Public Health
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Emmons County Public Health

Sump Pump Safety

Flooding is the most common disaster in the U.S. and can cause a variety of problems to urban and rural communities. However, by utilizing these suggestions, you can learn how to stay safe before, during and after a flood.

SPRING SEPTIC MAINTENANCE

Every spring, you need to ensure your septic system is working properly:

- **Remove the cover** - Check your tank for mud, rocks, gravel, etc.
- **Flush the system** - Use water from a bucket or hose to flush out the system. Listen for strange noises. The pump should pump smoothly. The pump not running smoothly could signal worn or damaged parts. Contact a plumber to service your pump.
- **Inspect the float** - As water fills the tank, make sure the float travels freely on the float rod.
- **Inspect the discharge pipe** - Before rain or flood conditions occur, make sure the discharge hose is free from mulch, mud, stones, rodent nests, etc. Before using the sump pump system, ensure the discharged water runs away from your foundation.
- **Inspect the check valve** - Make sure your sump pump has a 3/16 relief hole in the pipe between the pump and check valve. This prevents check valve vapor locks and greatly extends the life of your pump.

COMMON SUMP MISTAKES

- Make sure you have a battery backup in case primary power is interrupted. Use a plastic case or build a stand or wall mount to help keep water from frying your battery.
- Test your system regularly; at least annually. Test your system by pouring a 5 gallon bucket of water until the float triggers your pump to activate. This should cause water levels to drop. If it does not, you may need to repair your system or enlist the services of a professional.
- Discharge pipes are utilized in a variety of methods. However, this also means they can be plugged in a variety of different ways as well.

SUMP PUMP TYPES

The two basic sump pump models are the up-right (commonly called a pedestal) and the submersible. Either will work well with proper maintenance. The pedestal pump has the motor on top of the pedestal and the pump at the base, which sits on the bottom of the sump. The motor is not meant to get wet. The pump is turned on and off by a ball float. One advantage of this type of pump is that the on/off switch is visible so the action of the ball float can be easily seen. Submersible pumps are designed to be submerged in water and sit on the bottom of the sump. The on/off switch is attached to the pump and can be either a ball float connected to an internal pressure switch or a sealed, adjustable, mercury-activated float switch. The sealed mercury switch is generally more reliable than the pressure switch. Either type of pump should have a check valve on the water outlet pipe so water doesn't flow back in the sump when the pump shuts off. Water flowing back and forth can cause the pump to turn on and off more frequently than necessary and decrease the life of the pump.

WHAT SIZE PUMP SHOULD I HAVE FOR MY HOUSE?

There is no "correct" size. The horsepower requirement for a house is determined by the area of drainage connected to the sump, the depth to groundwater, the depth of the basement and other factors. A 1/3 hp pump is satisfactory for most houses. When used in similar conditions, a 1/2 hp pump will pump more water and lift it higher than a 1/3 hp pump. Most new sump pumps have a chart or graph in the instructions or on the box that shows the flow versus height of lift for both sizes. In situations where water flow can become rapid, a 1/2 pump may be able to keep up with the flow where a 1/3 pump may not.

CAN YOU PUMP INTO A SEWER DRAIN OR BASEMENT FLOOR DRAIN?

It is illegal for a sump pump to drain in to an onsite septic system. During wet conditions the drain field of the septic system is usually saturated and struggling to handle the normal flow of water from the house. Adding to those water levels can damage the septic system. If you are connected to a public system, the sump should not be pumped into a floor drain. Putting additional water into the sewer system can overload the public system and there may be regulation against pumping into it.

CAN THE AVERAGE PERSON REPLACE A DEFECTIVE SUMP PUMP OR DOES IT REQUIRE SPECIALIZED TOOLS?

Almost all sump pumps come with a list of required tools and directions for installation.

WHERE SHOULD THE SUMP PUMP DRAIN HOSE BE RUN?

Sump water should be discharged at least 20 feet from the house, in such a way that it drains away from the house. It should not be directed onto a neighbor's lot, into window wells, or into a septic system drain field.

SHOULD THE SUMP PUMP BE ON AN ISOLATED ELECTRICAL CIRCUIT?

A standard 15-amp, three-pronged outlet is sufficient to handle a sump pump. But because a sump pump is always in, or near, water it is best to have an outlet with a ground fault interrupter (GFI).

HOW BIG SHOULD A SUMP HOLE BE?

Sump holes should be about 2 feet in diameter. This allows space for the pump and associated piping and to store water between pumping events (about 15-25 gallons). Metal or plastic liners can be used, but plastic is easier to work with. When the sump liner is installed, about 3-4 inches of coarse gravel should be placed in the bottom of the hole. The gravel forms a solid base for the pump, as well as helping to prevent mud and other debris from clogging the pump.

I DON'T HAVE A SUMP IN MY BASEMENT, WHAT ELSE CAN I DO?

You can push the water to the floor drain, but if the water backs up in the floor drain or drains very slowly, a pump will be needed. Small pumps sometimes referred to as "skimmer" pumps are designed to sit on a flat surface and pump when water on the floor is only 1/4 to 1/2 inch deep. They can often be used with a common garden hose. A 50-foot garden hose run out through a basement window will usually carry the water far enough away from the house. You can remove more water by taking the cover off the floor drain and placing the pump in the drain bowl - these pumps are usually small enough to fit in the bowl. In emergencies where electric service is off, these pumps can be powered by a small gasoline generator.

SOURCE: ND Department of Emergency Services, West Bend, ifinishedmybasement.com