

The Power of 3 in 1

INSERA[®]

THERMAL - ACOUSTIC - FIRE

DESIGN COMFORT INSULATION

INSERA® - THERMAL - ACOUSTIC - FIRE

- **INSERA®** is white wool blanket manufactured from polycrystalline materials. Alumina & silica are used as a raw material for manufacturing of white wool blanket.
- It is having high temperature stability, low thermal conductivity, good sound absorption, excellent thermal shock resistance, lightweight & superior corrosion resistance.
- It is completely inorganic & available with TAF grade and available in various densities, sizes & thicknesses.
- It is highly durable continuous blanket with no added organic constituents & binders.

Brief Description	It is manufactured from bulk fibers produced using latest spinning process. This specific grade is used for thermo-acoustic-fire applications
Material Type	Open cell material having high thermal resistance, good sound insulation property & good fire properties
Color	White
Applications	Hot Water Pipeline, Building Wall, Trap door, Sauna Bathroom

STANDARD DIMENSIONS :

Thickness (mm)	25	50
Density (kg/m³)	64/80/96/128	64/96/128
Length (mm)	7300 or 7620	3650 or 3810
Width (mm)	610	610

THERMAL CONDUCTIVITY (K VALUE) TABLE (AS PER IS 15402/ IS 3346) :

Mean Temperature (°C)	Thermal Conductivity (W/mK)			
	Density (kg/m³)			
	64	80	96	128
25	0.035	0.035	0.034	0.033
35	0.037	0.036	0.035	0.034
50	0.044	0.042	0.04	0.039

THERMAL RESISTANCE (R VALUE) TABLE :

Mean Temperature (°C)	Thermal Resistance (ft².hr.°F/BTU) [For 25 mm thickness]			
	Density (kg/m³)			
	64	80	96	128
25	4.06	4.01	4.18	4.22
35	3.83	3.94	3.97	4.18
50	3.17	3.37	3.55	3.64

Mean Temperature (°C)	Thermal Resistance (ft ² .hr.°F/BTU) [For 50 mm thickness]		
	Density (kg/m ³)		
	64	96	128
25	8.11	8.35	8.45
35	7.67	7.93	8.35
50	6.34	7.10	7.28

TECHNICAL DATA :

Material Grade	TAF grade (Thermo - Acoustic - Fire)		
Surface Burning Characteristics	Flame Spread index (FSI) : 25 Max. Smoke Developed Index (SDI) : 450 Max. Fire Classification : Class A	}	As per ASTM E 84, NFPA 90A, 90B & Life Safety Code 101
Reaction to Fire Tests	Non-Combustible Material Fire Classification: Class A1		
Fire Resistance Rating	120 minutes	}	As per ASTM E119
Fibre Diameter	3 Microns	}	As per IS 15402/IS 14656
Tensile Strength	64 kg/m³ - 16.7 kPa 96 kg/m³ - 64.4 kPa	}	As per IS 15402/IS 14656

INSERA[®] TAF is available in roll form packed in polythene bags and further encased in cardboard cartons.

ACOUSTIC PERFORMANCE :

- The absorption coefficients at different frequencies (1/3 octave band) in accordance with IS 8225/ ISO 354/ ASTM 423C.

Density & Thickness	Frequency (Hz)	Sound Absorption Coefficient (SAC)	NRC	Sound Absorption Class
	100	0.55		
	150	0.83		
	160	0.73		
	200	0.69		
	250	0.85		
	315	1.00		
	400	1.07		

Density & Thickness	Frequency (Hz)	Sound Absorption Coefficient (SAC)	NRC	Sound Absorption Class
128 x 50	500	1.09	1.0	Class A
	630	1.12		
	800	1.04		
	1000	1.06		
	1250	0.98		
	1600	0.97		
	2000	0.93		
	2500	0.94		
	3150	0.95		
	4000	0.94		
	5000	0.90		

FEATURES :

- Excellent thermal & chemical stability
- Light weight
- Low thermal conductivity
- Good sound absorption
- Resistant to thermal shock
- Good thermal, acoustic & fire property
- Excellent corrosion resistance
- Non-combustibility
- Good fire rating
- Asbestos free
- Easy to cut & install in critical areas due to its flexibility

INSERA® TAF APPLICATION AREA :

HOT WATER PLUMBING PIPELINE:

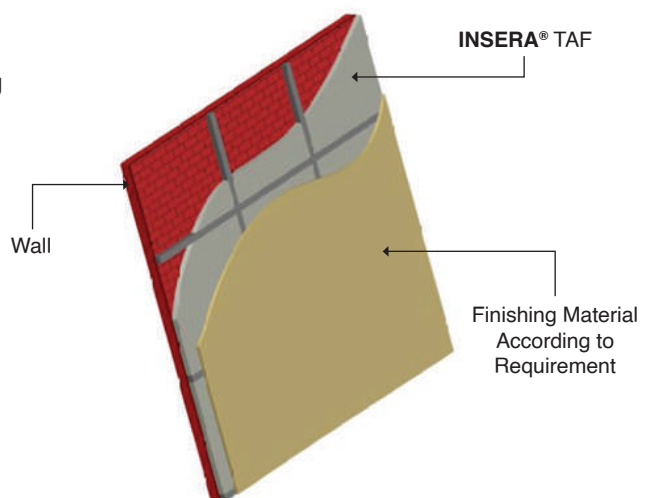
- Pipes made up of PLP, UPVC, CPVC, SS, GI, MS available in the market & used for carrying water from one end to the other end through long distances in buildings, industries, factories, offices, gyms, hostels, hotels, hospitals, etc.
- In case of solar water heater application situated at the top of the building, top floor might receive hot water but the ground floor receives little colder water due to heat transfer throughout pipeline length & end user does not get expected temperature of water at the end.

- **INSERA®** TAF wrap around hot water pipelines reduces heat loss to surrounding and helps in maintaining temperature of hot water throughout length of pipe so that hot water entered at the start of pipe at some temperature will stay at the required temperature at the end of pipe by reducing heat transfer throughout length and won't get affected much by the ambient temperature.
- **INSERA®** TAF also provides personal protection by preventing risk of injury to workers due to physical contact in case of hot water pipelines are installed in working areas by keeping surface temperature of insulation material in safe range that complies with international standards.
- **INSERA®** TAF has excellent fire property as it is non-combustible material. It does not burn if exposed to fire & has very low smoke developed index and flame spread index which complies with international standards.
- **INSERA®** TAF also helps in reducing the noise coming from hot water pipelines or its vibrations & makes the surrounding comparatively noise free.



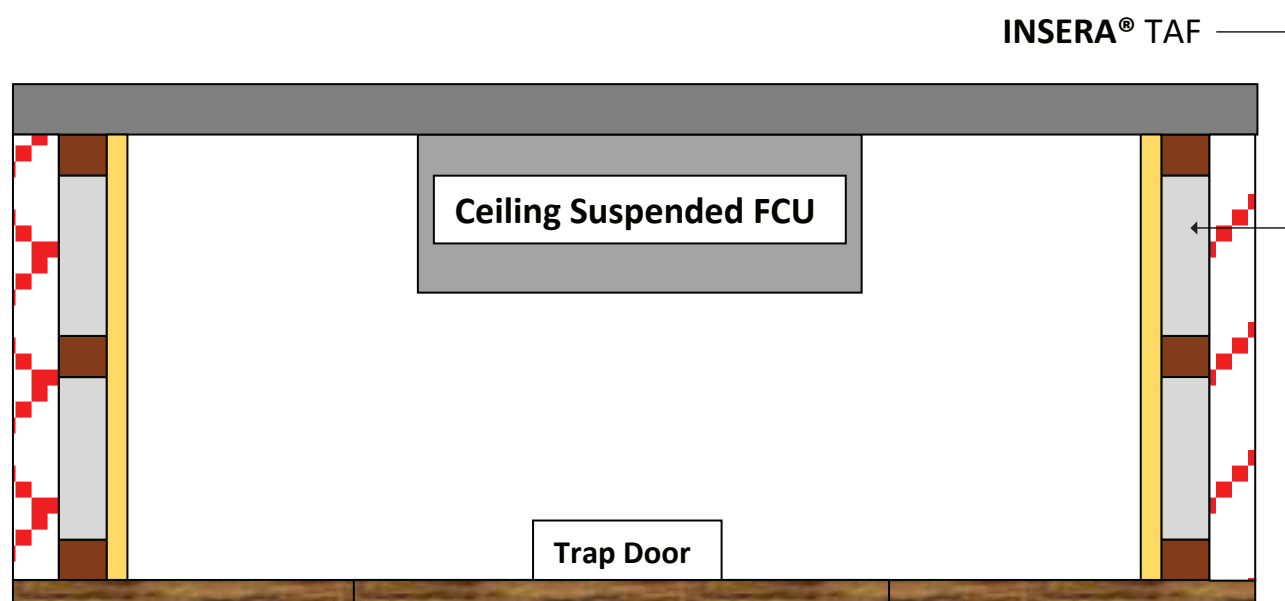
BUILDING WALL :

- Building walls are exposed to direct sunlight hence a huge amount of heat gain occurs inside the building through walls. This will lead to increase in energy usage of building to maintain the human comfort.
- **INSERA®** TAF having low thermal conductivity can be applied on the wall of buildings with the help of wooden/metal framing, which will reduce the heat transfer from the building wall to inside the building eventually lowering the energy usage of the building.
- Building walls of some particular rooms are required to be made in such a way that it can promote good acoustic ambience inside the room for the occupants.
- **INSERA®** TAF having very good acoustic properties are used to prevent echo inside the room & reduce the transmission of sound through the wall promoting good acoustic ambience inside the room for the occupants.
- There are chances of fire provoking inside the room of a building due to any causes & spreading it from one room to another room. This may causes a hazardous situation inside the building, as the occupants will not have time to rescue themselves if building walls are not manufactured to resist fire.
- **INSERA®** TAF having very good fire resistance rating can be applied between the walls with the help of metal framing which will resist fire and provide time for the occupants to evacuate in case of hazardous situation.



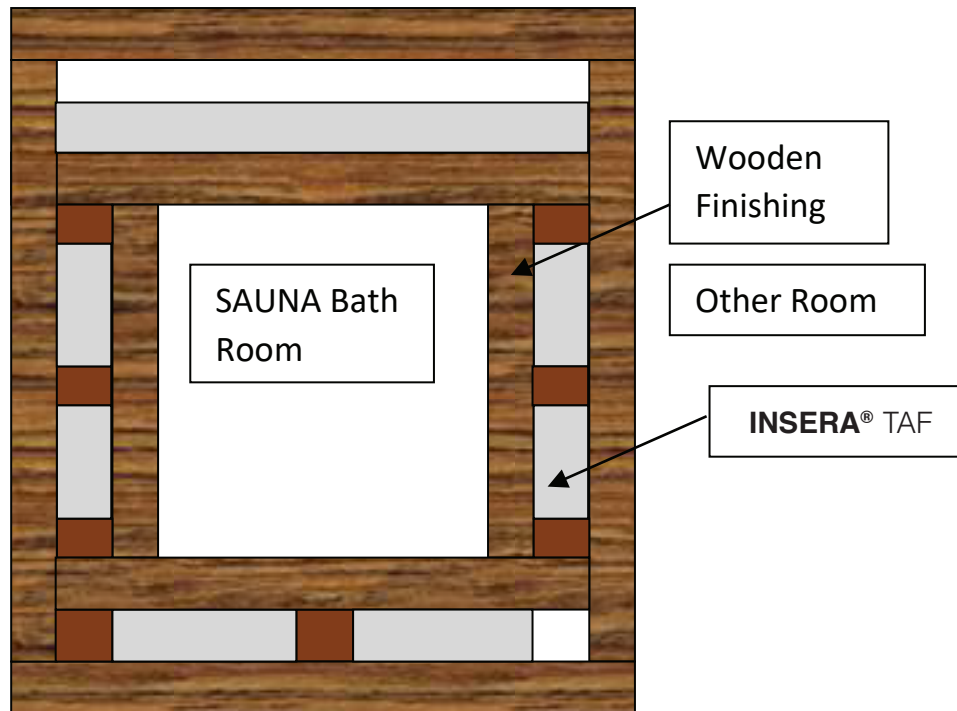
TRAP DOOR :

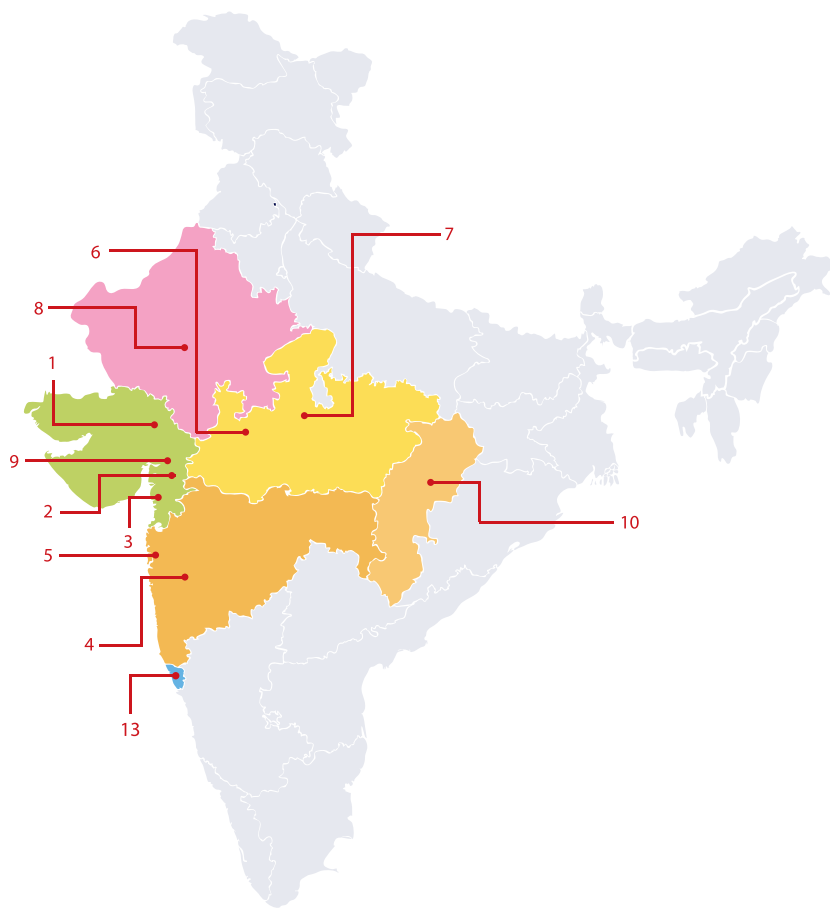
- Trap door is hinged/sliding door in a floor or ceiling where Fan Control Unit (FCU) is concealed.
- Trap door acoustic insulation ensures absorption of the noise generated by FCU. This is done in order to not let the noise of the FCU transmitted to other side of trap door.
- It also reduces vibrations transmitted from installation area.



SAUNA BATH ROOM :

- SAUNA room is made up of wooden partition designed to experience dry/wet heat sessions for relaxation purpose.
- **INSERA®** TAF helps the sauna room to heat up more quickly by reducing heat transfers from SAUNA room to other rooms and it also protects the surrounding building materials and other ancillaries from the SAUNA's heat.





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