



Sensible Cooling
PCM TECHNOLOGY



freddoTM
COOLTILES



TERRACING TILES

| Heat Reflective | Waterproof | Anti-Skid |

Think Smart Think Different



freddo™

Thermal Insulating Tiles for External Use

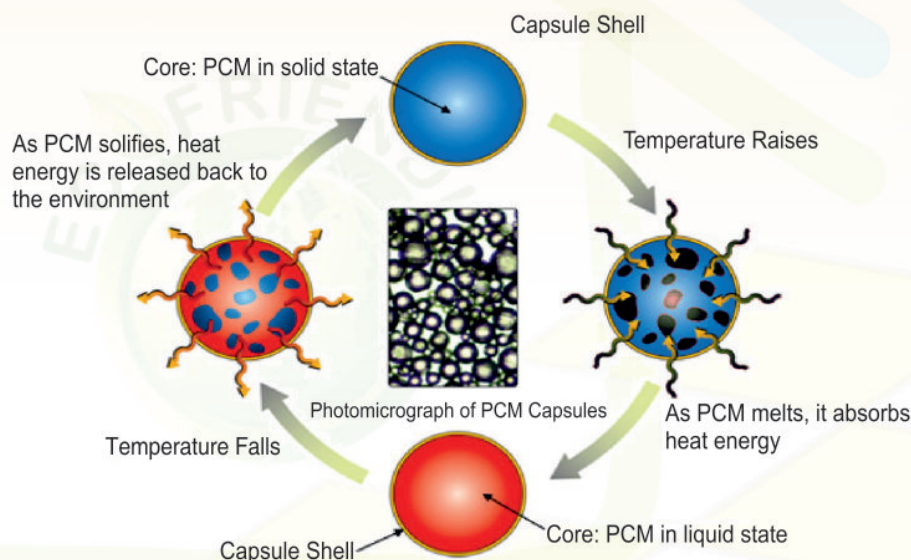
freddo™ Heat Insulation Tiles specially designed to keep your home cool & pleasant are made from **PCM Technology** by using micro encapsulated PCM's (Phase Change Material) which being leak-proof and stable thus are selected geo-inorganic products as binders using a special mechanical process. The external surface of the tiles is also designed to provide a smooth, and water proof surface which remains permanent. After use it reduces power consumption and save money and hence this technology is helpful in strengthening countries economy.



freddo™
COOLTILES

How do PCM Works ?

All materials have the capacity to absorb & release heat energy with an accompanying temperature change, and such absorbed or released heat is known as sensible heat. Sensible heat is readily determined from the material's mass, specific heat capacity and temperature change.



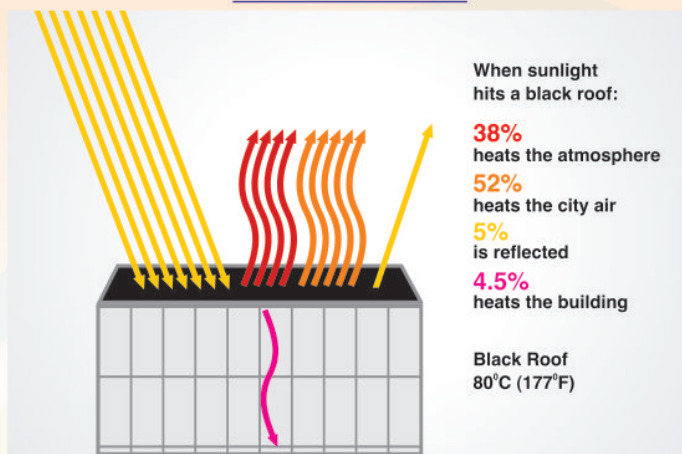
(freddo™ roof insulation Tiles make use of this concept to effectively insulate homes from heat.)

PCMs (Phase Change Material) undergo sensible heat change like other materials, however at certain temperature, depending on the selected PCM, they additionally undergo a phase change, whereby the material melts or freeze, The absorbed or released heat energy associated with such phase changes is Known as latent heat, and PCMs are sometimes referred to as latent heat storage materials. As the phase change process is roughly isothermal, with a minimal temperature change, the heat absorbed or released can work to buffer the temperature of the PCMs immediate environment towards this phase change application, High thermal storage density also allows PCMs to be used for efficient storage of heat or cold, and in this sense the PCM can be considered to be a thermal battery.

THE SECRET INGREDIENT

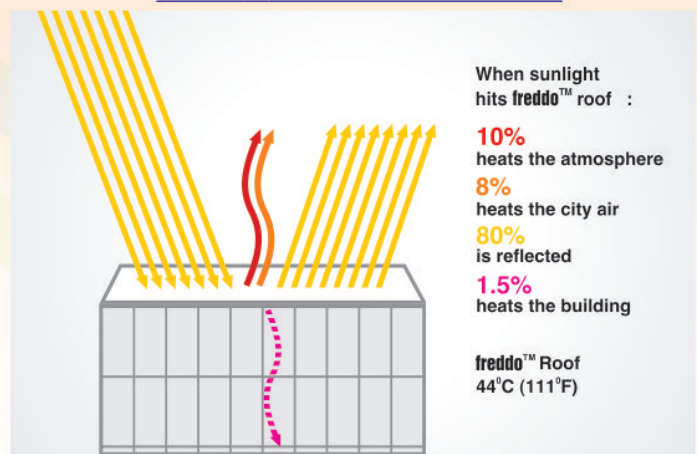
For the first time in the world, we have made roof insulation tiles better than ever with our specialised Cool Grit Granules. These granules absorb and store within them, the humidity from the air cooling the tile and the surface below it. As the temperature rises, these granules release the water vapour, ensuring that the heat is not transferred below. This eco-friendly process also absorbs CO2 and neutralises harmful Nitrogen Oxide present in the air, thereby acting as a natural air purifier.

Normal roof tiles



vs

freddo™ Roof Insulation Tiles



Why freddo™ ?

Because it :

Cools inside the room in the summer and keeps warm in winter

Easy in handling and placing

High Durability

Reduces room temperature by up to 10°C

High Solar Reflective Index of 96%

Impervious to water

Anti-bacterial, anti-skid and washable

Reduces Electricity Bill

Cost effective

Reduces use of AC and lessens CFC emission

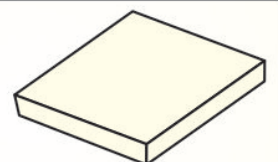
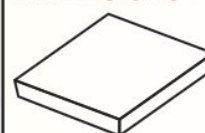
Light weight and high dimensional stability

Durable and built to withstand considerable amount of load

Provides smooth surface finish

Smooth, glossy and adds to aesthetic appeal

DIMENSIONS :



HELL

freddo

HEAVEN

Applications :

It is for exterior use to cover the roof or wall.

The application procedures are same as normal tiles.

- Roof Top of Buildings
- Wall of Buildings
- Cold Storage (Roof top, inner and outer side of wall)
- Swimming Pools Bays
- Temple Walk Ways

Make your home the Heaven

it Deserve to be

only with **freddo**TM Insulation Tiles



Physical Properties-freddoTM White Colour

Solar Reflective Index (SRI)	96.0		
Reflectance	0.77		
Emittance	0.94		
Composition	Infrared Reflective in-Organic Mineral (Non Degradable)		
Abrasion Resistant	0.2 mm to 0.4 mm Max		
Flatness	<1 mm Max		
Water Absorption	<7% (at Sat. after 96hrs)		
Water Permeability	Impervious to Water		
Surface	Non Skid		
Unit Weight	2.9 Kg/Sq.ft		
Dimensions	225x225mm	300x300mm	(± 1mm)
Standard Thickness	15mm	20mm	
Colour	White (as per cust. requirement)		
Polishing	Not Required		

Mechanical Properties

Flexural Strength (7days)	45Kg/cm ² (min)
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Sham Tiles & Concrete Products

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