

buildings of six units or less using the performance approach when no recirculation pump is installed. However, the distribution system in the Standard Design and Proposed design will both assume a pump with timer controls. See §113(c) 2 and §151(f) 8 C



5.2 Mandatory Requirements

5.2.1 Equipment Certification

§113(a)

Water heaters must be certified by manufacturers as complying with the *Appliance Efficiency Regulations* at the time of manufacture. Regulated equipment may not be sold in California unless it is certified. This includes the following types of water heaters:

- Gas water heaters and boilers
- Heat pump water heaters
- Electric water heaters and boilers
- Oil-fired water heaters and boilers.

5.2.2 Equipment Efficiency

§113(b), §111

Small water heaters are regulated by the federal standards. The efficiency requirements for such equipment are given in Table 5-2 below. The efficiency rating for small water heaters is called the energy factor (EF). The EF is intended to represent the overall efficiency of a water heater, combining the recovery efficiency and standby losses. The Energy Factor for water heaters other than heat pump water heaters is a number that varies between zero and less than one, and is based on standard test conditions designed to represent a typical 24-hour period. During the test, 64.3 gallons of hot water is withdrawn in six equal draws at one hour intervals and then the water heater sits idle for the remaining 24 hour period. Set point temperatures and inlet temperatures are standardized for the test.