

Eveready Flood Control

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Frequently Asked Questions

1. Why do I flood?

Flooding can be caused by either a problem in your sewer line or an overloaded municipal sewer system. If you flush toilets, use the washing machine or shower and water backs up into the basement on a dry day, or if water comes up during a heavy rain, but does not drain down after the city sewer recedes you probably have an obstruction in your sewer line. This is usually rectified by rodding (cleaning) the sewer line, or in severe cases, repairing the break.

If, however, water comes up during a heavy rain and goes back down with the city sewers, this is typical sewer flooding. This is usually because the city sewer system cannot handle the high volume of water. The water bottlenecks in the city sewer system, and thus into your basement, which acts as reservoir until the flooding subsides. One of the reasons the sewer system cannot handle the rain is because it is simply not large enough to carry the additional rain water. Other reasons are cross connections, too little ground area for natural absorption, or simple too many new homes tied into the system.

2. Why can't I just plug my floor drain or use a stand pipe?

Since the floor drain is the lowest point of entry for sewer back-flow to come into the basement, many people assume that if they simply cap off the drain they will also eliminate the back-flow from coming in. However, your sewer line is made up of many pieces of pipe, and is not designed to withstand pressure. When the pipe fills during back-flow and cannot relieve itself through the capped floor drain, it usually relieves the pressure through the pipe connections under the floor. Most people mistake this for seepage. It is, however, sewer back flow that is leaking from the pipe connections under the floor and filtering through the cement. Under severe conditions it can break the pipe and crack or lift the concrete flooring.

Another option people try is the stand pipe. A stand pipe is a pipe inserted into the floor drain that allows the sewer back up to seek its own level by traveling up the pipe. Much like a plug, the stand pipe also allows pressure in your sewer pipes under your basement. Unlike a plug, if the pressure is great enough, a stand pipe will relieve the water pressure into the home, possibly sparing damage to the sewer pipe and the cement. At this point however, it becomes ineffective as a flood control.

3. Why can't I use just a sump pump?

A sump pump was originally designed to control ground water. The pump is installed at the lowest level of basement floor. It collects the ground water as it accumulates around the house and is usually discharged into the yard. This method is usually effective for controlling seepage.

The problem, however, lies with the use of a sump pump (or ejector pump) for preventing sewer back-up. Many people feel that by installing a pump on the sewer line the pump can keep up with the incoming flood waters. Unfortunately, the flood water that enters the home via the sewer line usually flows into the home with such great pressures and volume; a pump simply cannot keep up.

4. What is a flood control system?

A flood control system's equipment is installed on the building's main sewer line to prevent sewer back flow. It is designed to allow the sewers to flow naturally to the city main during normal conditions and to prevent back pressure from entering the buildings sewer line during periods of heavy rainstorms.

All flood controls should come with a valve to prevent the actual sewer back-flow, a pump to relieve the water that accumulates behind the system, a control panel to monitor the pump/electrical system, a basin to house the system and a cover that allows future access.

It is also important to install the flood control on the outside of the building to prevent the pressure from the city sewer from even reaching your house.

5. What is a balanced valve?

A balanced valve is a valve that is normally " in the balanced" or open position and only closes when there is enough back pressure from the city main. The importance of the valve being open is that it allows water and waste to flow out unrestricted during normal conditions. This eliminates frequent cleaning of the valve facing and unnecessary wear on the equipment. However, the most important feature is that it allows the valve to close when it's needed without the fear of an obstruction holding open the valve during flooding conditions. Since the valve works on the principle of buoyancy ,it works to close and re-open automatically without electricity or human intervention.

6. What is a cast iron check or flapper valve?

A check valve is a valve that has a disc that is in the free hanging closed position. Since this valve is always closed it relies on the force of the waste water exiting the home to force the solid waste past the closed valve. What usually happens is that the water passes through, while the solid waste stops at the valve. Some units will block frequently requiring immediate removal of the obstruction. But, what usually happens is that the water passes through, while the solid waste stops at the valve, forcing it and holding it in the open position.

Unfortunately, many people find this out when they begin to flood.

7. Why is a balanced valve better than a cast iron check valve?

The Eveready Balanced Flood Control System was designed by an engineer who had a basement that flooded. He explored the possibilities of Overhead Sewers and Cast Iron Check Valves.

In his investigation of the Overhead Sewers it was determined that extensive work would be necessary both inside the home, as well as outside of the building. After the Overhead Sewers are installed you will have eliminated the natural drainage of the building that now exists. Any seepage water from around and below the home would have to be mechanically pumped up to the Overhead Sewer. Your home now becomes more vulnerable to seepage problems you may have never experienced before. In the event of a pump failure due to either breakdown or loss of power, there is a possibility of seepage water accumulating in your basement.

At that point in time his only alternative was a Cast Iron Check Valve. He was encouraged that the work could be installed on the outside of the building in one hole. He did, however, find a series of problems related to the Cast Iron Check Valve and its operation. The following is a list of the problems and our

solutions: The primary problem with the Cast Iron Check Valve is that it is a heavy iron disc that is constantly in the closed position. In this closed position, any waste coming from your home has to have enough force behind it to push it through the heavy cast iron flap. What usually happens instead is that the water passes through, but the waste is stopped at the valve. In order to eliminate this problem, Eveready has designed their valve disc, from a lightweight material allowing the valve to stay open and close only during the flooding rains. The valve being open creates no interference with the natural drainage of your sewer system.

The second problem addressed was the cast iron valve not closing due to objects being caught in the valve. If a small object such as a stick or paper should be trapped between the disc and the closing surface, the cast iron valve would be held open allowing water to back up into your basement. In the Eveready Valve the sealing disc is constructed of a heavy acrylic plastic and neoprene sponge rubber. If a small object was present at the valve as it was closing, the sponge rubber would form around the object still allowing the valve to close, thus preventing water from backing up into your home. If any large objects should try and enter the Eveready Flood Control from the city sewer the unit is equipped with a One-Way Backwater strainer. The strainers not only filters the water, holding large objects out, but they also allow waste from the house to flow to the city sewer without any interference from any parts in the flood control.

In designing the Eveready Flood Control System there were also concerns with the continued operation and maintenance of the system. A major defect with the Cast Iron Check Valve is with the cast iron disc trying to seal against the cast iron housing. Because it is a metal to metal closure, leakage will occur with back pressure during a heavy rainstorm. If your pump is working and your power is on, the leakage will usually flow to the pump, thus being pumped back out. This does, however, put an additional strain on your pump, causing frequent pump replacement. Should you lose power or the use of your pump, the water will back up the sewer line. The construction of the disc with neoprene and acrylic forms a greater seal at the housing, so much that the greater the water pressure, the tighter the seal.

When Dino DelVecchio designed the original system in 1955, he had no intentions of going into the flood control business. He was simply trying to prevent his own basement from flooding. After installing his own system, a neighbor asked if he would build one for him. Then came a second and a third and so forth. There are now approximately ten thousand Eveready Flood Control Systems in the Chicago area. Eveready now has flood control systems installed throughout Illinois, Indiana, Missouri, and Colorado. We are currently working on future projects along the eastern seaboard, Louisiana, Oklahoma, Iowa, and Wisconsin.

This is what the U.S. Government's findings were on THE ORIGINAL EVEREADY FLOOD CONTROL BALANCED VALVE DESIGN VS. THE UNBALANCED OR CAST IRON CHECK VALVE:

On the highest authority these approved methods and procedures are recommended by the U.S. War Department Education Manual EM 976 ----- entitled:

HOW TO DESIGN AND INSTALL PLUMBING has this to say of the superiority of a balanced valve, against an unbalanced valve: BALANCED VALVE ----- "The balanced valve is by far the most advisable installation. It is constructed in such a manner as not to interfere with the movement of air in the drainage system. The interior mechanism is constructed of non-corrosive metal. It consists of a seat onto which is fitted a counter-balanced gate. The balanced back-flow valve offers little resistance against the flow of the sewer, which adds to its superiority."

UNBALANCED VALVE ----- "The internal mechanism consists of a non-corrosive seat, fitted with a

swinging gate or flap. This type of valve remains closed until a flow of seepage strikes the gate. The velocity of flow is affected materially by this action, as also is the movement of air through the drainage system. Because a circulation of air is essential in a drainage system, this type of valve should not be used unless a fresh air pipe is provided."

8. Isn't the overhead sewer the only foolproof solution to my flooding problems?

An overhead sewer is designed to prevent sewer water from backing up into the basement by elevating the sewer above the level of the basement floor. The theory behind overhead sewers is that water will seek its own level in the pipes. The water level in the pipes will have to rise all the way to the first floor level in order to back up into the building.

The problems that occur with overhead sewer lines are generally that:

1. The overhead sewer line along the exterior of the building is not water tight causing the pump to become overloaded.
2. The pressure on the discharge or city side of the system exceeds the pressure on the building side causing water to back out of the next lowest gravity opening of the building.

What happens when overhead sewer lines are not sealed? During periods of heavy rains, when water pressure increases inside the overhead sewer line rather than the water rising to seek its own level it leaks out of the pipe and returns to the pump pit in the basement. This causes the pump to once again pump the same water back into the same overhead sewer line that it is leaking out of. As a result the pump is re-circulating the same water over and over. It is only when the back pressure from the city sewers decreases and the sewers start to flow away from the building again that the pump will be able to catch up and pump the water out of the building.

In order to repair the overhead sewer line it would be necessary to replace the sewer line from the point that it leaves the foundation wall all the way to the street with cast iron piping. This will not guarantee that the problem will not re-occur sometime in the future.

What happens when the pressure increases down stream? When the pressure on the down stream side (city sewer side) of an overhead sewer system increases, greater than the pressure of the upstream side (house side), water being discharged by the ejector pump will then back out of the next lowest gravity opening.

This could be:

1. A toilet or shower on the mid level of a split level building.
2. A garage floor drain.
3. Sink, toilet, or shower/tub opening on the first floor level.

Eveready has solved these problems in many building by simply installing a flood control system on the overhead sewer line. The flood control will effectively stop the back pressure from the city main from entering the overhead sewer line.

9. What is a modified overhead sewer or lift station?

A modified overhead sewer or lift station involves cutting the sewer line and having the water from your building run into a pump pit. When the water in the pump pit reaches a certain height the pump will

turn on. The water from your building will then be pumped through piping to a higher elevation than your basement floor and back to the original sewer line.

What contractors will not tell you is that:

- Every drop of water that you use has to be pumped out of your building, rather than flow by natural gravity.
- If the pump should fail during a heavy rain storm, any water that accumulates in your building would not drain until the pump has been replaced.
- If your power should fail at any time, even if it is not raining, you will either need a backup power supply or stop using water in your building.
- Since the pump must turn on every time house water is used, you may need to replace your pump frequently, almost guaranteeing future expenses.

10. Why should my flood control system be installed outside my building?

When your home floods during heavy rain storms water, from the city main pushes back up your sewer line. In order to prevent your building from flooding, you want to stop this back flow of water before it gets to your building.

Installing an Eveready Flood Control system outside the building will prevent any back flow of water from entering all of your buildings sewer pipes. The flood control system will keep the pressure from the city main away from your building and will allow your buildings drainage system to continue flow to the flood control.

Once the flood control device is installed on the building's sewer line, the pressure from the city main will be stopped at the point of the flood control installation. When the flood control valve closes, it will stop water from entering all of the buildings sewer lines.

The pressure exerted on outside sewer connections, drain tile and down spout lines can increase with an inside flood control device installed. If any of the connections should leak from the pressure exerted on them the water will seep under the building.

The water may appear to come from where the wall meets the floor, along the front or sides of the building, or from cracks in the basement floor. You might think it is seepage water because it appears to be clear from being pushed through the dirt. However, the true source of the water is back pressure leaking out of the sewer connections underground.

Eventually the water may reach the pump on the inside of the building. When the pump turns on it will either pump the water out a wall or back into the same sewer that it is leaking from. The water will continue to leak out of the outside sewer until the water in the city main stops backing into your pipes.

11. Why should I choose Eveready Flood Control?

Based in the Chicago suburb of Roselle, Illinois, Eveready Flood Control has been assisting homeowners, municipalities and commercial property owners mitigate their flooding problems for almost fifty years. We are the only flood control company in the Chicago area that has operated under the same name and phone number since 1955. We not only manufacture and install superior flood control products, but our trained service and support staff are just a phone call away.