

Closed Loop Fluid Cooler Systems

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Cooling systems based on fluid coolers and closed loops have become more popular for new and retrofit construction with the increased use of individual heat pumps in HVAC applications and the desire by industrial cooling water users to minimize deposition in water cooled equipment such as compressors and furnaces. There are two basic designs for a fluid cooler cooling system. One design uses a cooling tower with a closed loop cooling coil installed inside of the cooling tower, which is then referred to as a fluid cooler cooling tower (FCT). The second design is to use a standard evaporative cooling tower with a heat exchanger (CTEX) used to transfer heat between the closed loop and cooling tower.

ProChemTech has designed, supplied, and installed many such systems, and their water management programs, since 1987 and comparison of the two designs shows that a properly designed CTEX has several advantages over the FCT as follows.

1. We find that the installed cost of a CTEX is always cost competitive with a FCT.
2. Corrosion issues are not a problem when a corrosion proof evaporative cooling tower is paired with a stainless steel plate and frame heat exchanger in a CTEX system. FCT have significant corrosion issues as both the typical galvanized cooling tower structure and expensive to replace galvanized cooling coil are subject to corrosion. Use of copper, or stainless steel, cooling coils and stainless steel for the cooling tower structure merely increases the already substantial cost differential in favor of the CTEX design.
3. In some areas of the country, freeze protection is a major concern and it is much more difficult to freeze protect a FCT than a CTEX.
4. Acceptable water treatment, both system designs have the same scale and deposition issues, is more difficult to accomplish on a FCT than a CTEX due to the design of FCT. This problem increases the inherent corrosion problems with a FCT. Please note that the “open” side of a FCT requires the exact same attention to water treatment as a standard evaporative cooling tower.

Best Cost Effective Technology

Principals of ProChemTech have been in water management over 40 years and have carefully reviewed the two designs for closed loop fluid cooling systems. Their conclusion is that the CTEX design is superior in all aspects to the FCT design.

Given this knowledge, ProChemTech has obtained a national OEM agreement to supply advanced, corrosion proof counterflow Delta cooling towers for use in CTEX systems.



ProChemTech Engineered Services Division



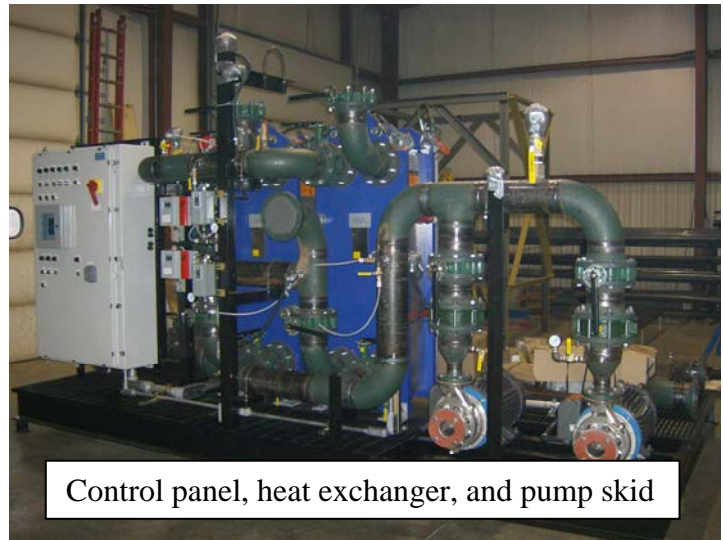
Our Engineered Services Division (ESD) has designed and supplied many cooling tower systems for industrial and HVAC applications. We are ready to provide complete design and equipment packages for your closed loop fluid cooler project. **Such systems have a 20 year manufacturers' warranty from Delta on the cooling tower and a 5 year warranty against corrosion damage on all other equipment from ProChemTech when a specified water management program is utilized.**

Whether you are a consulting architect, engineer, or a direct user: PCT ESD can provide you with a cost effective, durable fluid cooling system.

Design and Specification Delta Cooling Towers

Shop Built Equipment Packages

- pump skids
- hot and cold well
- heat exchangers
- control panels
- sidestream filtration
- makeup pretreatment
- water chemistry controls



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