

238413S01 AHU Humidification Water Treatment

Purpose:

This standard is to address the inlet water serving any air handling unit (AHU) that has any type of humidification system. AHUs may have different types of humidification systems that either use the water directly in the humidification process or in the generation of clean steam to be used by humidifier equipment inside the AHU. In any of these applications, the incoming water should be treated due to potential scaling or equipment damage caused by straight tap water.

Requirements:

1. All incoming water should be treated initially with a water softening system.
2. The water from the softener system should be further treated using a RO water treatment system before going to the humidification or steam generation equipment.
3. The incoming water to the RO system must be tempered using a mixing valve arrangement so that the water temperature is 77 F instead of using standard domestic cold water. This is required because lower water temperatures impact the ability of RO systems to maintain their product flow rate. Water production decreases approximately 3% for each degree below 77 F.
4. The mixing valve arrangement should include check valves external to the mixing valve to prevent crossover.
5. The water systems should be connected to the campus Tridium Building Automation System using BACnet protocols. All points from the systems' controllers should be discoverable to Tridium with the following items being the minimum points that should be monitored on Tridium:
 - a. RO System Status
 - b. RO Output Water Resistivity
 - c. RO System Loop Pressure
 - d. RO Total Dissolved Solids
 - e. RO Product Flow Rate
 - f. RO Loop Pumps (if applicable) Command and Status
 - g. RO System Alarms from the system control panel
 - h. RO Tank Level Alarm (if system has tank)
 - i. Softener System Status
 - j. Softener Salt Level Alarm
 - k. Softener System Alarms from the system control panel
 - l. Softener Flow Rate