Ice Chiller® Thermal Storage Product Specifications

The ICE CHILLER® Thermal Storage Unit(s) shall be Baltimore Aircoil Company Model TSU-_______. Each unit shall have a latent ton-hour storage capacity of _______ ton-hours to be generated in _______ hours when supplied with _______ GPM (lps) of a 25% (by weight) solution of industrially inhibited ethylene/propylene glycol. The minimum glycol temperature required during the ice build operating mode shall be _______ °F(°C). Rated system performance shall be provided in the format recommended by the Air-Conditioning & Refrigeration Institute (ARI) Guideline T. The thermal storage units shall be modular in design. Unit design shall allow units of different sizes to be installed in order to optimize unit selection and minimize space requirements. Tanks sizes can be mixed due to internal piping arrangements that create a balanced flow due to uniform pressure drop through the coil circuits.

The tank shall be constructed of heavy-gauge galvanized steel panels and include double brake flanges for structural strength. The tank walls shall be supplied with a minimum of 4-1/2" of insulation that provides a total insulating value of R-18. The tank design shall utilize multiple liners. The primary liner, which forms the interior of the unit, shall be of single piece construction and be suitable for low temperature applications. The secondary liner/vapor barrier shall be separated from the primary liner by 1-1/2" of extruded polystyrene insulation. The tank bottom shall be insulated with 2" of expanded polystyrene insulation and 1" of extruded polystyrene insulation.

The ICE CHILLER® Thermal Storage Unit shall be provided with watertight, sectional covers constructed of hot-dip galvanized steel. The covers shall be insulated with a minimum of 2" of expanded polystyrene insulation.

Contained within the tank shall be a steel heat exchanger that is constructed of 1.05" O.D., all prime surface serpentine steel tubing encased in a steel framework. The coil, which is hot-dip galvanized after fabrication, shall be pneumatically tested at 190 psig and rated for 150 psig operating pressure. The coil circuits are configured to provide maximum storage capacity. The coil connections on the unit are galvanized steel and are grooved for mechanical coupling.

Each ICE CHILLER® Thermal Storage Unit shall be provided with a sight tube. The sight tube, which shall be fabricated from clear plastic pipe, shall display the tank water level and corresponding ice inventory.

Operating controls, consisting of two float switches, shall be mounted on the outside of the tank. The high level float switch terminates the build cycle when the tank water level reaches the 100% ice build level. The high level switch shall also prevent re-initiation of the build cycle until approximately 15% of the ice has been discharged. The second float switch is a low water cutout. The cutout requires that the water level in the ICE CHILLER® Thermal Storage Unit be at or above the 0% ice build level before the ice build cycle can begin. Operating control quantities vary based on project requirements. An optional differential pressure transmitter shall be available to supply an electrical output signal proportional to the amount of ice in inventory.

The heat transfer fluid shall be an industrially inhibited, 25% by weight, ethylene/propylene glycol solution specifically designed for HVAC applications. The 25% (by weight) solution is designed to provide freeze/burst and corrosion protection as well as efficient heat transfer in water based, closed loop systems. Corrosion inhibitors shall be provided to keep pipes free of corrosion without fouling. DOWTHERM™ SR-1 and UCARTHERM™ are acceptable fluids.

Overall unit dimensions shall not exceed approximately _______ ft (m) by _______ ft (m) with an overall height not exceeding _______ ft (m). The operating weight shall not exceed _______ lbs (kg).