

## WATER HEATING EQUIPMENT

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### Type, Number, and Efficiency

Water Heating equipment may be installed only if the manufacturer has certified to the Commission that the equipment complies with all the applicable requirements, including efficiencies. Check the CF-1R for the type, number and minimum efficiencies for each project. Check the CF-2R for installer certification of efficiencies.

### “Small Storage Gas”

The most common type of water heater installed in new construction is basically a default (no penalty/no credit) water heater called a “small storage gas”. It meets the prescriptive requirements. This requirement can also be met by installing an instantaneous water heater (See Alternative 1) or, when gas is not available, an electric storage water heating system (See Alternative 2). Anything else must be modeled.

### A “Small Storage Gas” water heater must have”

1. A gas input rating < 75,000 Btu/h
2. A minimum efficiency of  $EF = 0.67 - (0.0019 \times \text{volume})$ 
  1. 50 gal = 0.575 EF, 40 = 0.594 EF, 30 gal = .0613 EF
3. If minimum efficiency is installed, must also be wrapped with an R-12 blanket.
4. If system uses a trunk and branch system (described later), all hot water pipes from the water heater to the kitchen must be insulated with 1” or R-4 insulation.
5. All hot water pipes greater than  $\frac{3}{4}$ ” must be insulated.
6. No recirculation pump unless it is the demand based type with manual controls (described later). All pipes that recirculate water must be insulated.

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### “Small Storage Gas” – Alternative 1

Instead of the Small Storage Gas water heater described previously, they may install an instantaneous gas water heater that has:

1. A gas input rating < 200,000 Btu/h
2. No supplemental storage tank installed.
3. If system uses a trunk and branch system (described later), all hot water pipes from the water heater to the kitchen must be insulated with 1” or R-4 insulation.
4. All hot water pipes greater than ¾” must be insulated.
5. No recirculation pump.

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### “Small Storage Gas” – Alternative 2

Instead of the Small Storage Gas water heater described previously, they may install an small storage electric water heater that has:

1. No natural gas available to site.
2. Water heater located within building envelope.
3. If system uses a trunk and branch system (described later), all hot water pipes from the water heater to the kitchen must be insulated with 1” or R-4 insulation.
4. A solar water heater system designed to provide a solar fraction of at least 50%.
5. No supplemental storage tank
6. No recirculation pump.