

Rockinsul™

Twigainsul®



# INSULATION FOR PRE-ENGINEERED BUILDING

BEST SOLUTION FOR SUPERIOR THERMAL, ACOUSTIC  
AND FIRE SAFETY



  
SAINT-GOBAIN



## SAINT-GOBAIN AT A GLANCE



## INSULATION

Started in 1937

World leader in mineral wool (Isover)

## 360° IN 360 YEARS

**360° is our global reach:**

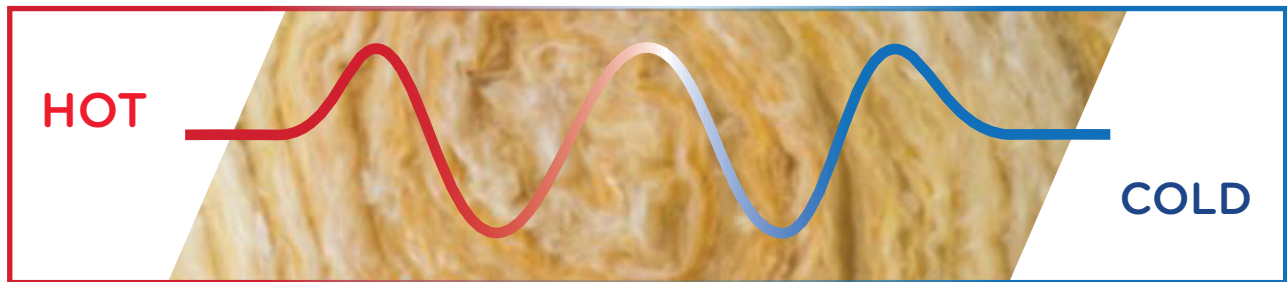
Our 160,000 employees are committed everyday to transforming construction.

**360° is our approach:**

We create innovative, high-performance, and sustainable solutions for people's well-being and the planet's preservation.

**360° is also the overall commitment of Saint-Gobain to MAKING THE WORLD A BETTER HOME.**

## HOW TO CHOOSE INSULATION FOR PEB



### THERMAL RESISTANCE

#### THERMAL RESISTANCE :

The most important parameter of an insulation by virtue of which it resists the heat flow through it.

THERMAL RESISTANCE, also known as R-value is the function of thickness (T) and thermal conductivity (K-value) of the material

$R \propto T$ Directly Proportional	$R \uparrow = \frac{\text{Thickness} \uparrow}{\text{Conductivity}}$
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In SI unit

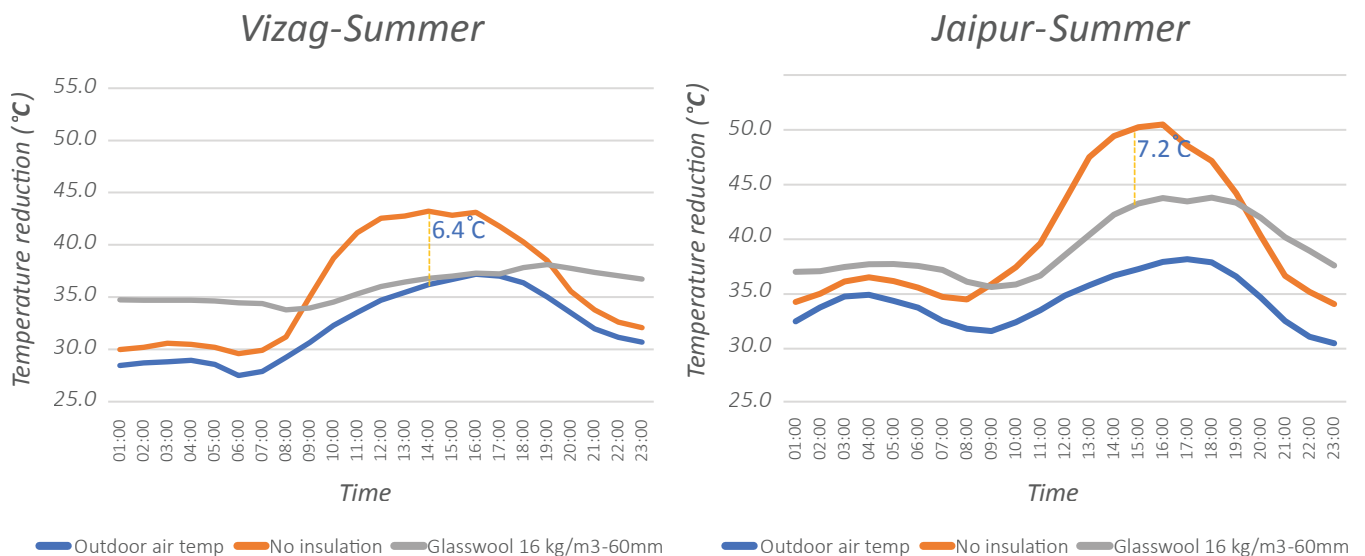
R: m<sup>2</sup>.K/W ; T: Meter ; K: W/m.K

Higher the thickness better is the Thermal Resistance

## THERMAL RESISTANCE 'R'

Saint-Gobain Insulation Thickness (mm)	Thermal Resistance (m <sup>2</sup> .K/W)
25	0.64 to 0.83
50	1.28 to 1.67
75	1.92 to 2.50
100	2.56 to 3.33
125	3.2 to 4.17
150	3.8 to 5.0

## THERMAL COMFORT WITH INSULATION DURING SUMMER



### Thermal analysis done by Saint-Gobain Research India

- Metal roof/wall is highly heat conductive in nature generates high temperature during summer.
- Saint-Gobain Insulation solution helps to reduce the heat load by putting high thermal resistance to the heat flow path, hence helps to achieve superior thermal comfort within the PEB.

## THE BENEFITS OF OUR INSULATION SOLUTION



### Manufacturing

#### Textile, Automotive, Electronics, Solar etc.

- Improved thermal comfort- better for worker productivity
- Excellent fire safety for human life and machinery
- Reduce risk of moisture condensation - better hygiene and electrical safety
- Rain noise isolation - comfortable working environment



### Warehousing

- Superior heat and sound insulation for roof and walls
- Enhances fire safety, protecting lives and goods
- Reduces moisture condensation to prevent damage to stored products and packaging



### Poultry

- Better temperature control with up to 15% improvement in output
- Non-combustible insulation for enhanced fire safety
- Reduces rain noise for improved living and hatching conditions

## ACOUSTIC COMFORT

### External Sources of Noise



Rain & Hailstorm



Aircraft



Loud speakers

### How Insulation Helps:

Glass wool and stone wool roof insulation materials absorb noise effectively to reduce transmission through roof/wall. It is defined by Noise Reduction Coeff. (NRC) and Sound Transmission Class (STC).

Insulation Thickness	Noise Reduction Co-efficient NRC
25 mm	0.70 to 0.90
50 mm	Up to 0.95

Roofing	Top Roof sheet	Deck sheet	Insulation thickness	Sound Transmission Class (dB) STC
1	Steel 0.6 mm	Steel 0.6 mm	100 mm	45
2	Aluminium 0.9 mm	Steel 0.6 mm	100 mm	44
3	Steel 0.6 mm	Steel 0.6 mm	150 mm	47-48
4	Aluminium 0.9 mm	Steel 0.6 mm	150 mm	45

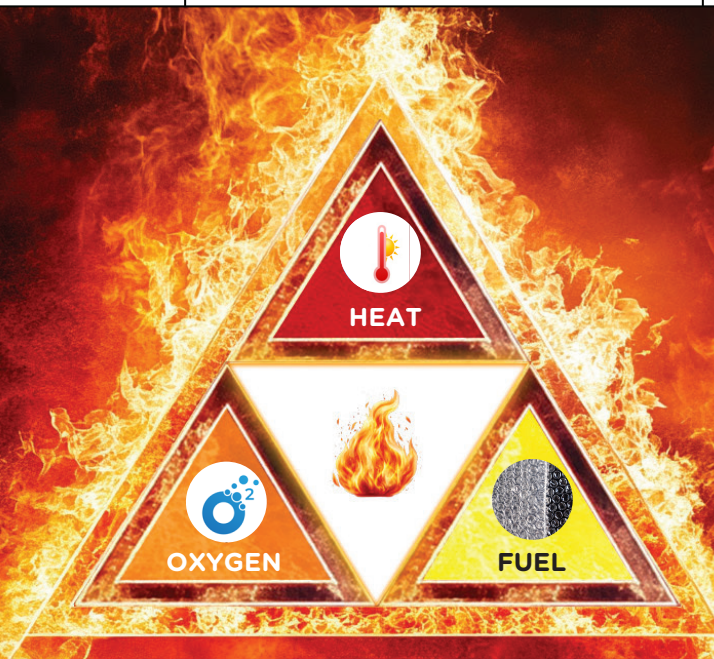
## FIRE SAFETY

### What National Building Code says about parameters of insulation:

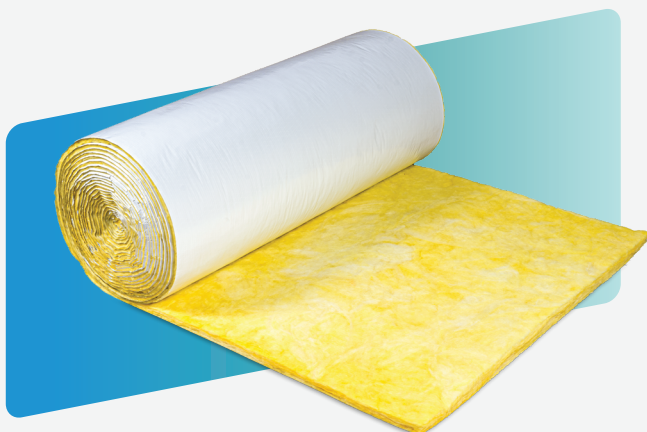
- Non-combustible
- No toxic fumes
- No hazardous smoke

### How Saint-Gobain insulation meets the criteria

Parameter	Values	Standards
Non-combustibility	Non-combustible /Reaction to Fire A1 / Incombustible	EN 13501/ IS 8183 / BS 476 Part 4
Surface spread of flame	Class 1	BS 476 part 7
Fire propagation	Class 0, index I<12, sub-index i1<6	BS 476 part 6 and 7



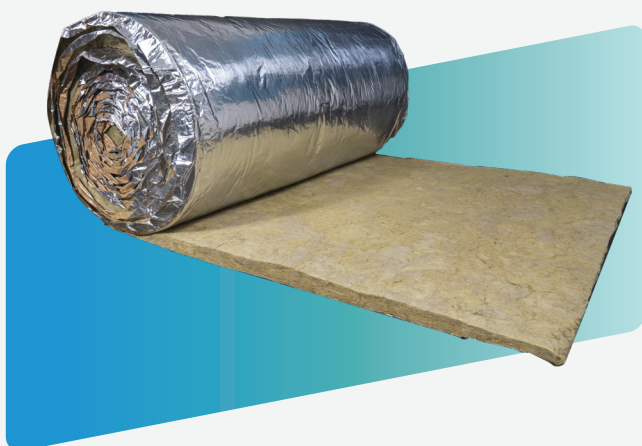
## OUR INSULATION SOLUTION FOR METAL BUILDINGS



### Twigainsul®

Glass Wool rolls/ boards

<b>Densities</b>	: 10 to 48 kg/m <sup>3</sup>
<b>Thickness</b>	: 25 to 130 mm
<b>Width</b>	: 1.1 to 1.2 m
<b>Length</b>	: 7.5 to 30 m
<b>Facing</b>	: FSK, WMP 50, Alu Glass Cloth, WMSG 10, WMSG 50, MRSG, Black Glass Cloth



### Rockinsul™

Stone Wool rolls/slabs

<b>Densities</b>	: 40 to 80 kg/m <sup>3</sup>
<b>Thickness</b>	: 50 to 100 mm
<b>Width</b>	: 1.1 to 1.2 m
<b>Length</b>	: 5 to 10 m
<b>Facing</b>	: FSK, Alu Glass Cloth

THERMAL PARAMETERS	GLASS WOOL	STONE WOOL
ECBC Compliant Solutions		
<b>Roof</b> U-value: 0.20 to 0.47 W/m <sup>2</sup> .K	Density : 16 to 24 kg/m <sup>3</sup> Thickness : 75 to 150 mm	Density : 40 to 48 kg/m <sup>3</sup> Thickness : 75 to 150 mm
<b>Wall</b> U-value: 0.22 to 1.00 W/m <sup>2</sup> .K	Density : 16 to 48 kg/m <sup>3</sup> Thickness : 25 to 150 mm	Density : 40 to 96 kg/m <sup>3</sup> Thickness : 50 to 150 mm
High Performance Solutions		
R-value ≥ 1.50 W/m <sup>2</sup> .K	Density : 16 to 24 kg/m <sup>3</sup> Thickness : 50 to 150 mm	Density : 48 to 96 kg/m <sup>3</sup> Thickness : 50 to 150 mm
Popular Solutions		
R-value: 0.64 to 0.83 W/m <sup>2</sup> .K	Density : 16 to 24 kg/m <sup>3</sup> Thickness : 25 mm	Density : 40 to 48 kg/m <sup>3</sup> Thickness : 50 mm

## WHY TO CHOOSE SAINT-GOBAIN INSULATION

Important Parameters	Saint-Gobain Insulation		XLPE	Bubble Wrap
	Glass Wool	Stone Wool		
High Thermal Resistance	✓	✓	✗	✗
Acoustic Benefits	✓	✓	✗	✗
Fire Safety	✓	✓	✗	✗
Green Product & Health Safe	✓	✓	✗	✗

## FACING OF INSULATION

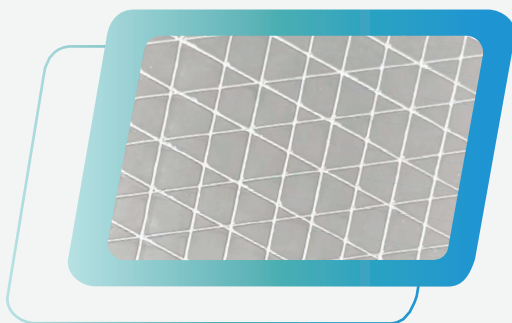
### Silver Colour Facing



### Foil-Scrim-Kraft, FSK

#### Description

Multi-purpose aluminium facing  
(Available with both Glass Wool  
and Stone Wool)

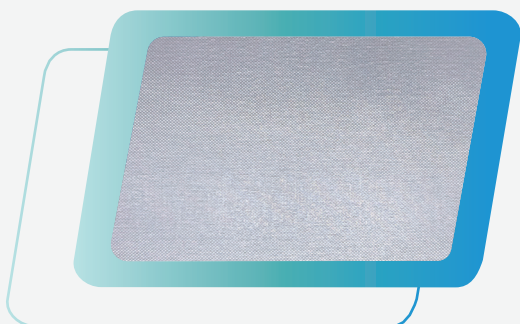


### MRSG

#### Description

Silver coloured foil with reinforcement  
(Only available with Glass Wool)

### Glass Cloth

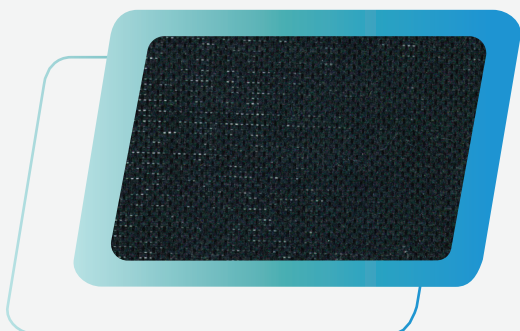


### Alu Glass Cloth

#### Description

Aluminium and glass cloth based  
high strength facing

(Available with both Glass Wool  
and Stone Wool)

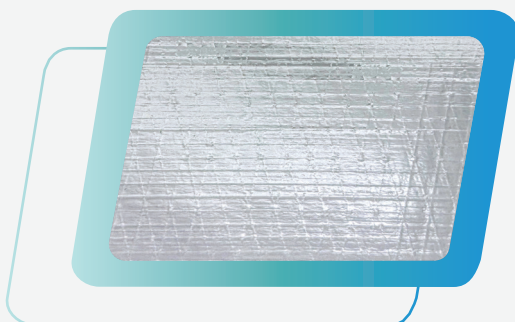


### Black Glass Cloth

#### Description

Black coloured textile made of glass yarns  
(Only available with Glass Wool)

## Polypropylene

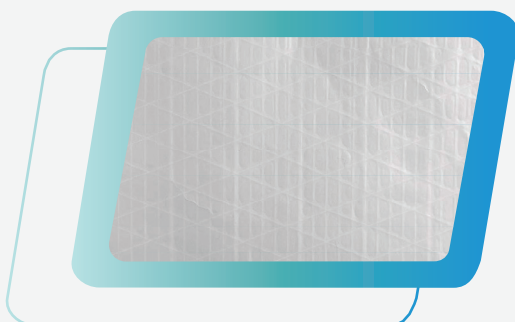


### WMSG 10

#### Description

White kraft backed polypropylene facing

(Only available with Glass Wool)

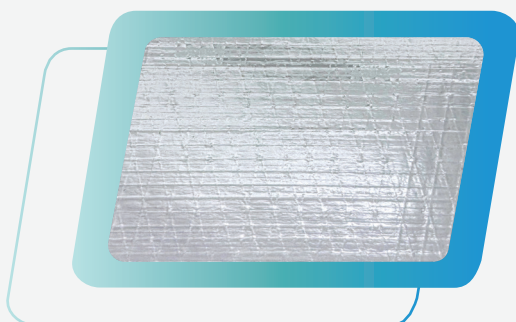


### WMSG 50

#### Description

High strength white polypropylene with reinforcement kraft and aluminium foil

(Only available with Glass Wool)



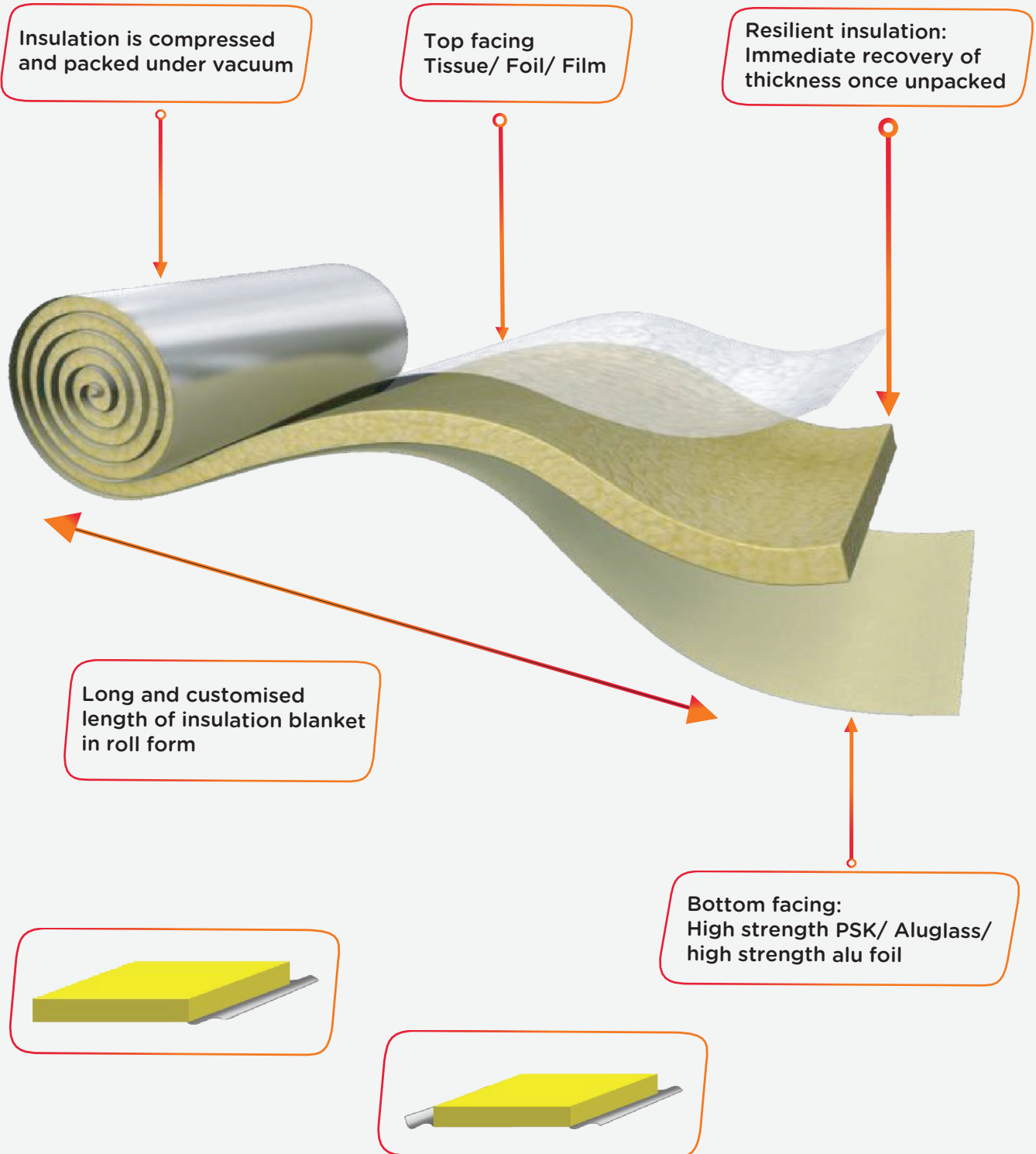
### WMP 50

#### Description

High strength white polypropylene with reinforcement, kraft and metalized polyester

(Only available with Glass Wool)

## PEB INSULATION PRODUCT FEATURES



Facing tab on one side or both side

## PROJECT REFERENCES:



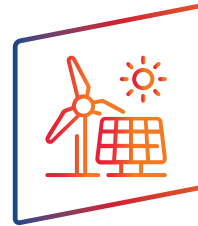
### AUTOMOTIVE AND ANCILLARIES

- Maruti Suzuki
- Tata Motors
- MRF Tyres



### WAREHOUSING AND LOGISTICS

- Amazon
- Indospace
- Welspun One



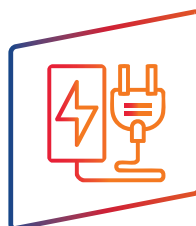
### RENEWABLE ENERGY

- Reliance Solar
- First Solar
- Renew Power



### FMCG

- Nestlé
- Britannia
- Coca-Cola
- PepsiCo



### ELECTRICAL AND ELECTRONICS

- LG Electronics
- TEL Components
- Godrej & Boyce

## OTHER SEGMENTS



- Textile



- Pharma



- Petrochemicals



European Certification Board for Mineral Wool Products



Glass Wool and Stone Wool are  
**Bio-Soluble, Non-Hazardous and Health-safe**

## MAJOR CERTIFICATION



Fire safety certification  
for Metal building  
and Duct wrap



BIS License  
in conformance  
with IS 8183 standard



Health safe  
fibers: Certification on  
Bio-solubility



Indian Green Building  
Council: Green  
Product certification



The Energy Resource  
Institute: Green  
Product certification

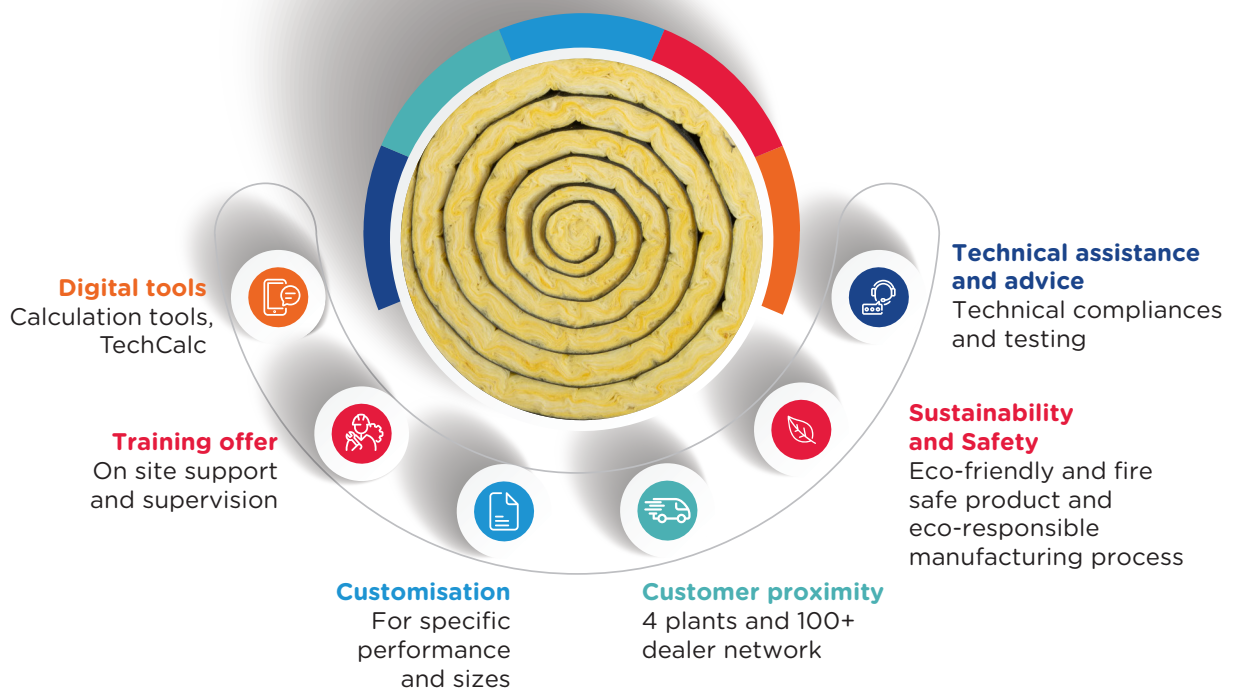


Singapore Green  
Building Council: Green  
Product certification



Environmental  
Product Declaration

## WHY SAINT-GOBAIN INSULATION



# OUR PRESENCE



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