

STATE OF OREGON

INTEROFFICE MEMO

BUILDING CODES DIVISION

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Subject: Water Heater Replacement In One- and Two- Family Dwellings

This memo is the result of a request to consolidate two previous memos and also include updated information on the requirements of Section 117.2 of the One- and Two- Family Dwelling Specialty Code (Dwelling Code).

The following information is in response to questions regarding code requirements for contractor installation of like-for-like water heater replacement in one- and two-family dwellings under the minor plumbing label program within the Tri County area.

**Every effort has been made to make this information as straight forward and applicable to real world field conditions which may be a challenge to the installer or inspectors regarding existing construction. The intent of this information is to assist installers and inspectors in the tri county service area in creating a consistent application of code provisions when replacing water heaters in existing 1 & 2 family dwelling construction.**

**However, it is not possible nor reasonable to expect this memo to cover all of the potential installation conditions or special circumstances present in existing construction. Our approach has been simply to list code items which we feel deserve a higher consideration with regards to protection of the homeowner's health and safety and list those which we feel do not warrant as high of consideration for the homeowner's health and safety. Therefor, installers of replacement water heaters are encouraged to talk with local inspectors about situations which may be questionable with regards to an item listed as of special concern to the homeowner's health and safety.**

You asked if a plumbing contractor using a minor plumbing label might defer certain code requirements as a responsibility of the property owner for a water heater replacement. No, Oregon Administrative Rule (ORS) 918-780-0130(2)(a)(b), specifically sets conditions of the minor plumbing installation program as requiring the installation to be made by only a registered

plumbing contractor; and the Dwelling Code plumbing installation and product certification provisions shall be followed.

A plumbing contractor using a minor plumbing label in a one- or two-family dwelling must follow all requirements of the code. However, the Dwelling Code, 2000 Edition contains special administrative provisions regarding replacement of water heaters. These provisions can be found in Section 117.2 and a copy is attached for your convenience. Section 117.2 exempts replacement water heaters from complying with the plumbing, mechanical or electrical code provisions for new construction with one exception for water heaters in garages. Water heaters in garages are required to be installed so the pilots, burners or heating elements and switches are at least 18 inches above the floor level.

To further clarify what is meant by the exemptions in Section 117.2, the following items are considered no more hazardous based on health and safety and therefor are not required for like-for-like water heater replacements, when the existing water heater was installed to code requirements applicable at the time of original installation:

**1. Relief Valve Termination.**

- a. Existing installation method is acceptable, except that when no piping is present the termination shall be at least piped to within 6 to 10 inches of the floor at the base of the water heater. Other acceptable termination locations include a drip pan, clothes washer standpipe, floor drain or similar receptor, or the exterior of the building.

**2. Seismic Strapping.**

- a. Existing installation method is acceptable. If no strapping is currently provided the replacement water heater is exempt under section 117.2 from meeting the new code provision for seismic strapping.

**Note:** Although not required, when practical seismic strapping is recommended.

**3. Excessive Building Water Pressure.**

- a. Pressure reducing valves are not required for a water heater replacement. If the water pressure is in excess of 125 psi the homeowner should be made aware that the relief valve might leak due to this pressure. However, it is the property owner's option to install a pressure reducing valve.

**4. Water Pipe Sizing.**

- a. Existing water pipe sizing is acceptable. Both section 117.2 and section 3410.10(3) allow existing sizing to remain.

## **5. Water Heater Drip Pan.**

- a. Water heater pans are not required for replacement water heaters.

## **6. Thermal Expansion Protection.**

- a. Thermal expansion protection is not required for replacement water heaters under the provisions of section 117.2.

## **7. Fuel-Gas (Natural) Piping Drip Leg (Sediment Trap).**

Existing installation method is acceptable, with or without a sediment trap, unless required by the appliance listing.

## **8. Water Supply Valve (Full Flow Type).**

The existing cold water supply valve may remain in use.

## **9. Vehicular Protection.**

Addition of vehicular protection barriers or posts is not required under the code provisions of Section 117.2 for replacement water heaters.

The following items are considered a potential threat to the homeowner's health and safety and therefor require further consideration for like-for-like water heater replacements, even when the existing water heater was installed to code requirements applicable at the time of original installation:

### **1. Raising Water Heaters In Garages.**

- a. All replacement water heaters installed in garages must meet this provision. Sections 117.2, 1307.3 and 3310.1 require water heaters generating a glow, spark or flame capable of igniting flammable vapors installed in garages must have pilots, burners or heating elements and switches at least 18 inches above the floor level.

### **2. Fuel Fired Water Heater Venting.**

- a. Existing vent pipe sizing and type may remain in use if it meets the listing requirements of the new water heater as long as the original conditions to which

the water heater was installed have not changed. The vent pipe shall be free of cracks, gaps, perforations or other damage or deterioration which would allow the escape of combustion products, including gases, moisture and creosote.

**Example of an inappropriate like-for-like installation;**

Original installation included the water heater and furnace venting into a masonry chimney. At some point in time the furnace was changed and updated to a more efficient 90%+ and is vented through the side wall of the dwelling. By doing this the water heater was “orphaned” and is probably not working efficiently and/or is creating a hazardous condition for the occupants of the dwelling. In this example, it would be inappropriate to continue venting the new water heater into the over sized chimney. An appropriately sized vent would be required to be installed per the code and/or per the listing of the appliance.

**3. Combustion Air For Fuel Burning Water Heaters.**

- a. When like-for-like fuel burning water heaters are replaced the existing combustion air conditions may remain the same as long as the conditions to which the original combustion air requirements were based have not changed. Water heaters installed in confined spaces shall be provided with sufficient combustion air.

**Example of an inappropriate like-for-like installation;**

Water heater originally installed in unfinished basement, but owners have remodeled to create a family room and enclosed water heater and furnace in a separate room without providing any additional combustion air. This same scenario could be applied to a garage remodeled into a exercise room or game room for the kids. Both of these example are common and create a definite hazard to the occupants of the dwelling. Lack of adequate combustion air not only inhibits the appliance from working properly, but can (and does) create a health hazard. Appropriately sized combustion air openings would be required to be installed per the code or per the listing of the appliance.

**4. Electrical Wire Connections For Water Heater Replacements.**

- a. Under the provisions of section 117.2 existing non-grounded two-wire connections to electric water heaters may remain in use where the existing branch circuit is sufficient for the electrical rating of the water heater.

**5. Temperature & Pressure Relief Valves.**

- b. A new temperature and pressure relief valve must be installed on all replacement water heaters. The temperature & pressure relief valve is required even if one was not installed on the existing water heater.