

PIPE, FITTINGS & DRAINS

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Drains

Plumbers get more calls to open clogged drains than for any other service. Many such calls could be prevented by greater care in the use of drains. The most-used drain is the one in the kitchen sink and that is the drain most often clogged.

Preventing this situation can be done by carefully watching what is emptied into the sink drain and by the regular use of a safe, biodegradable waste digester. Your plumbing contractor can give you more information on these products.

Sink stoppages are usually caused by liquid fats, emulsified by warm dishwater and carried through the pipes. The water cools as it proceeds to the main sewer and leaves the fatty deposits along the way. A film of grease forms on the pipe wall, then another and another. Coffee grounds and bits of food add to this accumulation layer until the pipe becomes impassable.

Pour excess grease into a tin can and throw it out with the garbage, not down the sink drain. When using a garbage disposal, always let sufficient cold water run to carry the particles down and into the main line to prevent buildup in the smaller waste lines.

In the event of a stoppage, you should have a "plumber's friend," or plunger (a large rubber suction cup with a wooden handle). Cup it tightly over the drain and plunge it vigorously several times. If it is a double drain sink, make sure you seal the other drain, so water will not splash out into the other bowl or onto you. Removing the J-bend on the trap below the fixture can also clean drain piping. First, place adhesive tape around the packing nut or wrap the wrench jaws with a cloth to prevent scratching the metal surface. If plastic piping is in place, do not grip the nuts too tightly with the wrench, as they can crack easily.

Place a bucket directly under the pipe to catch any dripping from the open pipe. Pull out the clogging material with a piece of wire or small hand-turned cable. If you take the trap off, have some new gaskets ready to slip into the joints.

Draining Plumbing in a Vacant House

If your house is to be vacated during cold weather and the heating system turned off, follow this procedure carefully or contact your plumber for assistance.

Shut off the water supply at the main shutoff valve at the street. Then beginning with those on the top floor, open all faucets and leave them open. When water stops running from these faucets, open the cap on the main shut off valve in the basement and drain the remaining water into a pail or tub. Remember that this cap must be closed after the faucets have run dry, or the house water supply will flow from this valve and flood the basement.

Remove all water in the traps under all sinks, toilets, and bathtubs by opening the clean-out plugs at the bottom of traps and draining them into a pail. If no plugs are provided, use a force pump or other method to siphon the water out. Sponge all the water out of the toilet bowl. Clean out all water in the flush tank.

Fill all traps with a non-freezing solution such as mineral oil, windshield washing fluid or RV type anti-freeze.

Drain all hot water tanks. Most water tanks are equipped with a vented tube at the top, which lets air in and allows the water to drain out the faucet at the bottom. Make sure all horizontal pipes drain properly. Air pressure will get rid of trapped water in these pipes, but occasionally the piping may have to be disconnected and drained. To be safe have your plumber check your entire plumbing system.

If your house is heated by hot water or steam, drain the heating pipes and boiler before leaving. Burners and pilots should be completely out and the main water supply turned off at the basement wall or street. Draw off the water for the boiler by opening the draw-off valve at the lowest point in the system.

Open the water supply valve to the boiler so no water will be trapped above it. If you have a hot water system, begin with the highest radiators and open the air valve on each as fast as the water lowers. Every radiator valve must be opened on the one-inch pipe system to release condensation.

Note: When you return home, refill the system before lighting the hot water heater or the boilers.

Caution: Keeping the temperature in a house below 60 degrees Fahrenheit is not good for the house.

Fittings

Fittings (faucets and valves) are used more often than any other part of the plumbing system. They get plenty of use but are built to take it, under normal conditions.

The best modern fittings are all chrome-plated brass and will last a lifetime under everyday use. They clean easily with soap and warm water.

Caution: The metal chromium is easily dissolved in hydrochloric acid and sulfuric acid. Muriatic acid has for years been considered a good tile cleaner, but only where there are nickel-plated plumbing fittings. Where chrome plating is present, clean bathroom tile with warm oxalic acid, never with muriatic or sulfuric acids. Even covering the chromium surfaces with clothes will not prevent the acid fumes from inflicting permanent damage.

Gaining in popularity are polished brass fittings and trim. These will hold up well, as long as certain precautions are observed. Never use any abrasive cleaner on polished brass. This can scratch the protective coating on the brass finish resulting in deterioration or pitting of the brass plating. Also, avoid the use of solvent-based cleaners because they can harm the polished brass finish.

New technologies have brought about the development of improved finishes that withstand more wear. Check the manufacturer's warranty to determine whether or not you have the "new and improved" lifetime warranty finish.

Floor Drains

To clean out a floor drain, remove the strainer or grating covering the opening. Dig out the dirt and grease with a spoon or a stick. Clean out the bend or trap with a hooked wire or coil spring-steel auger. Check to find out whether a removable clean-out plug has been provided to make this job easier.

When the clogging material has been removed from the trap, pour a pail or two of hot water into the drain to wash out any loose material. Check the strainer itself and clean it with hot water and soap in order to open all holes. The floor drain should be checked regularly, especially one that is not often used, since water in the trap may evaporate. This would allow sewer gases to enter the room. Pour a pail of water into the drain periodically in order to make sure of a proper water seal.

Frozen Pipes

Frozen plumbing pipes, although inconvenient, do not constitute a calamity. The calamity may come if the pipes are thawed with a blow torch and if the open flame or the torch is allowed to come too close to combustible material, such as insulation, wooden joists or flooring. Another danger from the use of a torch arises when both ends of a pipe are clogged with ice and when the heat is applied in the center. The application of the heat of the torch at the center of the pipe is likely to cause the water to flash into steam. Potentially this could cause an explosion with disastrous results for the user of the torch. It is far better to adopt the slower and more conservative procedure of melting ice by the use of blow dryer or heat gun.

Tips to prevent frozen pipes include:

Insulating pipes most susceptible to freezing (those in unheated areas of the home and near outer walls). There are products designed specifically for this purpose.

Make certain to disconnect garden hoses and drain and shut off outside faucets during the winter.

When it is very cold outside let the hot and cold faucets drip overnight. This water flow from at least one faucet can help keep pipes from freezing.

You can open cabinet doors under sinks on exterior walls to allow warm air from the house to circulate and help keep sink pipes from freezing.

Leaky Pipes

If you find a leak in your plumbing system, shut off the water supply and call your plumbing contractor immediately. Water supply systems are under high pressure. Temporary repairs are only temporary and wrapping the pipe usually fails. Leaks must have immediate attention since they can quickly progress into a serious break.

Noises in the Plumbing System

In designing the plumbing system for a new house, a plumbing contractor will endeavor to make it as noiseless as possible. Manufacturers of plumbing fixtures make every effort to reduce the noise connected with the operation of their equipment. Contractors have also been very successful in eliminating much of the noise formerly associated with plumbing systems.

Because so much of the noise is due to water traveling at a high velocity, it follows that whatever can be done to reduce the velocity of the water will correspondingly reduce the noise in the system. It is for this reason that it is so important not to skimp on the size of the water supply piping. Larger pipes will not only provide an adequate supply of water but will reduce noise.

There are three general types of noises found in some older plumbing systems:

Water Hammer

Whistling

Chattering

Water hammer is the thump in the piping heard when faucets or valves are turned off abruptly. There is no excuse for water hammer. It can usually be eliminated by the installation of an air chamber or short length of pipe in the wall where each supply pipe enters a plumbing fixture.

In some cases, however, the ordinary type of air chamber will not prevent water hammer. In such cases, special devices known as shock arrestors should be installed on the main line near the meter or as close as possible to the cause of the noise.

Sometimes water hammer is due not to the plumbing in the house in which it is heard but to a condition outside of the house, either along the water main or in a neighboring house. In such cases, skillful detective work by an experienced plumber is necessary to determine the source of the trouble and to plan corrective methods.

Water hammer should not be permitted to go on indefinitely. The noise is only an audible symptom of what is going on in the piping. The piping is being subjected to the wear and tear of a multitude of shock waves. The result will be leaking in piping, tanks or fixtures unless the condition is corrected.

Chattering in the piping may be caused by loose pipes, by pipes rubbing against a metal projection, by worn faucet washers or looseness of other inside parts. A plumber will be able to locate the offending part and repair it.

Whistling is caused by the speed of water flowing through piping, which is usually too small. A pressure-reducing valve will help, as will a general straightening out of the plumbing system. Whistling is most common at bends and tees in pipes.

Odors in the Plumbing System

The well-designed and correctly installed plumbing system is odorless. Odors are most likely to arise from leaks in the waste or vent piping, or from traps which have lost their water seal. There are many opportunities for odors to result from incorrectly installed systems, particularly if not properly vented.

Unusual odors should never be ignored. Such odors are often an indication that sewer gas is present. Sewer gas, while not always deadly, is noxious and capable of causing headaches and other minor illnesses. Sewer gas is foul smelling air and should be prevented from entering the house.

If it is suspected that sewer gas is entering through a leak in the piping, a plumber will subject the system to a test either by means of smoke, water or oil of peppermint. The test will indicate the location of the leak.

In order to explain how sewer gas may enter a house through a plumbing fixture, it is necessary to clarify the function of traps and vents.

Every plumbing fixture is the terminus of the municipal water supply system and the beginning of the municipal sewerage system. The faucets control the water supply. The traps and vents control the sewer air. They do so by a very simple method. Sewer air will not penetrate a water barrier. Therefore, a device is employed which keeps several inches of water between the house air and the sewer air. This is the trap, which is plainly visible under such plumbing fixtures as sinks. It is built into toilets. In the case of bathtubs and showers, it is usually concealed in the floor or basement.

A trap would lose its water seal by siphonic action every time a fixture is used unless the air on the sewer side is balanced with the air on the house side. This is the function of the vents. Occasionally, due to changes in atmospheric conditions, a correctly vented trap will lose its seal. Usually, when a trap loses its seal, it is due either to incorrect design of the vents, absence of vents or to evaporation of the water in the trap. Traps under fixtures that are used infrequently should be filled with water from time to time to ensure an adequate trap seal.

Shut Off Water: Where and How to

Knowing where and how to shut off water to the entire house (or any part of it) can be very important in an emergency. That's why it is extremely important for all members of the family to know where the valves are and in which direction, they should be turned to shut off the water.

One way to identify the valves is to have a tag on each valve indicating its function, that is, which fixtures or group of fixtures it controls. Valve identifying tags may be obtained from plumbing dealers. Many plumbers are glad to offer a valve tagging service to their customers or prospective customers.

Another method of identification is by means of valve chart. Because this is somewhat more elaborate, it is usually used only for houses with several bathrooms. A drawing is made of basement piping with all the valves indicated. The valves are numbered on the chart, and then tags with corresponding numbers are placed on the valves. Another idea, which aids in identification, is to paint the pipes a distinctive color.

Obviously, the most important valve in the house is the main shut-off valve for the entire plumbing system. This valve, generally located on the house side of the water meter, usually has a handle like a wheel. If it has not been used for many years, it may require a wrench to turn it. Because the easy operation of this valve in case of an emergency is so important, it is advisable to place a few drops of oil around the valve handle once or twice a year. This will prevent the sticking action of corrosion. The shut-off valve may be the ground-key type with a small hole bored in its side for draining the pipes after the water is shut off, or it may be a compression stop with a cap nut covering the drain opening. In either case, close the opening before turning the water off. Unless this is done, water will spurt with force.

Where no means has been provided for shutting off a drain opening, drive a small wooden peg into it until the pressure is relieved by draining the piping that is exposed.

In addition to the main shut-off valve at the meter, the well-plumbed house has individual shut-off valves on the branch lines leading to individual fixtures, groups of fixtures or equipment such as water heaters, water softeners, automatic washers, etc.

Many contractors, when installing plumbing fixtures, provide separate shut-off valves or stops for each individual fixture. These will be found on the supply lines below the fixture. These individual stops are a great convenience to regulate water flow in case of repairs as well as emergencies.

Sweating Pipes

"Sweating" pipes and plumbing fixtures in summertime or during seasonal changes are not a sign of faulty plumbing. Due to condensation of water vapor in the air, beads of moisture will form in warm weather on any exposed pipes and fixtures containing cold water.

Normally, when not in use, the water and fixture will warm rapidly to room temperature and the condensation will stop. When a toilet tank or other fixture continues to "sweat" for hours after it has been used, it is a sign that cold water is continuing to flow through it, possibly due to an improper adjustment of the tank valve or a leak. In this case, a plumber should be called for checking and servicing. Sweating pipes can be wrapped with an insulation material, which prevents condensation and formation of moisture.

Water Stains or Leaking from The Ceiling

There are several reasons for water to come through a ceiling and not all of them are connected with your plumbing system:

If water is pouring through your ceiling during a heavy rain storm the problem is generally with either your roof or a blocked gutter.

Ice dams (water freezing and getting under the roof) during winter can cause water spotting and leaks once the ice starts to melt.

Snow can blow in through a ridge vent during a heavy snowstorm. Once the snow melts it will cause water spots and leaks.

Water coming through a ceiling after a shower can be the result of a plumbing leak, but more frequently is the result of missing caulk—either in the tile or at the area where the tile meets the shower. Check the caulking carefully for open spaces and areas before calling a contractor.

If the tile work is bad and cannot be caulked, you may also want to replace the faucet (inside the wall) with a pressure balanced unit for safety before covering up the old faucet with expensive tile work. A plumbing contractor can provide you with assistance.