

PART 1: GENERAL

1.01 General:

- A. This standard is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. The responsibility of the engineer is to apply the principles of this

mat for the concrete basins shall be a monolithic pour only, NO EXCEPTIONS. Basin walls for Concrete design shall be constructed with minimal control joints.

5. All internal components shall be stainless steel.
6. Force draft fans shall utilize composite shafts.
7. All gear boxes shall have vibration shut down switches with remote oil fill lines.
8. Fan blades shall be designed to adjust pitch and tip clearance
9. Make up water to basin must be installed in such a way to facilitate maintenance of make-up valve without draining basin. All make up valve floats shall be installed in a stilling well.
10. Cooling towers shall be designed to utilize N+1 redundancy for pumps and cells.
11. Condenser water system shall be designed as a header such that any pump can move water to and from any cell. Pumps shall be arranged such that removal and maintenance can be accomplished without draining basin or sump.
12. Condenser water system shall be designed with a by-pass to facilitate cold weather operation. Sump and basin heaters will not be used.
13. Cooling tower system shall be designed to filter 5% of circulating flow. Either sand filters or mechanical vortex filter may be used.
14. Cooling towers shall be designed such that material of construction is suitable for either low pH or high pH water treatment.
15. Cooling tower shall be designed around 98 deg.F ambient temperature with 90 degF wet bulb. Cooling tower cells shall be sized to utilized a minimum 10 deg.F delta temperature.

PART 2: PRODUCTS

2.01 General:

- A. The refrigerants listed in this section comply with EPA guidelines as final HFC refrigerants and conform to SHSU inventory requirements.
- B. Manufacturer specialty refrigerant blends, refrigerant charges available only from the original manufacturer or refrigerant requiring special ordering are not acceptable.
- C. Where air cooled chillers are utilized Carrier Aqua Snap is preferred. N+1
- D. NO MICRO CHANNEL COILS ALLOWED

2.02 Acceptable HFC Refrigerant Types and Application:

- A. For DX Units **410A shall be used as SHSU Refrigerant Standard unless written approval received from SHSU HVAC department.**
- B. **R134a** (replaces R12). Medium temperature applications. Packaged refrigeration and air conditioning equipment.
- C. **R404a** (replaces 502). Medium and low temperature applications. Reach-in and walk- in coolers and freezers, environmental chambers.

END OF STANDARD