

ICE BASED THERMAL ENERGY STORAGE SYSTEM

Product: Ice Based Thermal Energy Storage Tanks

Application: Hotels, Commercial & Retail Complex, Hospitals, Milk Chilling Plants, Industrial Cooling, etc.

Description: 'In Ice Based Thermal Energy Storage System', the storage tank is filled with ice balls which are almost filled with water. The tank is partially filled with glycol plus water mixture (brine solution). For charging the storage, the chillers deliver water glycol at -5°C , and the water inside the ice balls freeze. The heat transfer medium is pumped to the upper pipes of the tank and flows by gravity from the top to the bottom. During the storage discharge, the medium flows from the bottom of the tank to cool the users and comes back warm at the top of the tank where it is cooled again by contact with the ice balls, melting the ice inside.

This System works in conjunction with ancillaries viz. Brine Chiller, Plate Heat Exchanger, Pumps, Piping and necessary motorized valves. The chilled brine is used to transfer cool energy on the chilled water side with the help of plate heat exchanger.

Benefits & Features:

- Capacity expansion of the existing HVAC system
- Compact System leading to lesser space requirement compared to CHW TES.
- Rightsizing of the Chilled Water Plant by inclusion of the right mix of systems and components on Brine Side.
- High usable capacity due to extended sensible discharge capacity post latent heat transfer.
- Shift energy consumption to off-peak hours, Hence manage the on-peak demand.

