

What is the most common reason a sump pump fails? A plumber's insight

If you have a basement in St. Louis, you know the drill. Spring rains come, the ground saturates, and that sump pump in the corner becomes the most important machine in your house. When it works, you barely think about it. When it stops, you are staring at a wet floor and a phone call to a water damage company like Gateway Water & Mold. Over the years, I have pulled dozens of failed pumps out of sump basins, and the pattern is clear. So what is the most common reason a sump pump fails? It is almost always a stuck float switch.

The float switch and the debris that traps it

A sump pump relies on a float switch to tell it when to turn on and off. The float rises with the water, triggers the pump, then drops back down as the water level falls. It is simple and reliable until something gets in the way. The most common culprit is debris. Small rocks, gravel, bits of plastic, or even a stray screw can wedge under the float and prevent it from moving freely. When that happens, the pump either runs nonstop or never starts at all. Both scenarios lead to trouble.

I have seen a single pebble stop a float switch cold. The pump sat silent while water rose past the emergency backup line. By the time the homeowner noticed, the basement had six inches of water. That is the kind of damage that leads to mold remediation and a long cleanup. This is why I always tell homeowners to check the sump pump basin for debris before every wet season. A quick visual check can save thousands in repairs.

But debris is not the only thing that fouls a float switch. Some pumps use a tethered float that swings in an arc. If the basin is too narrow or the pump is placed off-center, the float can hang up on the basin wall. The same thing happens if the pump settles into a pocket of mud or silt. The float loses its range of motion, and the pump fails when you need it most. So when someone asks, "[What is the most common reason a sump pump fails](#)," I point straight at the float switch and the environment around it.

Motor burnout and the role of pump cycling

Another common failure is motor burnout. A sump pump motor is designed to run for short bursts. If the pump cycles on and off too frequently, the motor overheats and eventually seizes. This is called short cycling, and it often happens because the float switch is adjusted wrong or because the basin is too small. Every time the pump starts, it draws a surge of current. Repeated starts generate heat that the motor cannot shed fast enough.

I have replaced submersible pumps that were only two years old because they had been cycling every thirty seconds. The owner thought the pump was working fine, but the constant starting wore out the windings. A good rule of thumb is that a pump should run for at least thirty seconds per cycle. If it runs for ten seconds and stops, something is off. That could be a float that is too short or a check valve that is failing. The check valve keeps water from flowing back into the basin after the pump stops. Without it, the pump recycles the same water over and over, which adds to the wear.

Motor burnout also happens when debris gets past the screen and jams the impeller. The impeller is the spinning part that pushes water out of the pump. If a small stone or a piece of string gets caught in it, the motor tries to turn but cannot. It draws locked-rotor current and heats up fast. By the time the thermal overload trips, the damage is often done. This is especially common in pedestal pumps, where the motor sits above the water line and is more exposed to dust and debris from the basement floor.

Power outages and the frozen discharge line

St. Louis winters can be brutal, and a frozen discharge line is a real risk for anyone with a sump pump. The discharge pipe runs from the pump to the outside of the house. If the pipe is not sloped properly or if it runs through an unheated crawl space, ice can form inside it. When the pump tries to push water past the ice, the motor labors and can burn out. I have seen a frozen discharge line cause the same kind of damage as a clogged impeller.

Power outages are another threat. A storm knocks out the electricity, the sump pump stops, and the basement fills up in minutes. This is where a battery backup system becomes essential. A good battery backup can run a pump for several hours, which is often enough to get through the worst of a storm. Some homeowners also install a water-powered backup pump that runs on city water pressure. Both options are better than waiting for the power to come back while the water rises.

I remember a call in the middle of a July thunderstorm. The power had been out for two hours, and the homeowner had no backup. The sump pump sat dead in the basin while rainwater poured into the basement. By the time we arrived, the water was knee-deep. That job involved extracting the water, drying out the basement, and then doing mold remediation in the drywall. The homeowner had a battery backup installed the next week. It was a hard lesson, but a common one.

The vent hole and check valve details

There is a small detail that many people overlook: the vent hole. Most sump pumps have a tiny hole in the discharge pipe just above the pump. Its job is to break the vacuum so that water

does not siphon back into the basin after the pump stops. If that hole gets clogged with dirt or paint, the pump can air-lock and fail to pump water. I have seen a perfectly good pump get replaced because no one checked the vent hole. Always make sure that hole is clear.

The check valve itself can cause problems too. A check valve that sticks open lets water flow back into the basin, which makes the pump cycle more often. A check valve that sticks shut blocks the flow entirely. I recommend a check valve with a clear plastic body so you can see if it is working. It is a small investment that can prevent a lot of headaches.

Home inspection and prevention

If you are buying a house with a basement, a home inspection should include a look at the sump pump. A good inspector will test the float switch, check the basin for debris, and listen for unusual noises from the motor. They should also verify that the discharge line is clear and that the pump has a battery backup or a secondary system. These checks can catch problems before they become water damage emergencies.

For existing homeowners, I recommend a seasonal routine. In the spring, clean the basin and test the pump by pouring a bucket of water into it. Watch the float rise and make sure the pump turns on and off smoothly. Listen for grinding or rattling sounds that could mean debris in the impeller. In the fall, check the discharge line for any signs of freezing or damage. A little maintenance goes a long way.

So when people ask what is the most common reason a sump pump fails, the answer is almost always a stuck float switch caused by debris. But the bigger lesson is that sump pumps fail for many reasons, and most of them are preventable. A few minutes of inspection each season can save a basement full of water and the mold remediation that follows. In St. Louis, where wet basements are part of life, that kind of prevention is worth its weight in dry carpet.