



# Water Hammer

## Bulletin # 46

Department of Planning and Land Services, June 2007  
Division of Building Safety and Inspection for 2006 I Codes

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### Important Information Regarding Water Hammer

**Effective November 1, 2005**

Plumbing can make many weird noises which can have many causes and; sometimes, they're not easy to isolate and fix.

#### **A Single Bang, Knock, Clunk or Clang**

Such sounds are usually caused by a phenomenon called "water hammer." Water hammer doesn't accompany flowing water. So if your sound occurs while water is running, it isn't water hammer.

Water hammer happens when you turn OFF a water flow suddenly (like dishwasher, a Clothes washer, a toilet or even closing a hand faucet suddenly. Shutting off the flow suddenly sends a pressure or shock wave down the water line through the water shocking the pipes and creating the "hammer" noise. These shock waves travel faster than the speed of sound and can exert very great instantaneous pressures. Over time, water hammer can damage pipes, valves and eventually weaken pipe joints.

Most modern homes have devices called water hammer arrestors (they're called various things such as air chamber, air cushion, water capacitor, etc.). They are filled chambers connected to the plumbing that let the pressure wave dissipate harmlessly into a cushion of air. If your banging has been happening forever you may not have one.

#### **WATER HAMMER (UPC Section 609.10)**

All building water supply systems in which quick-acting valves are installed shall be provided with devices to absorb the hammer caused by high pressure resulting from the quick closing of these valves. The pressure-absorbing devices shall be either air chambers or approved mechanical devices. Water pressure absorbing devices shall be installed as close as possible to quick-acting valves.

**Air Chambers**—Shall be in an accessible place, and each chamber shall be provided with a means of restoring air in the event the chamber becomes waterlogged.

**Mechanical Devices**—When listed mechanical devices are used, the manufacturer's specifications as to location and method of installation shall be followed. Such mechanical devices shall be accessible.

Pierce County requires water hammer arrestors to be installed where quick closing (spring actuated/solenoid type valves) are located. Dishwasher, clothes washer, ice maker etc.