



Building & Property Standards

Bulletin 002**Version 090109****Residential Water Heater****Purpose:**

The purpose of this bulletin is to inform permit applicants of submittal and key installation requirements for residential water heaters.

Applicability:

The information presented herein is applicable to all projects covered by the 2003 International Residential Code, particularly 1- and 2-family residential structures. This document may be updated periodically. Please check the department's web page to verify you have the current version of this document.

Submittal Requirements:

- Prior to submitting an application for permit, verify your contractor is properly registered to perform work within the Village of Oak Park by using the Registered Contractor Lookup feature on the following web page: http://www.oak-park.us/Building_and_Property_Standards/ContractorLookup.cfm
Please note that the contractor's registration must be in good standing at the time of application for any permit.
- If a contractor performs the work they must be a state-licensed plumber and the license number must be indicated on the permit application form. The supervising plumber must sign the application form.
- If an owner-occupant performs the work, they must sign an affidavit of intent to live in the premises as his or her bona fide sole and exclusive residence for a period of not less than 6 months after the completion of the plumbing work or, in the case of an owner of a single family residence under construction for his or her occupancy, for a period of not less than 6 months after the completion of construction of the residence.
- A completed Application for Plumbing Permit must be submitted.
- The installation of an electric water heater shall also require the submittal of a separate Application for Electric Permit. If an electric contractor performs the work they must be a state-licensed electrician and the license number must be indicated on the permit application form. The supervising electrician must sign the application form.

Key Installation Requirements:

All work must be installed in compliance with the 2004 Illinois State Plumbing Code and the 2003 International Mechanical Code. The following is a list of key installation requirements. Please refer to the building codes for other requirements not listed herein.

- Direct vent terminations shall be installed in accordance with the manufacturer's written installation instructions.
- Mechanical draft systems shall be installed in accordance with their listing, the manufacturer's written installation instructions and the following requirements:
 - Due to the high potential of a noise nuisance, mechanical draft, including power vented systems shall not discharge to a side yard without a site inspection and pre-approval of the Building Official or designee.
 - Where located adjacent to walkways, the termination of mechanical draft systems shall not be less than 7 feet above the level of the walkway.
 - The vent terminal shall be located not less than 3 feet above any forced air inlet located within 10 feet.
 - The vent terminal shall be located not less than 4 feet below, 4 feet horizontally from or 1 foot above any door, window or gravity air inlet into the building.
 - The vent termination point shall not be located closer than 3 feet to an interior corner formed by two walls perpendicular to each other.
 - The bottom of the vent terminal shall be located at least 12 inches above finished ground level.
 - The vent termination shall not be mounted directly above or within 3 feet horizontally from an oil tank vent or gas meter.
 - Power exhauster terminations shall be located not less than 10 feet from lot lines and adjacent buildings.
 - The discharge shall be directed away from the building.
 - Where the vent termination is located below an adjacent roof structure, the termination point shall be located at least 3 feet from such structure.
 - A vent cap shall be installed to prevent rain from entering the vent system at a vertical termination.
 - The vent termination shall be located at least 3 feet horizontally from any portion of the roof structure.



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- The vent termination shall not be located under a deck or porch.
- Natural draft appliances shall have vents that terminate at least 5 feet above the highest connected appliance outlet.
- Proper ventilation of the water heater is required. Ask your inspector for advice if you are unsure that the proposed location of the water heater will provide sufficient ventilation.
- Vent systems shall be sized, installed and terminated in strict accordance with the water heater manufacturer's written installation instructions. An individual vent for a single appliance shall have a cross-sectional area equal to or greater than the area of the connector to the appliance, but not less than 7 square inches except where the vent is an integral part of a listed and labeled appliance.
- A shut-off valve shall be installed on the cold water line at the water heater.
- Water line connections, to the water heater, must be made with dielectric unions if dissimilar metals are used.
- Heat traps shall be installed on both the inlet and the outlet of the water heater unless the water heater has an integral heat trap or is part of a circulating system.
- With the exception of direct-vent appliances, water heaters shall not be located in or draw combustion air from any of the following rooms or spaces:
 - Sleeping rooms
 - Bathrooms
 - Toilet rooms
 - Storage closets
- Rooms enclosing a fuel-burning water heater shall have a volume not less than 50 cubic feet per 1,000 Btu/h of the appliance. Rooms with smaller volumes shall be provided with openings to connect indoor spaces. Each opening shall have a minimum free area of 1 square inch per 1,000 Btu/h of the total input rating of all gas utilization equipment in the space, but not less than 100 square inches. One opening shall commence within 12 inches of the top and one opening shall commence within 12 inches of the bottom of the enclosure. The minimum dimension of air openings shall be not less than 3 inches. Where the space in which fuel-burning appliances are located does not meet the criterion for indoor air as previously noted, outside combustion air shall be supplied. Refer to the Building Code for further information.
- A gas shut-off valve is required to be installed within the same room and within 6 feet of the water heater.
- Gas shut-off valves shall be prohibited to be located in concealed spaces.
- The contractor shall verify the existing gas service line is sufficient in size to accommodate the replacement water heater plus all other gas utilization appliances connected thereto. For information on sizing of fuel gas lines contact the Building Division.
- The outlet of a pressure relief valve, temperature relief valve or combination thereof, shall:
 - Not be directly connected to the drainage system
 - Be installed in a manner that does not cause personal injury or property damage and that is readily observable by the building occupants
 - Not be trapped
 - Have a discharge pipe diameter not less than the diameter of the relief valve outlet
 - Drain by gravity flow and shall terminate to atmosphere not more than six inches above the floor
 - Not have a valve installed
- The water heater shall have a minimum Thermal Efficiency (E_t) rating of 77%.

Inspection Requirements:

- Only a final inspection of the completed work is required. Please contact the Building Division at 708-358-5430 to schedule an inspection.
- The manufacturer's written installation instructions must be available on site at the time of inspection.
- AS ONLY A FINAL INSPECTION OF THE INSTALLATION IS REQUIRED, IT IS HIGHLY RECOMMENDED THAT APPLICANTS CAREFULLY REVIEW THE REQUIREMENTS OUTLINED ABOVE FOR THE LOCATION OF VENT TERMINALS TO BE INSTALLED AS PART OF THEIR PROJECT PRIOR TO SIGNING ANY CONTRACT FOR THE WORK OR MAKING APPLICATION FOR PERMIT.