EVAPORATIVE PRECOOLING SYSTEM

1. Approved Manufacturers
   1. Peak+
   2. Equivalent (must be pre-approved and have been manufacturing the equivalent product for a minimum of 5 years)
2. Evaporative cooler frame assembly:
   1. Frames to be made of extruded PVC with added UV inhibitor.
   2. Final frame size to be designed by manufacturer.
   3. Pre-filter screen must be directly removable without tools.
   4. Evaporative media to be made of a non-woven polyester material and be removable without tools or the removal of fasteners. Alternative materials must be tested and approved by manufacturer.
   5. All spray nozzles must be 1/4 turn, removable, and include a check valve to 2psi in the frame manifold.
   6. Each frame to have a single water connection using tool-free quick connectors for easy service. Plumbing internal to the frame to be provided and assembled from the factory.
   7. Drain assembly to be provided to keep any excess water (rain, wash down, etc.) from building up in the frame and allow for the installation of a collection system.
   8. Any metal components must be stainless steel or equivalent to prevent corrosion.
3. Mounting:
   1. Frames, control enclosures, and valve boxes must be mounted using magnets designed to withstand wind gusts of up to 100 MPH and provide quick tool and fastener free access to any section of the HVAC unit.
   2. Manufacturer to specify required sheet metal for each specific job.
4. Performance requirements:
   1. System must be designed so that no water ever contacts the HVAC unit’s coils.
   2. Maximum pressure drop of assembly to be no more than 0.10” W.C. at normal working conditions.
   3. System must have an Estimated Useful Life (EUL) of 15 Years
5. Controls:
   1. Controller shall monitor ambient temperature, relative humidity, condenser air temperature, liquid line temperature, compressor amps, and water pressure.
   2. Controller to spray in variable time intervals. Time intervals to vary based on ambient weather conditions to eliminate excess water spray.
   3. Controller to provide 24v output to actuate external solenoid valves.
   4. Controller to include cellular data connection and store 1 year of data on a cloud service provided by the manufacturer.
   5. Controller to include a test spray button mounted to the exterior of the controller’s enclosure to facilitate system testing and winter drain-down without opening the control enclosure.
6. Water System:
   1. Manufacturer of evaporative condensing precooling system to provide a salt/resin ion exchange water softening system (Kinetico or equivalent) sized to adequately treat the water on-site for hardness to reduce scaling of evaporative media.
      1. Note If supplied water is consistently less than 5 gpg Hardness, a Softener may not be needed.
   2. Manufacturer of evaporative condensing precooling system to provide a booster pump package (pump, VFD, and expansion tank), as required, to maintain a minimum of 60psi at the frames.
   3. Manufacturer of evaporative condensing precooling system to provide a 5 micron filter (Cartridge, or bag style) to prevent clogging of sprayers.
   4. No water recirculation systems are allowed. System to automatically adjust water spray interval based on ambient weather conditions to eliminate excess water spray.
7. Manufacturer’s Services:
   1. Manufacturer to evaluate the installation site and provide detailed installation layouts that include the Plumbing Layout, required sheet metal, valve layouts, controls details, and other associated equipment. Layouts must be provided to installing contractor before any work begins.
   2. Manufacturer to provide 1 hour of pre-installation training.
   3. Manufacturer to provide contractor assisted startup and commissioning, including owner hand-off and maintenance training.
8. Installation:
   1. Installer to install the evaporative condensing precooling system per the manufacturers job-specific layout and standard installation instructions. All work (piping, wiring, etc) to be done in a neat and professional manner and in accordance with the federal, state, and local codes and laws.
   2. Peak+ frames must be mounted on a planar surface. The installing contractor is to provide any sheet metal that is needed to complete the mounting surface.
9. Maintenance:
   1. Installer to provide 1st year of maintenance, including fall winterization before freezing weather, spring startup, monthly salt checks for water softener, cleaning the screens (cottonwood) monthly, and performing all other maintenance items shown in the manufacturer’s maintenance guide.