Chapter 6: Plumbing

The Washington State Energy Code (WSEC) sets standards that minimize heat loss and conserve water (see Figure 6-1).

**Plumbing Requirements**

- Water conserving shower and lavatory fixtures required
- Insulated hot and cold water piping outside conditioned space
- Must meet requirements of 1987 National Appliance Energy Conservation Act (NAECA) and be labeled.
- Incompressible R-10 insulated pad required for electric water heaters on concrete or in unheated space.

*Figure 6-1*
[504.8.1] **Water Conservation.** Flow rates for shower heads and lavatories are limited by the Washington Administrative Code. These flow rates are set at 2.5 gpm or less for shower heads and 1.6 gpm for lavatories.

[504.2.1] **Water Heaters.** All water heaters must meet the performance efficiency requirements of the 1987 National Appliance Energy Conservation Act (NAECA). All currently manufactured units should meet this standard. Also:

[504.3] Residential water heaters must be set to a maximum 120°F.

[504.4] Each water heater must have a separate shut-off switch or valve.

All electric water heaters in unheated spaces or on concrete floors must be placed on an incompressible insulated surface with minimal thermal resistance R-10.

[504.2.1] Storage water heaters used for combination space heating and water heating must meet the efficiencies listed in Table 504.2.1.

[503.11] **Pipe insulation.** Hot and cold water pipes outside the conditioned envelope of the building must be insulated to the level specified in WSEC Table 5-12 (R-3.6 for < 2" pipe, R-5.4 for > 2").

**Swimming Pools.** Heated swimming pools must meet the following requirements:

[504.5.2] Have a pool cover approved by the Building Official.

[504.5.1] All pool heaters must have an accessible ON/OFF switch to shut off the heater without adjusting the thermostat.

[504.5.1] Pool thermostats must be adjustable to a minimum 65°F setting.
Pipe Insulation

Poorly cut insulation exposes joint to cold.
Not this way!

Hot or cold water pipe outside conditioned space
Pipe insulation

Carefully cut insulation for tight miter fit. Recommend securing corner cuts with tape or glue.

Note: Polyethylene foam will provide approximately R-3.6 per inch of thickness.

Figure 6-2