



## Why Do I Have Sewer Odor In My Home?

So you smell something that seems to be sewer gas, and smell like rotten eggs. This could be caused by a problem with your house plumbing. Properly constructed and maintained plumbing will prevent sewer smells from entering your pipes.

### How Your Plumbing is Supposed to Work

What comes in must go out, and 50% of your homes plumbing purpose is about getting rid of waste. The plumbing system inside your home or any building consists of a network of pipes, vents and traps. The sewer pipe system of branching pipes that carry off liquid and solid wastes is just as important as the actual water supply piping. Each plumbing fixture in your home (toilet, sink, shower, floor drain, etc.) is connected to the sewer piping that carry the wastewater to the municipal sewer system. This system safely removes sewage from your home and provides a critical barrier that is designed to keep sewer gases from entering your home.

### How Vents and Traps Work

Drains seem to work even without properly installed or operating traps and vents. Plenty of do-it-yourselfers do not consider these components, and do not understand their importance.

- Traps hold enough water to block sewer gases from entering the home.
- The trap in each fixture, when properly vented, provides a liquid seal that prevents sewer gases from entering the building.
- Vents allow sewer gases to flow up the vent pipe and exit the system without coming into your home through plumbing fixtures.
- The vent system allows outside air into the drain system to keep vacuums from forming in the drains, which allows proper drainage within the piping.
- Venting allows odors and sewer gases to escape and atmospheric pressure to enter, which prevents pressure from building in the pipe when water fills them.

### **High pressure**

- Without venting, high pressure in the drains may force sewer gas out through traps and toilets.
- You'll probably hear gurgling and bubbling in the fixtures when this occurs.

- You may also smell something similar to a rotten egg odor.

### Low pressure

- Without proper venting, lower pressure in the drains may cause siphoning in the traps whenever you drain fixtures.
- If the traps in any house fixtures (sinks, floor drains, etc.) are dry, sewer gas vents directly into the house.

### I Do Smell Sewer Odor , What Do I Do Now?

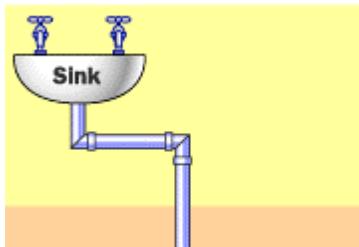
There are a variety of reasons that sewer smells may be entering a home or business. These include:

- A common reason is either the lack of required traps or vents, or their malfunction. Every fixture should have a trap and a vent pipe to keep sewer gases from entering the home. If traps and vent pipes are missing, you may need the help of a plumber to install them immediately.
- A common reason is broken seals around the toilet that allows water to siphon or dry out the traps and thus allowing smells to enter the home. There could be an air leak at the wax ring of the toilet or in the vent pipe. Rotted or damp wood can also cause the smell. Check to see if the toilet is tightly sealed to the floor. Grab the bowl of the toilet and try to slide it from side to side. It should resist a few pounds of pressure. If the toilet rocks from side to side, the wax ring has failed. You may need the help of a plumber to fix this issue.
- A frequent cause for inside odors is a dry trap. Pouring a quart of water into all sinks, showers/tubs and floor drains may correct this problem. All drains to a sewer system have a "P" shaped trap that is usually filled with water. The trap provides a seal to keep out sewer gas. If your basement floor drain is rarely used, water evaporates from the trap over time. Eventually the seal is eliminated, allowing sewer gas (and smell) into your house. The solution is easy: pour water into the drain. Another tip is to place  $\frac{1}{4}$  cup of mineral oil in traps that are more susceptible to drying out, this prolongs the time it takes for the water in the trap to evaporate.

- The trap under the basin may not be holding enough water and is allowing sewer fumes into the room. Inspect your trap and be sure it holds enough water.
- If you have an old "house trap" in your basement or under your crawl space, the trap may be cracked or broken allowing smells to seep through the cracks and into your home.
- If the smell is noticeable mainly around a sink, try flushing a strong cleaner and bleach down the sink's overflow inside the bowl near the rim. When the sink fills to near overflowing, water is routed through an inner chamber to the drain. Debris can collect inside this area, causing odor.
- There may be a leak in one of the vent lines of the plumbing system, or a leak around the base of a toilet or other fixture. Check for loose fittings, corrosion, or holes in vent piping. Also, check the top side of horizontal drain pipes. If the top is rusted, it may never leak liquid, but it will leak sewer gas. Any drain lines made of metallic material may exhibit this problem.
- Another cause of inside odors is a clogged vent. Bird nests, leaves, and pests are some common causes. You may need the help of a plumber to disconnect the vent pipes inside your home and clean your vents all the way through the roof.

### **Examples of Good, Bad and Ugly Plumbing**

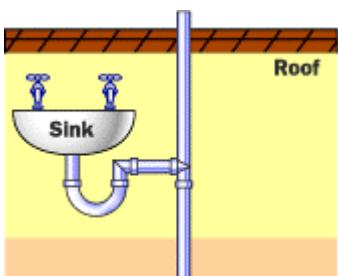
Below is an example of a typical sink without a trap installed.



The problem with this approach is that sewer gases in sanitary sewer lines can flow freely into your home through the sink drain. It is this reason that plumbing codes require a "trap" at every drain opening, as shown here:



The idea is that water gets trapped in the curved area of the piping. This blocks the fumes from the sewer system and keeps them from entering the home. Unfortunately, a P-trap alone does not solve the problem because the sewer gas in sanitary sewer lines can fluctuate in pressure due to the flow volumes within the pipes. The gases can simply bubble through the water in the trap if there is nowhere for the pressure differential to escape. This is why the “**vent pipe**” is necessary, as it allows the pressure to escape, as shown here:



You may have wondered why houses have pipes sticking up out of the roof. Those are the vent pipes that relieve the pressure so that P-traps can do their jobs. As previously mentioned, vents also break vacuums in the piping so water can exit the piping easily.

### **Other Methods of Determining the Cause of Sewer Odors**

The most common method to determine if there are leaks that allow sewer gases in the home is to have a plumber perform what is called a “Smoke Test” on the sewer plumbing. A non-toxic smoke producing device is used and smoke is blown through the piping under a slight amount of pressure. The smoke will follow the path of least resistance, and makes itself visible. This allows a better chance to discover any areas of potential leaks that may not be visible otherwise.

City of Kerrville customers are encouraged to call the Kerrville Water Reclamation Division if they suspect a problem with the city sewer system. To contact the division, please use the following contact numbers:

- Monday through Friday (7:00 am to 4:00 pm) - 830-257-8000 or 830-896-2687
- After working hours or during weekends - **830-257-8181**