gyproc board or equivalent) which is not filled, semi-filled and fully filled with EcoBuild Indoor Premium Class Insulation.

Partition Wall

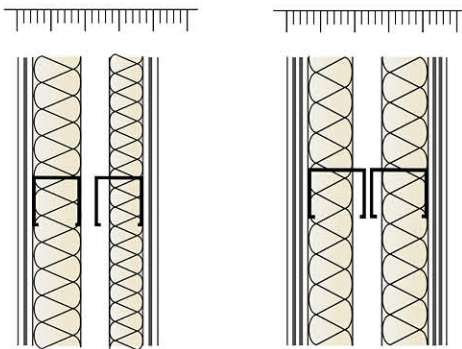


Acoustic Performance

The single and double steel stud partitions shown are constructions which achieves a high level of comfort. The partition wall systems have been tested with EcoBuild Indoor Premium class slabs and rolls. The sound insulation varies, depending on the construction specification between 45dB and 68dB.

Single and double layer of Gypsum board and EcoBuild Indoor Premium class in a single steel stud

#	Constructions	Gypsum Board (mm)	Premium Class Insulation (mm)	Total Thickness (mm)	STC without Insulation (dB)	STC with Insulation (dB)
1	Single steel stud	12.5	50	75	36	45
2	Single steel stud	12.5	75	100	38	49
3	Single steel stud	2 x 12.5	50	100	45	51
4	Single steel stud	2 x 12.5	70	120	47	54

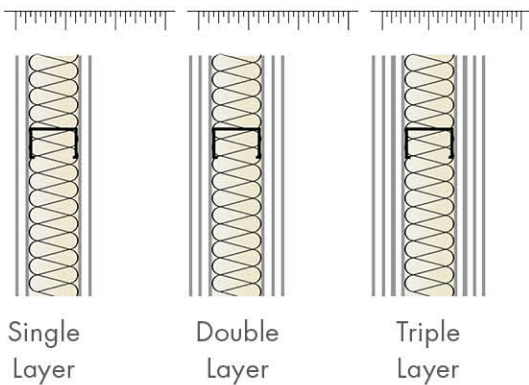


Optimum sound insulation can be achieved when the studwork between the plasterboard linings is completely decoupled.

Double steel stud with double / triple layer of Gypsum and EcoBuild Indoor Premium Class

#	Constructions	Gypsum Board (mm)	Metal Stud (mm)	Cavity (mm)	Total Thickness (mm)	Premium Class Insulation (mm)	STC (dB)
1	Double steel stud	2 x 12.5	2 x 75	160	210	50 + 75	66
2	Double steel stud	3 x 12.5	2 x 100	210	285	80 + 80	68

Fire Rated Partition Wall



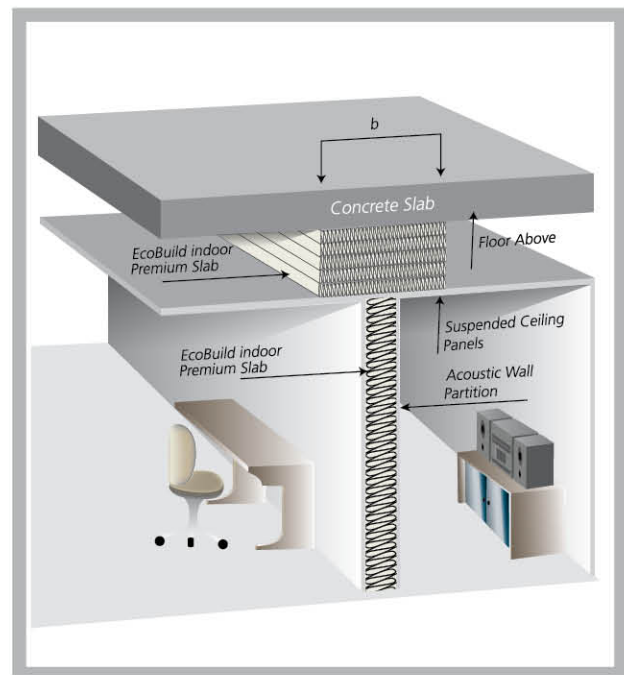
Acoustic and Fire Performance

Board Type	Lining Thickness + Layer	Insulation Thickness	Sound Insulation (dB)	Fire Resistance (minutes) *
Regular	1 x 12.5	50	43	30
Fire Stop	1 x 15	50	44	60
Regular	2 x 12.5	50	51	60
Regular	3 x 12.5	50	59	90
Fire Stop	2 x 12.5	50	51	120
Fire Stop	3 x 15	50	59	180

*Fire Resistant certificate available on request. The above mentioned value is as per Gyproc gypsum boards. For further info please contact us www.kimmcoinsulation.com

Sound Stop System

EcoBuild Indoor Premium slabs are actively reducing sound coming through open areas above suspended ceilings. The products have to be stack above acoustic partition walls and must be installed with enough compression to ensure stack stability. All the small gaps has to be filled properly to get better acoustics and to ensure no loss on air movement. It is important to speak to HVAC Engineer prior of installation. The Sound Stop solution with EcoBuild Indoor Premium slabs can be installed to a height of 1m without specialist design considerations.



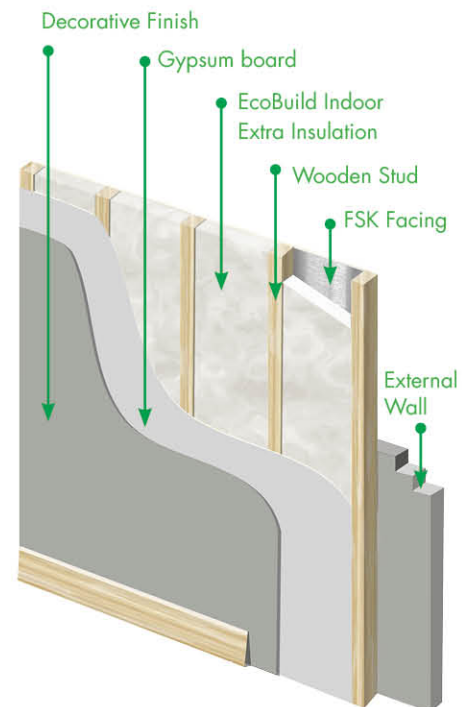
Position	Minimum width	Insertion loss $\Delta RL, w, R$
	$b=[mm]$	$[dB]$
1	300	12
2	400	14
3	500	15
4	600	17
5	800	20
6	1000	22

Inner Wall Insulation



Description

EcoBuild Indoor Extra insulation for walls is specifically designed to deliver optimal performance for internal wall segments. You can lose up to 25% of the heat in your home through the walls in summer and around the same amount of heat can enter in through the walls during winter. Insulation essentially acts as a barrier to slow down this process and makes a substantial difference to the temperature you will feel inside, meaning you will feel more comfortable. EcoBuild provide a cost effective thermal and acoustic barrier for energy efficient and comfort providing constructions.



EcoBuild Indoor class	Wall Construction	R Value ($\text{ft}^2 \cdot \text{h} \cdot ^\circ\text{F} / \text{Btu}$)	U Value ($\text{Btu} / \text{ft}^2 \cdot \text{h} \cdot ^\circ\text{F}$)	STC (dB)
Extra	External Wall + Insulation (50mm) + Gypsum board	10.246	0.097	54

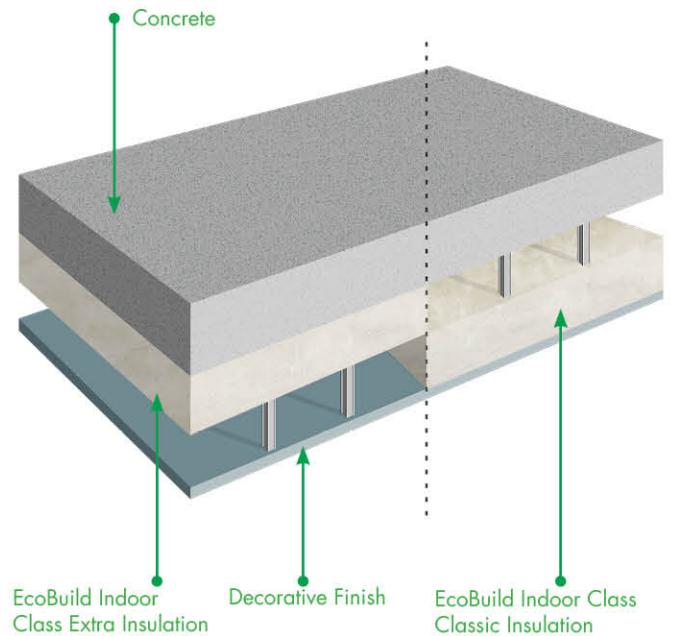
Advantages

- Acoustic Insulation
- Thermal Insulation
- Improves comfort
- Durable
- Easy to handle
- Non-combustible (Fire Safe)
- Improve indoor air quality
- Can be implement during renovation/upgrades





The fundamental advantage of the under deck insulation is the low consumption of energy that is spent on cooling inner atmosphere. It increases the inner comfort level and decrease the effect of environment. It also stops the radiant heat entering inside the houses that increase the temperature extremely. EcoBuild Insulations pioneered effective thermal insulation that can be used as under deck insulation material. In harsh thermal conditions, it prevents almost 97% of radiant heat and make inner atmosphere more livable. The main advantages of under deck insulation are described below.



EcoBuild Indoor Class	Wall Construction	R Value (Ft ² . h . °F /Btu)	U Value (Btu/Ft ² .n. °F)	STC (dB)	Remark
Classic	Concrete + Insulation (50mm) + Gypsum board	9.050	0.110	52	Suspended Ceiling
Extra		10.949	0.091	52	Insulation Under deck

Sound Absorption

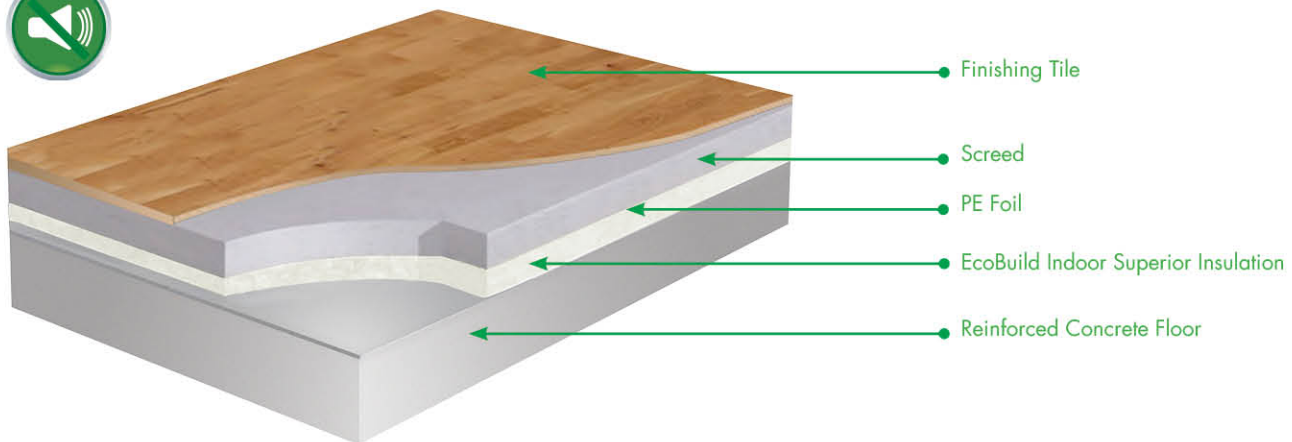
As a layer on the suspended ceiling and under deck

EcoBuild Indoor Class	Absorption Coefficient of one-third octave frequencies Hz						
	125	250	500	1,000	2,000	4,000	NRC
Classic	0.20	0.51	0.72	0.89	0.88	0.88	0.80
Extra	0.16	0.52	0.89	0.92	1.03	0.95	0.85

Advantages

- Provides quiet indoor environment
- Protect heat from entering inside the house
- Increase the cooling efficiency of the house
- Decrease the cooling time
- Decrease energy consumption for cooling devices

Floating Floor Insulation



Description

EcoBuild Indoor Superior class insulation products for separating and intermediate floors, help to prevent heat transfer between the upper and lower floors, soften the effect of impact sound, and provide protection from airborne noise, and therefore ideally used for acoustic performance for floor insulation.

Our insulation offers solutions for all types of floor, including ground floors, separating floors and intermediate floors. Ground floor insulation delivers thermal performance within a building, helping to maintain a comfortable environment

Advantages

- EcoBuild Floating Floor Insulation is a rigid slab which achieves resistance to compression at 10% deflection tested in accordance to ASTM C 165
- EcoBuild Floating Floor Insulation is rot-proof, odorless, non-hygroscopic and does not breed or promote growth of vermin, fungus or bacteria and will not decompose through continual exposure to the elements.
- Less than 1% of water absorption by volume when tested in accordance to ASTM C 1104
- EcoBuild Floating Floor Insulation is available unfaced and kraft facing (FSK) which combines a pleasing appearance with excellent vapour resistance.
- Non combustible when tested in accordance with BS 476 (Part 4), ASTM E 136,

EcoBuild Indoor Class	IIC value for the system (dB)
Superior	57



Abu-Dhabi Airport

Successful Reference

EcoBuild already proved its worth in projects with delivered products by offering top performances coupled with substantial cost savings.

The benefits fits in the following type of projects :

- Commercial buildings
- Residential buildings
- City complexes / malls
- Airports
- Hotels
- Hospitals
- High rise buildings

Are you interested in further testimonials – or becoming a reference yourself? Just contact us – we'll be glad to inform you.



Sometimes less is more

Reducing costs is a good thing. Not to create any in the first place is even better.

Take advantage of EcoBuild's properties such as fast and easy installation together with its energy saving potential throughout the whole lifetime of your project. Benefit from revolutionary advantages in terms of construction already in the design phase. Sufficient EcoBuild Comfort insulation has a fast payback time – it saves anywhere from 10% to 50% on heating and cooling bills. The amount of savings for upgrading insulation depends on many factors, including where you live, what type of cooling/heating system you have, and how much insulation you add.

A study published by McKinsey in 2009 ("Global GHG Abatement Cost Curve 2.0") claims that insulation provides one of the most profitable solutions in avoiding CO₂ emissions, (i.e reducing energy consumption).

"Within the first year, EcoBuild saves 12 times as much energy as is used to manufacture it – then continues to save till the life of the structure".

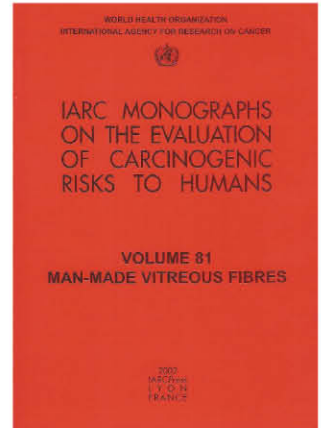
Environmental Friendly



EcoBuild is manufactured out of Glasswool and, hence, bio-soluble which means unriskey for health. The International Agency for Research on Cancer (IARC), a part of the World Health Organization, has declared Glasswool as "not classifiable as to carcinogenicity in humans".

Mineral wool products, including Glasswool 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.

This sound science 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.



For further information, please contact us (www.kimmcoinsulation.com)

EcoBuild products are not hazardous to health.

Green Building and LEED Rating

The average proportion of recycled content in the production of ISOVER glass wool is 54%.

One roll of glass wool contains the equivalent of at least 10 recycled glass bottles.

Glass wool can be compressed up to 10 times its original thickness at the end of the production cycle, considerably reducing the costs of transport and storage.

We use 100% recycle wash water in our process.

We contribute 0% in Global warming and ozone depletion potential.



* Turner, C. Frankel, M. (2008). Energy performance of LEED for New Construction buildings : Final report.

** Kats, G. (2003). The costs and Financial Benefits of Green Building: A report to California's Sustainable Building task Force.

*** GSA Public Buildings Service (2008). Assessing green building performance: A post occupancy evaluation of 12 GSA buildings.



Commitment to Quality

Our Commitment to Quality

All of our Glasswool products are manufactured under license of Saint-Gobain ISOVER, a leading insulation provider headquartered in France.

Furthermore, we have a strong commitment to quality, as recognized by our certification from international bodies such as ISO

Our Product Listing & Certification

- CE
- UL
- BV
- ABS
- DCL (Dubai Central Laboratory)

Environmental impact

EcoBuild products are environmental friendly
(See KIMMCO MSDS)

Our Commitment to the Environment

KIMMCO 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 Glasswool products help developers achieve green building rating certifications such as LEED, Estidama and QSAS.

Furthermore, we are members of the following industry associations:

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





Kuwait Insulating Material Manufacturing Co.
P.O. Box 10042 Shuaiba, 65451 Kuwait
Tel: +965 2326 2020
kimmco@alghanim.com | www.kimmcoinsulation.com

