

# **Backflow Vales**

A sanitary sewer backflow valve can prevent waste water backups, particularly from a public sewer. But before we get into the details and benefits of a sewer backwater valve, let's explain what backwater is. Sewer backflow is a term used in plumbing for unexpected and unwanted flow of water in reverse direction. Normal plumbing allows wastewater to flow from a home to the Township sanitary sewer, but backflow is the exact opposite. When backflow happens, there can be a serious health risk due to contaminated waste water entering your premises. Backflow occurs when the sanitary sewer system overflows, and sends water back through a sewer pipe into your home or business. Immediate proper clean-up is required to prevent risk of disease and further damage to property. To prevent this problem, many homes would benefit greatly from a sewer backflow valve. It is not a guarantee of avoidance of a future backup event, but the use of a backflow valve can significantly reduce the chance of such occurrence.

## **Causes Of Sewer Backflow & Basement Flooding**

Sanitary sewers work by the force and principal of gravity. So wastewater flows in the direction of the natural slope of the pipe. Sewer backflow can be triggered by a number of different situations, some examples follow:

- Blockages (in either a private or Authority sewer pipe) caused by tree roots, construction mishaps, plumbing system deterioration.
- Cracks in the pipe
- A back-pitched drain system
- Sewer surcharges due to heavy rain or a large snow melt (which is what we have been experiencing the past few years)

Blockages are often caused by accumulation of grease, hair, and any physical obstruction in the pipe. It may even include napkins, diapers, cigarette butts, toilet paper, flushable wipes and more. When your sewer pipe is blocked, wastewater has no chance of flowing in the right direction, hence backflow.

But the most serious and damage causing sewer backflow conditions occur when a public sewer system becomes surcharged.

Because the backflow contains wastewater from many different unsanitary sources (after all, it is a public sewer), it does not only damage properties, but also create severe health hazards. You have no control over the functionality of a sanitary sewer system, but you can prevent backflow by adding a sewer backflow valve device to your own plumbing system.

## **Different Types of Backflow Valve Devices**

There are multiple types of sewer backflow valve devices, but all of them fall into three major categories. only one of which pertains to sewer waste water) backwater. A brief description of the three main methods of backflow prevention follows:

### **The 3 Types Of Sewer Backflow Valve Devices:**

There are three main types of sewer backflow valves. The price range to purchase and install can vary greatly, depending on the valve. And the effectiveness of the valve can likewise vary greatly. Each sewer backflow valve has its own attributes, which must be considered carefully before installation.

1. **Sewer Check Valve:** As sewer valves go, a check valve is the least expensive, and the type most often installed. A check valve does not prevent backwater 100%, so it is ideal for short-term backups lasting less than a full day. Like all sewer valves, once the flapper closes, water use inside the building must be limited. When a public sewer backup recedes, the check valve will automatically allow the waste water from your home to escape, and run out to the public sewer. A check valve should be cleaned once a year to ensure the flap opens and closes fully.

2. **Automatic Flood Gate Valve:** An automatic flood gate valve is the most sophisticated and 100% effective way to stop waste water and the damage associated with it. An automatic flood gate valve works on air pressure, and (as its name implies) is fully automatic. Once closed, its stainless steel knife edge stops backwater 100% over prolonged periods of time. Like all specialized plumbing devices, this device should be installed by none but Licensed Plumbers, with the manufacturer's instructions followed closely.

3. **Manual Sewer Gate Valve:** A manual sewer valve, as its name implies, must be opened and closed manually. That means one must anticipate when a backwater condition will arise. And likewise, one must know when the backwater has receded. While a dependable device, the chance of misuse and backwater damage occurring regardless, make it a device for only very particular situations.

### **How, Where, and When to Install a Sewer Backflow Valve**

A sewer backflow valve can be installed in the main sewer pipe outside of your home or in the basement at the farthest exit point from the home. The device is installed downstream to prevent sewage from flowing into your sewer pipe above the device. Installation depends on the manufacturer's assembly instruction, but usually there are only three different versions: Threaded and Glued method which involves a threaded T device into pipe, Compression Fitting method which relies on pressure washer to seal around pipe, and Bell (hub) and plain end of pipe.

In any of the three cases, an improper installation will lead to waste water leakage, a failure of the device, or both. In addition, many buildings, due to their design, are not a candidate for a sewer valve. Always consult a licensed professional before installing any type of backflow preventer.

### **Three Most Common Installation Errors:**

1. When a house sewer also accepts rain water flow from the roof, or area drains, a sewer backwater valve cannot typically be installed.

2. Installing a sewer backwater valve on the house side of the trap is an improper installation. If the trap plugs leak, or blow off, you will be flooded with waste water.

3. If adequate pitch of the pipe is not available, the valve will neither open or close properly. In addition the house drain may suffer from frequent clogs.