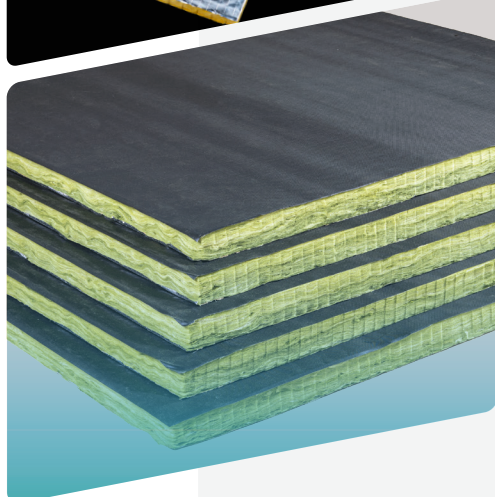
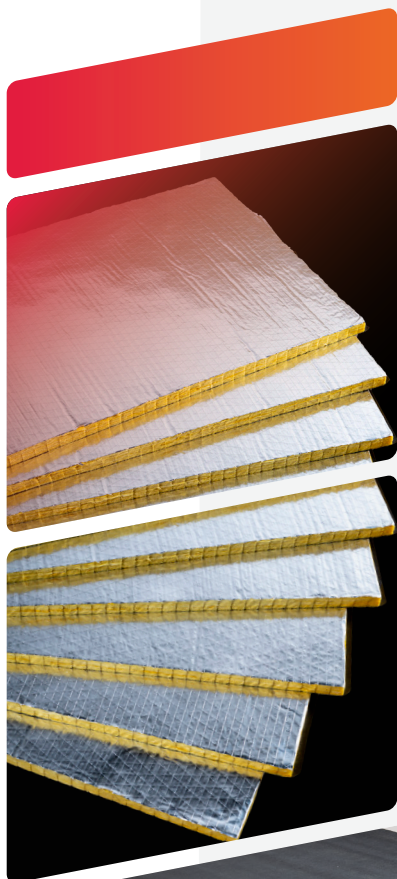


HVAC INSULATION

Provides a comfortable and
safe indoor environment
in a sustainable way!





SAINT-GOBAIN AT A GLANCE



INSULATION

Started in 1937

World leader in mineral wool (Isover)

360° IN 360 YEARS

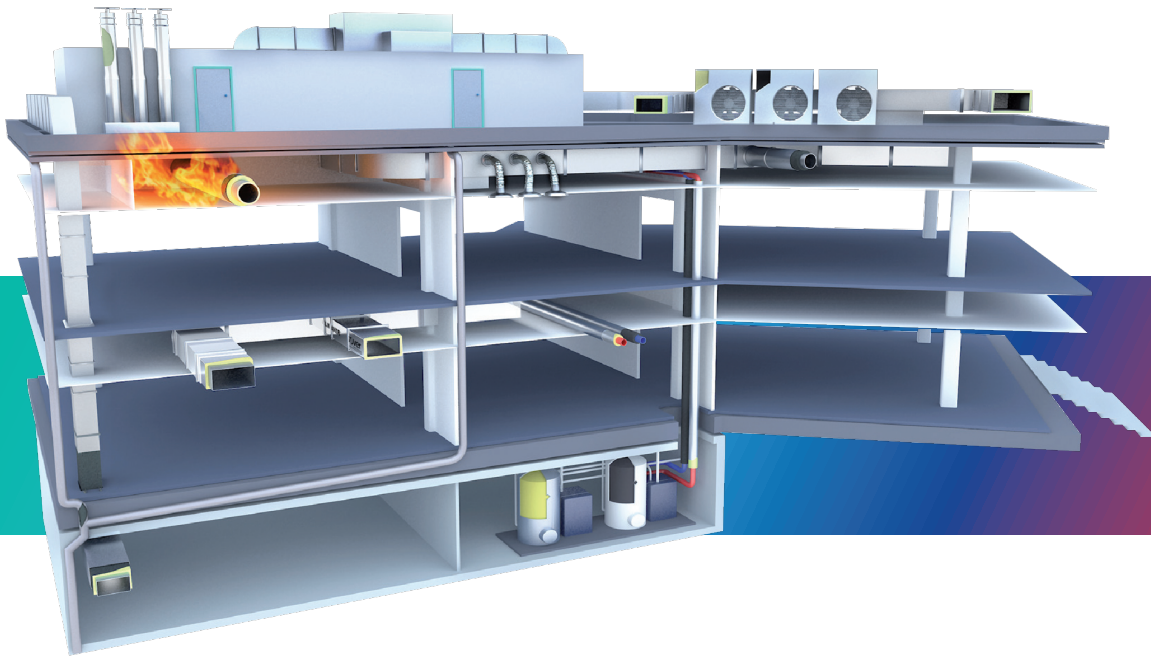
360° is our global reach:

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.



ENSURE YOUR BUILDING'S THERMAL AND ACOUSTIC COMFORT, GENERATE ENERGY SAVINGS, PREVENT CONDENSATION AND PROVIDE FIRE SAFETY.

HVAC systems are essential for maintaining comfort and **optimal indoor environmental quality** in buildings, ranging from educational and healthcare facilities to commercial and residential properties. They function by drawing in fresh outdoor air, heating or cooling it, distributing it throughout the building, and then exhausting or reusing it.

Plumbing systems convey fluids for heating, cooling, waste removal, and domestic water supply. HVAC systems include components like thermostats, heat exchangers, furnaces, compressors, fan motors, and evaporator coils, while plumbing systems use boilers, valves, fixtures, and tanks. Effective HVAC performance relies on proper insulation to maintain temperature and reduce heat loss and emissions.

When selecting an HVAC system, consider the building's climate, usage, and structure, along with personal preferences. Adequate insulation is crucial for all systems to ensure efficiency and environmental sustainability. By choosing the right HVAC and plumbing systems with proper insulation, you can significantly improve your **building's comfort, efficiency, and environmental impact**.



REASONS TO INSULATE YOUR HVAC SYSTEM

- 1 REDUCE CARBON FOOTPRINT OF YOUR BUILDINGS
- 2 ENERGY SAVINGS
- 3 OFFER GREAT THERMAL COMFORT
- 4 CREATE A COMFORTABLE ACOUSTIC ENVIRONMENT
- 5 FIRE SAFETY OF THE SYSTEM
- 6 PREVENT CONDENSATION DAMAGE



1. REDUCE CARBON FOOTPRINT OF YOUR BUILDINGS

Buildings account for 33% of global energy consumption, out of which HVAC systems account for about 80% of the energy used in the buildings.

Our sustainable insulation solutions help reduce energy consumption and energy related consumption over the life of the projects, while ensuring minimal environmental impact.



2. SAVINGS ON ENERGY BILLS

Reducing heat loss with proper insulation is a powerful way to reduce energy costs. Thermal resistance (R-value) is a key factor in the efficiency of the insulation products. Higher the R-value, better the thermal resistance of the system. An efficient thermal insulation ensures that the medium (air or water) stays at the right temperature at the right place.



3. OFFER GREAT THERMAL COMFORT

A balanced thermal environment is essential to feeling comfortable in a space. HVAC systems ensure the same and insulation makes it more efficient.

Our insulation solutions with a lower thermal conductivity (K-value) guarantee a reduction in heat loss to a minimum. It also offers optimal comfort to building occupants.



4. CREATE A COMFORTABLE ACOUSTIC ENVIRONMENT

A well-balanced acoustic environment blocks unwanted and harmful noise and enhances the sound we want, and in fact, need to listen.

Noise emitted by the HVAC systems can be one of the main sources of noise inside buildings. With the right insulation, noise generated by HVAC can be greatly reduced, improving the indoor comfort.



5. FIRE SAFETY OF THE SYSTEM

Fire breakouts and spreading are of serious concern for building occupants everywhere. Report by NCRB suggests that fire causes around 12,000 to 15,000 victims each year in India.

The choice of materials can significantly affect the spread of fire. They don't contribute initially but their aid to flashover, i.e., spontaneous ignition, matters. Our insulation solutions are non-combustible and fire tested, ensuring highest fire safety standards.



6. PREVENT CONDENSATION DAMAGE

The surfaces of HVAC systems are generally at a lower temperature than the surrounding air. When the air is cooled to the point of being saturated with water vapour, it will condense to form liquid water.



OUR HVAC APPLICATIONS AND INSULATION SOLUTIONS



1

DUCTWORK

2

HVAC EQUIPMENT

3

PIPE WORK

DUCTWORK

Ductwork refers to a system enabling transportation of conditioned air from HVAC equipment throughout a building. It is important to maintain the indoor conditioned air quality (IAQ) and overall comfort for the occupants.

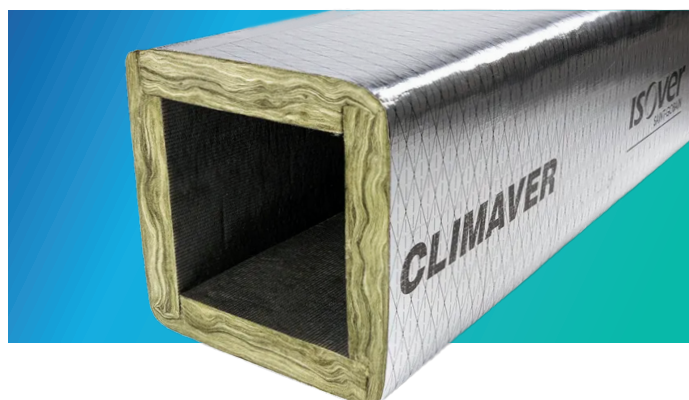
It becomes increasingly important to insulate the ducts for optimal efficiency, increased thermal comfort, better acoustics and enhancing the fire safety of the system.

SAINT-GOBAIN CLIMAVR V/S CONVENTIONAL DUCT SYSTEM

	Saint-Gobain Climaver	GI + Foam Insulation 13 mm	GI + Foam Insulation 19 mm
Insulation Density (kg/m ³)	75-80 kg/m ³	40-60 kg/m ³	40-60 kg/m ³
Insulation Thickness (mm)	25 mm	13 mm	19 mm
Weight (kg/m ²)	2.2 kg/m ²	4.5 (GI) + 0.728 = 5.228 kg/m ²	4.5 (GI) + 1.064 = 5.564 kg/m ²
K-value (25°C)	0.033 W/m.K	0.035-0.40 W/m.K	0.035-0.040 W/m.K
R-value (25°C)	0.757 m ² .K/W	0.32-0.037 m ² .K/W	0.475-0.542 m ² .K/W
ECBC 2017	Compliant	Not Compliant	Not Compliant
NBC 2016	Compliant	Not Compliant	Not Compliant
Air Tightness	< 1% leakage	At joints - 5-7% leakage	At joints - 5-7% leakage
Sustainability	Mfg. with up to 55% recycled content	- NIL -	- NIL -
Straight Duct Noise Reduction	Up to 11 dB/m (200 mm x 200 mm)	Sound and speech transmission	Sound and speech transmission
Fire & Health Safety	Non-combustible core BS 476 Part 4, 6 & 7 compliant EUCB Certified	Combustible, emits smoke/droplets, not compliant to NBC 2016, IARC Group 1	Combustible, emits smoke/droplets, not compliant to NBC 2016, IARC Group 1

CLIMAVER DUCT BOARD

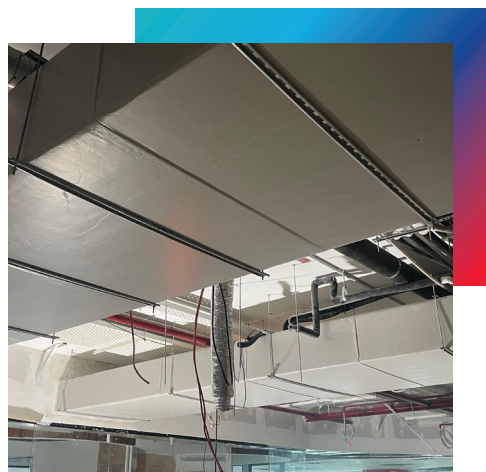
Climaver Duct Board is a pre-insulated non-metal duct, with superior thermal and acoustic performance, conforming to highest standards of rigidity and fire performance as per EN13403.



Range

Core & Density	: Glass Wool & 75-80 kg/m ³ (150 kg/m ³ at profiled edges)
Dimension	: 2.9 m x 1.19 m x 25 mm
R-value	: 0.757 m ² .K/W (K-value – 0.033 W/m.K at 25°C)
Fire Safety	: Euro Class s1,d0
Air Tightness & Rigidity (EN 13403)	: Class C & Class R5

	Climaver Plus R	Climaver NETO
Application	Thermal Ducting	Thermal Acoustic Ducting
Outer Facing	Aluminium FSK + FGT	Aluminium FSK + FGT
Inner Facing	Aluminium FSK + FGT	Black Glass Cloth + FGT
NRC Value	0.35	0.70





Quicker
installation



50% lighter than
traditional GI system



Sustainable product
manufacturing

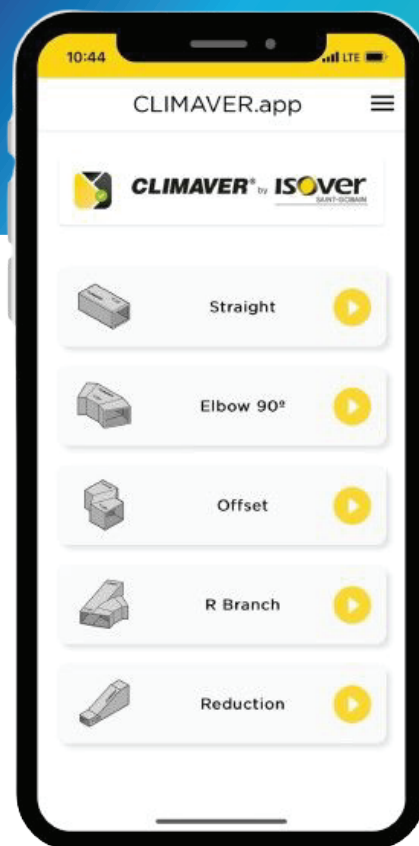


Energy savings
on usage



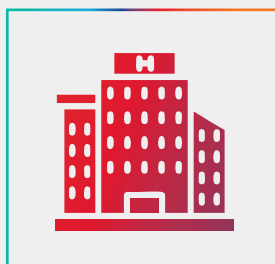
Excellent sound
acoustics

CLIMAVER APP



Application for complete on-site
support for contractors.

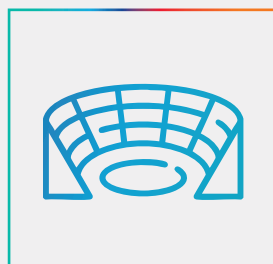
APPLICATION SCOPE



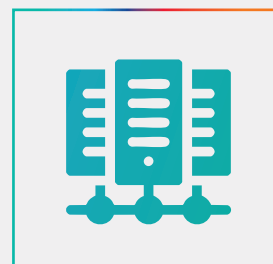
Hospitality



Office
Buildings



Theatres &
Museums



Data
Centers

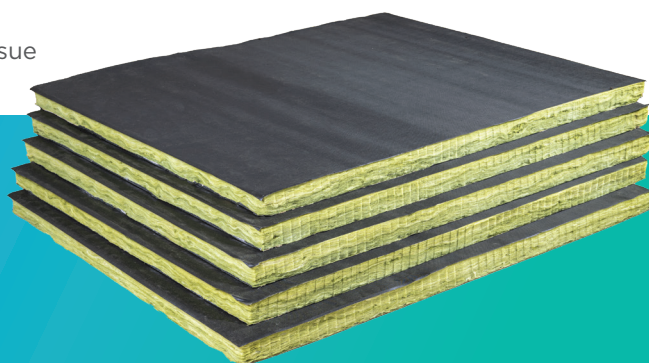
TWIGAINSUL DUCT WRAP SOLUTIONS

Our GW rolls/boards provides thermal and acoustic insulation as per the requirement of the customer. They come either as plain rolls or with facings on one (or both) the side.

Range

Core & Density	: Glass Wool 24 kg/m ³ , 32 kg/m ³ , 48 kg/m ³
Dimension	: 7.5 m to 30 m
Width	: 1.1 m to 1.2 m
Fire Safety	: Non-combustible Core, Euro Class s1,d0
Facing	: Aluminium FSK WMP VR R Plus
Tissue	: Fiberglass Tissue Black Glass Tissue

R-value (m ² .K/W) 25°C	25 mm	50 mm
24 kg/m ³	0.74	1.47
32 kg/m ³	0.76	1.52
48 kg/m ³	0.80	1.60



Range

Core & Density	: Glass Wool & 32 kg/m ³ , 48 kg/m ³
Thickness	: 15 mm, 25 mm, 50 mm
Length	: 1.2 m
Width	: 0.6 m
Fire Safety	: Non-combustible Core, Euro Class s1,d0
Facing	: Aluminium FSK WMP VR R Plus WGC BGC
Facing	: Fiberglass Tissue Black Glass Tissue

R-value (m ² .K/W) 25°C	25 mm	50 mm
24 kg/m ³	0.74	1.47
32 kg/m ³	0.76	1.52
48 kg/m ³	0.80	1.60



FLEXIBLE DUCTS

Flexible ducts are mainly used to attach supply air outlets (diffusers and grills) to rigid ducts. They are flexible in the most intricate places and are class O rated.

Range

Core & Density	: Glass Wool & 16 to 32 kg/m ³
Diameter	: 4 inches to 20 inches
Length	: 10 ft, 25 ft
Fire Safety	: Non-combustible Core
Inner Core	: Double laminated film on coated wire helix
Outer Facing	: Aluminium/ MET Foil
Application:	: Connects grills and diffusers with the ducting system



Available in both Insulated and Uninsulated format based on the requirement.

FIRE RATED DUCT

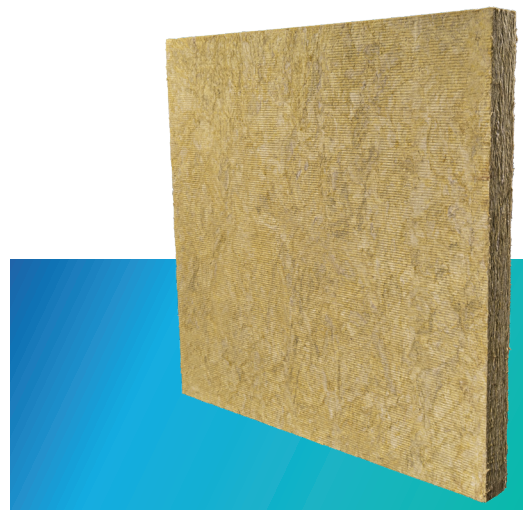
Our stone wool insulation is used for fire-rated ducts to provide excellent fire resistance and thermal insulation, ensuring safety and efficiency in HVAC system.

ROCKINSUL RB SLAB

Long and flexible blanket: plain or with factory applied facings.

Range

Core & Density	: Stone Wool & 40 to 80 kg/m ³
Thickness	: 50 mm to 100 mm
Length	: 5 mm to 10 mm
Width	: 1.1 m to 1.2 m
Facing	: Aluminium : FSK, Aluglass
Building	: Metal building (roof, wall) RCC underdeck Drywall Masonry wall
HVAC	: Fire duct



HVAC EQUIPMENT

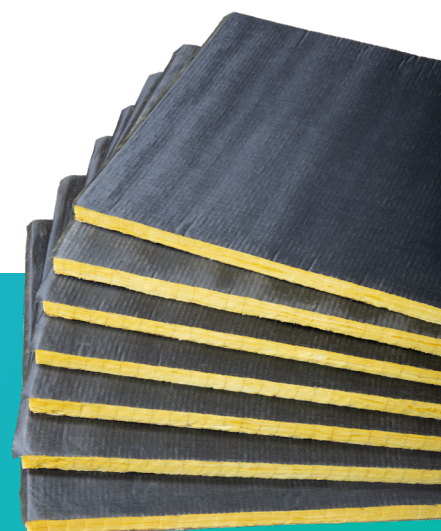
The main equipment of HVAC systems include AHU or the Air Handling Unit, cooling towers, chillers, compressors, and fan coils. These systems ensure the air is procured and treated to the suitability of the conditioned space.

TWIGAINSUL ACOUSTIC BOARD

Range

Core & Density	: Glass Wool & 70-80 kg/m ³
Dimension	: 2.5 m x 1.19 m x 25 mm 1.2 m x 0.6 m x 25 mm
R-value	: 0.757 m ² .K/W (K-value – 0.033 W/m.K at 25°C)
Fire Safety	: Euro Class s1,d0

	Acoustic Board
Outer Facing	Aluminum FSK + FGT
Inner Facing	Black Glass Cloth + FGT
NRC Value	0.65 075 (with 35 mm Gap)



Excellent Sound
Absorption



Light &
Sustainable
Product



Health
Safe



Fire
Safe

PIPE WORK

Pipework is an essential part of any HVAC system where the fluids (air or water) must be transferred. An HVAC system contains cooling towers and AHUs which are connected through pipework. In systems where the temperature is lower than ambient, there is a risk of corrosion under insulation due to condensation. To avoid such risks, it is crucial to use a suitable insulating material.

It also ensures that the cold/ hot water is getting supplied without much energy gains/losses.

TWIGAINSUL PIPE SECTIONS

Range

Core & Density	: Glass Wool & 80 kg/m ³
Diameter	: 25 mm to 450 mm (Nominal Bore)
Thickness	: 25 mm to 75 mm
Length	: 1.2 m
Fire Safety	: Non-Combustible Core
Outer Facing	: Aluminium FSK
Application	: Hot Water Pipes Cold Water Pipes

Pipe Dia (NB)	Thickness (mm)
20-100	25
125-300	50
300 and above	75



CLIMAVER PROJECT SHOWCASE

Saint-Gobain's HVAC insulation has been successfully used by many prestigious projects across India. Below are references projects we have executed over the years:

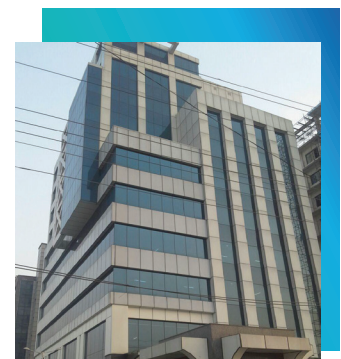
INDEC OFFICE, CHENNAI

Project name	:	Indec Office
Location	:	Chennai
Product used	:	Climaver Plus R, Climaver NETO
Application	:	Ducting



KOTAK MAHINDRA BANK OFFICE, NOIDA

Project name	:	Kotak Mahindra Bank Office
Location	:	Noida
Product used	:	Climaver Plus R, Climaver Neto
Application	:	HVAC Ducting



MAX SPECIALTY OWNER'S RESIDENCE, NEW DELHI

Project name	:	Max Speciality Owner's Residence
Location	:	New Delhi
Product used	:	Climaver Plus R
Application	:	HVAC Ducting



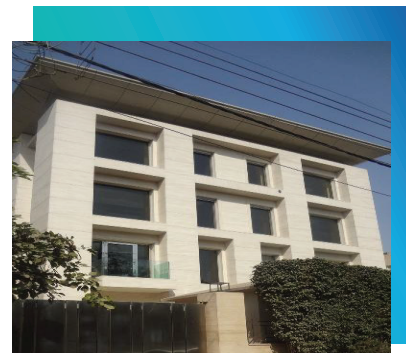
INFOSYS, HYDERABAD

Project name	:	Infosys
Location	:	Hyderabad
Product used	:	Climaver Plus R, Climaver Neto
Application	:	HVAC Ducting



VIDUR BHARDWAJ RESIDENCE, NEW DELHI

Project name	:	Vidur Bhardwaj Residence
Location	:	New Delhi
Product used	:	Climaver Plus R
Application	:	HVAC Ducting



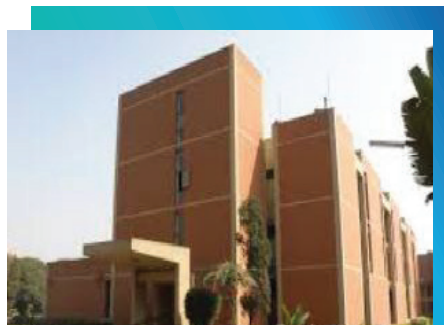
BANK OF AMERICA, GIFT CITY

Project name	:	Bank of America
Location	:	Gujarat
Product used	:	Climaver NETO
Application	:	Ducting



PRESIDENTIAL ESTATE AUDITORIUM

Project name : Presidential Estate
Auditorium
Location : Hyderabad
Product used : Climaver NETO
Application : Ducting



DRDO, LEH LADAKH

Project name : DRDO Station
Location : Leh Ladakh
Product used : Climaver Plus R
Application : HVAC Ducting





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

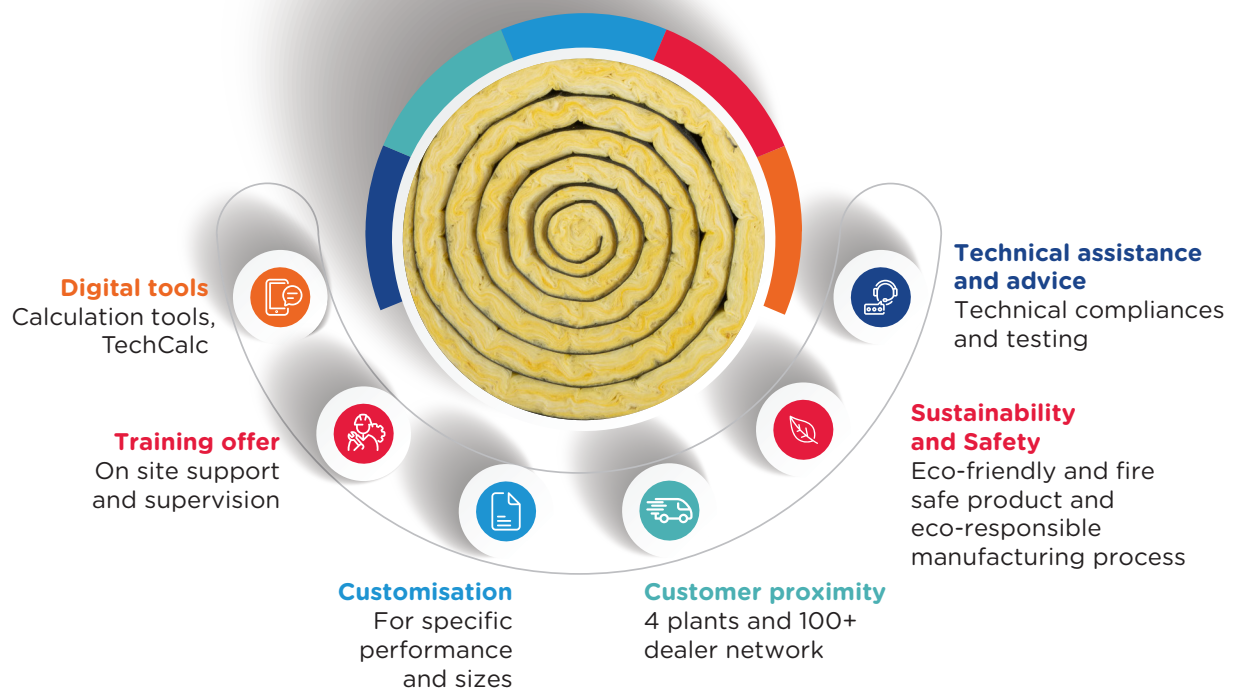


The Energy Resource
Institute: Green
Product certification



Singapore Green
Building Council: Green
Product certification

WHY SAINT-GOBAIN INSULATION



OUR PRESENCE



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5th Floor, Leela Business Park,
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Maharashtra 400 059, India



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