

GENERAL:

1. This sections provides criteria for selection and installation of open circuit, induced draft, cooling towers.

DESIGN GUIDELINES:

1. The cooling tower will be designed for: EWT = (variable) deg F, LWT = 85°F, Ambient Air (wet-bulb) = 81°F.
2. Tower type: Crossflow design such that cooling air moves horizontally through the fill, across the falling water, then discharges through the top of the unit. The alternative offering is a counterflow design that allows air to enter the unit from the bottom and then move upward through the fill, opposite the falling water. Type of tower will be evaluated on a project by project basis.

SPECIFICATION REQUIREMENTS:

1. The cooling tower manufacturer shall guarantee that the tower supplied will meet the specified performance conditions when the tower is installed according to plans.
2. If the Owner suspects a thermal performance deficiency, the owner may choose to conduct an on-site thermal performance test in the presence of the manufacturer, and under the supervision of a qualified, independent third party in accordance with CTI (Cooling Technology Institute) ATC-105 standards during the first full year of operation.
3. If the tower fails to perform within the limits of test tolerance; then the cooling tower manufacturer shall make alterations as it deems necessary to overcome indicated deficiency. The on-site thermal performance test shall be performed at the manufacturer's expense. The cooling tower shall be guaranteed at the 4°F approach (as indicated on drawings) when tested per CTI ATC-105 methodology. Should alterations prove to be inadequate, the owner shall be compensated by installation of additional cooling tower capacity sufficient to bring the tower up to the specified performance.
4. Fan: The fan will be gear-shaft driven with the motor located outside the airstream. The fan motor will be driven by a variable frequency drive.
5. Access via ladder and platform, shall be provided to maintain gearbox and motor as well as access to hot deck for cleaning and inspection.
6. Cold Water Basin: Fully-welded stainless steel or concrete basin.
7. Materials: The tower shall be fiberglass or stainless steel, with any required attachments being stainless steel, including fasteners. Aluminum ladders and galvanized grating/screens are acceptable.

8. If required, basin heat will be provided by a steam to water heat exchanger. Outside MU, basin heat can be provided by hot water heat exchanger if steam is unavailable. Electric heat is not desired if winter operation is expected.
9. Special Warranty – Manufacturer’s standard form in which manufacturer agrees to repair or replace components of chiller that fail in materials or workmanship within specified warranty period. Extended warranties include, but are not limited to, the following:
 - 9.1. Fan assembly including fan, drive, gearbox, and motor.
 - 9.2. All components of cooling tower
 - 9.3. Warranty Period: Five years from date of Substantial Completion.