

**NC Department of Insurance  
Office of the State Fire Marshal - Engineering Division  
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**Thermal Expansion Control**

**Code:** 2012 Plumbing Code  
**Section:** 607.3

**Date:** September 1, 2011

**Question:**

When a check valve or backflow prevention device 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 backflow prevention device installed in the water supply line. Also, an expansion device shall be installed on a water heater replacement when a backflow prevention device is installed in the water supply line. This requirement for an expansion device shall apply to a manufactured home. An expansion device is not required for a tankless water heater.

**Code Reference:**

**607.3.2 Backflow prevention device or check valve.** Where a backflow prevention device, check valve or other device is installed on a water supply system utilizing storage water heating equipment such that thermal expansion causes an increase in pressure, a device for controlling pressure shall be installed.