

CITY OF EASTLAKE
BUILDING DEPARTMENT
35150 LAKESHORE BLVD., EASTLAKE, OHIO 44095
Ph. No. 440-951-2200 Ext. 1004
Email: buildingdept@eastlakeohio.com
FAX: 440-975-4280

GUIDELINE FOR THE INSTALLATION OF WATER HEATERS

This guideline is being provided to you to inform you of some of the requirements for the installation of water heaters. This is a basic guide, not all of the code requirements are listed or addressed. It is the responsibility of the installer to understand the code requirements and perform the necessary actions for the installation to be code compliant.

Basically there are two types of water heaters, electric or gas. With that, there are two pipes usually at the top of the tank. One is for the hot water and one is for the cold water, with a shut-off valve on the cold water piping. There usually is a flue (exhaust vent or duct) at the top of the tank and is exhausted (ventilated) into a chimney and a sealing material is placed around the flue duct to seal any exhaust gases from re-entering the building. There is no flue for an electric water heater. There is gas piping installed with a shut off valve a dirt leg (3 inch black pipe). A 'tee' fitting is placed at the end of the gas piping and a horizontal nipple is used to connect the gas piping to the gas valve/control box usually located in the front of the tank and the vertical end of the 'tee' there is a short nipple with a cap installed at the end of the nipple. This short nipple and cap is the dirt leg. There is a temperature and pressure valve for the water heater where a discharge pipe is connected, and the length is to be within 6" of the floor. The electric water heater has all the above components except a flue and its power source is electric wiring instead of gas piping.

There are two optional components that may be required. One is a thermal expansion tank and the other is a drain pan with a drain line.

The thermal expansion tank is required only on a closed system. One indicator that a person may have a closed system is a pressure reducing valve has been installed inside the home near the main water shut off valve. If there is no pressure reducing valve installed there is a high probability that the system is not a closed system.

According to the Lake County Water District, the water meters installed include a 2-way valve. Therefore, the system is not considered a closed system and no thermal expansion tank is required. However, it is best that the installer verify if these conditions exist when making a determination if a thermal expansion tank is required or not required.

The other optional component is a drain pan with a drain line. The drain pan is required only if there is a risk that the water heater, if it should leak, would cause damage. This is an open statement since it is difficult at times to assess. If a water heater is in the basement supported by a concrete floor with a floor drain adjacent to the water heater, one could determine that no damage would be sustained and therefore no drain would be required. However, with the same scenario if there was carpeting nearby and the floor drain would not be located to intercept the water prior to the water being absorbed by the carpet, one may want to install a drain pan. This may be an example where the carpet may or may not be damaged, but a nuisance could be created. The homeowner would need to make a decision if they would want a drain pan installed or not.

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An example where a drain pan would be required is if the water heater was located on a first floor over a basement or a second floor where if the water heater would leak the wood floor sheathing would absorb the water causing it to buckle or the water seep thru and saturate the gypsum board ceiling below as would be the case if located on a second floor. Whenever a drain pan is installed the drain pan piping is required to be either discharged into a floor drain or to the outside and not into the sanitary drainage piping system or into a crawl space. The requirement for a drain pan is very broad in nature and each installation has to be assessed on a case by case basis to determine the level and degree of damage that could occur.

A person may choose to have both the options described above installed regardless of the circumstances.

Hopefully, the consumer has a better understanding about water heaters and ultimately the consumer has to do his own due diligence when hiring a contractor to perform the work. The homeowner can install their own water heater provided that they have the capability to perform the work and an understanding of the requirements.

There is a permit required. The base fee for the permit is \$50.00, plus each individual item and clerical cost. This charge is the same for both homeowner and contractor. However, the City requires an additional \$100.00 from the contractor to be deposited to ensure that the contractor schedules a final inspection for the water heater. The City has preference on who pays the deposit, however when the deposit is refunded, the permit holder is refunded the deposit. The refunded amount is \$75.00 and the \$25.00 remaining balance is the clerical fee for the filing of the permit application and the issuance of the permit.

NOTE: Water Heaters:

| <u>Gas</u> | <u>Electric</u> |
|-----------------|-----------------|
| Size: _____ | Size: _____ |
| Location: _____ | Location: _____ |

- Thermal expansion tank required on closed systems
- Drain pan required per location

IMPORTANT NOTICE TO ALL HOMEOWNERS

If you obtain this permit on the behalf of a contractor you are liable for all work including any violations or unfinished work. Additionally, contractors must be currently registered with the City of Eastlake.

