



## Water Service Line

1. The service starts at the water meter and runs to the house.
2. The trench shall be a minimum of 12" deep the entire length of the trench.
3. You will need to use an approved water line such as PVC, Pex, Copper, Etc.
4. The minimum size water line shall be 3/4".
5. A means of controlling Thermal Expansion will be required when connecting to public water. This can be achieved by installing a thermal expansion tank on the cold water side. Follow manufacture specs as to where this device should be installed.
6. If using PVC (make sure to use **Purple** primer), the pipe will need to change over to Pex, Copper, CPVC, etc. 5' outside the house before entering the building. Exception: Can run PVC through the foundation and turn up within 2' of foundation wall and must make the transition to water distribution pipe, which is listed above, at that point.
7. Each dwelling unit shall be provided with an accessible main shutoff valve near the entrance of the water service. Recommended locations are within 5' of the foundation in a valve box or within 3' of the crawl space door. If installing in a basement, the valve can be located at the entrance of the water line inside the basement. If the water pressure exceeds 80 psi you will need to install a Pressure Reducing Valve (PRV) on the system either at the meter in an accessible box or inside the crawlspace or basement.
8. **When to call for an inspection.** Once trench is dug and water service is installed the inspector will need to look at the line before it is covered. Will need to see valve and expansion tank installed. Once everything is inspected, our office will release the water service to the appropriate service provider.

**NC Department of Insurance**  
**Office of the State Fire Marshal - Engineering Division**  
**1202 Mail Service Center, Raleigh, NC 27699-1202**  
**919-647-0000**

**Thermal Expansion Control**

**Code:** 2018 Plumbing Code

**Date:** January 3, 2019

**Section:** 607.3

**Question:**

When a check valve, pressure reducing valve or backflow preventer is installed at the water supply meter, is a thermal expansion device required?

**Answer:**

Yes, an expansion device (tank, valve, etc.) shall be installed in a residential or commercial building when a storage-type water heater is installed in the water distribution system with a check valve, pressure reducing valve or backflow preventer installed in the water supply line. Also, an expansion device shall be installed on a water heater replacement when a check valve, pressure reducing valve or backflow preventer is installed in the water supply line. This requirement for an expansion device shall also apply to a manufactured home. An expansion device is not required for a tankless water heater that is not in a closed loop recirculation system.

**Code Reference:**

**607.3 Thermal expansion control.** Where a storage water heater is supplied with cold water that passes through a check valve, pressure reducing valve or backflow preventer, a thermal expansion tank shall be connected to the water heater cold water supply pipe at a point that is downstream of all check valves, pressure reducing valves and backflow preventers. Thermal expansion tanks shall be sized in accordance with the tank manufacturer's instructions and shall be sized such that the pressure in the water distribution system shall not exceed that required by Section 604.8.

