Ask Jon Eakes

Stopping sewage back-up in the basement floor

Last Updated: Thursday, November 10th, 2016, Created: Thursday, February 8th, 2007

INSPECT, MAINTAIN OR INSTALL BACKFLOW DAMPERS UNDER THE BASEMENT FLOOR BEFORE DOING ANY RENOVATION WORK IN A BASEMENT.
Installing a backflow valve between you and the city requires cutting into the concrete floor. With our changing weather, this valve is almost always necssary and generally code required in new construction. Do this before any renovation because it is a major problem and cost if you have to tear up a finished floor to do this later. Water damage is the number one insurance claim cost across Canada and much of that can be stopped with a backflow valve.

WHAT IS A BACKFLOW VALVE?
Many communities have problems of undersized sewage drain systems and in times of heavy rains they can push contaminated wastes back up the drain lines into homes. This could be a minor problem, or it could put several feet of sewage into your basement. I have seen it shooting three feet high like a visit to a hot springs, but it didn't smell so good. Read on for the whole story, and for a new device that works better than all others to stop this.
The solution to this problem is to install a device that allows water out of the house but does not allow water back in, so if the city system does back-up, it stops in the pipes. When this happens, none of your own water can get out, but you don't have a rising lake in the basement despite your efforts to stop it. Some municipalities require the installation of such a backwater valve in new construction; others recommend it for all existing houses. Such was the case of one community near my home where the municipal system worked fine until a massive commercial street developed, covering everything with asphalt and concrete. The end result was that rainwater that used to percolate into the ground was not 100% channeled into undersized sewage lines. It will be years before the pipes under the roads are all changed and in the meantime houses flood regularly.
Traditional back-flow valves have a hanging gate that keeps the valve closed except when your discharge pushes it open. This presents two problems. First the smooth air flow between the sewer system and the vent stack on the top of your house is blocked most of the time, not ideal for a good water flow in the drain. Second if you run a clean-out snake down the line it will certainly catch on that gate.
A company called Mainline Backflow Products has developed, proven and now is distributing the simplest, most complete solution to this problem -- they call it a Fullport Backwater Valve. Full port because unlike traditional one way valves, this on is normally wide open. The gate that shuts out the backflow lies flat on the bottom of the valve. This solves the two major drawbacks of most back flow valves -- the air is always free to circulate and plumbing snakes do not catch on the gate.
If the water rises slowly in the pipe, floaters cause the gate to rise with it -- fully closing before the water can reach the floor level of the basement. If the water comes up the pipe in a surge, the shape of the gate will be catch that flow and shut immediately. It then settles down as the water leaves, requiring no home owner attention. They even make it with a transparent top so if you want to inspect it, you open the access box but you don't even have to open the drain pipe to know what is happening inside.
I like this thing. Check out Mainline Backflow Valve for details.
For an example where it could solve a basement problem, check out this radio broadcast on CJAD.

Keywords:
Drainage, Flood, Renovation, Restoration, Radio, Cjad, Podcast, Backflow, Basement, Drains, Valves, Pipes, Plumbing