

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

**Insulation of Thermal Expansion Tanks**

**Code:** 2012 Plumbing Code

**Date:** February 27, 2018

**Sections:** 305.6

**Question:**

Are thermal expansion tanks installed in unheated residential garages required to be insulated?

**Answer:**

Yes. If the water piping in an unheated residential garage is required to be insulated then the thermal expansion tank is also required to be insulated.

**305.6 Freezing.** The top of water pipes, installed below grade outside the building, shall be below the frost line or a minimum of 12 inches (305 mm) below finished grade, whichever is greater. Water pipes installed in a wall exposed to the exterior shall be located on the heated side of the wall insulation. Water piping installed in an unconditioned attic or unconditioned utility room shall have insulation with a minimum R-factor of 6.5 determined at 75°F (24°C) in accordance with ASTM C-177.

**Note:** These provisions are minimum requirements, which have been found suitable for normal weather conditions. Abnormally low temperatures for extended periods may require additional provisions to prevent freezing.

**Keywords:** Water heater, freezing