



Multifamily Facility Management Services

RE-PLUMB TANK TYPE SHW HEATERS TO SERIES

Description:

In some multifamily and small commercial buildings, service hot water (SHW) is provided by a central set of tank type water heaters that are operating in parallel. Cold city water is supplied to each of these tanks and hot water is drawn directly from each for use in the building. With this arrangement, all heaters must be kept up to the same minimum temperature required by the building occupants in order to meet peak demand.

A better arrangement is to re-plumb these tanks so that they are in series. In this system, only one tank is supplied with cold city water and the thermostat on this tank is set at a relatively low level (for example 80° F). The job of this one tank, then, is simply to raise the temperature up to this low level. The outlet of this tank is plumbed to the inlet of the second tank in the series instead of directly to the building. The thermostat on the second tank is set at a progressively higher level. This practice is continued until the last tank in the series. The temperature on the last tank in the series is set at the minimum required to meet the building's peak demand and its outlet is plumbed directly to the building, rather than to another tank.

The series plumbing arrangement saves energy because off-cycle jacket and flue losses are reduced for the tanks which can be kept at lower temperatures. At the time, the system still maintains plenty of capacity and recovers well during periods when a large volume of hot water is required quickly.

How to Implement:

Re-plumbing of the service hot water system should be completed by a qualified, licensed plumbing contractor. The costs involved in this work can vary greatly depending on the current plumbing arrangement in the building. It is recommended that the building owner obtain at least two bids and preferably three before selecting the contractor to complete the work.