Frozen Pipes:
How to prevent freezing, and thaw pipes safely

Winter 2014

Willis

Even if you have not experienced frozen pipes in the past, sudden cold snaps can occur and may cause pipes to freeze up or burst. This guide will help you identify systems that are potentially at risk, how to protect them, and how to thaw them should they freeze.

Pipes that are commonly subject to freezing include:

- Garden hose connections and outdoor hose bibs
- Water supply lines in unheated or minimally heated spaces, including:
  - Basements
  - Crawl spaces
  - Attics
  - Garages
  - Maintenance Buildings
  - Temporary/modular buildings
- Irrigation or lawn sprinkler lines
- Supply lines to pools, spas, ponds, and fountains.
- Pipes run along exterior walls that are not well insulated.

There are steps that can be taken to prepare for freezing pipe. The most important thing you can do to prepare is identify the main water shut-off valve(s) for the building and make others aware of it in case you are not there.

Prevent Frozen Pipes:

- Identify pipes that are potentially exposed to freezing temperatures. Remember that heated areas that are drafty can have pipes freeze up due to the draft. (This is the common cause of pipe freeze ups in basements)
- Drain water supply lines for systems that can be shut down.
- Heat trace or insulate supply lines that must remain operational.
- For systems that can't be isolated or heat traced, allow a small flow to continuously run through the system (the flowing water should prevent freeze-up. Be careful of where the water discharges so as not to create another problem).
- Avoid using anti-freeze in systems or fixtures. If this is the only viable option, use care in choosing the correct anti-freeze. (Avoid automotive type solutions. Consider using recreational vehicle (RV) type antifreezes. Recreational vehicle type antifreezes are food grade and acceptable for use in potable systems. Check with your local health department before using.). Be aware of the health and environmental issues with any anti-freeze selection.
- Close inside shut-off valves to hose bibs. Open the outside valve to drain water. Leave outside valves open to allow condensation to drain and reduce the risk of water buildup inside the valve housing. Cover hose bibs that can't be shut-off inside the building. Insulating covers are available at most hardware stores. An alternative is to wrap the hose bib with a towel and cover the towel with plastic.

Frozen Pipes: How to prevent freezing, and thaw pipes safely

- Detach hoses from outdoor hose bibs. Water in the hose will freeze first, and can cause a freeze up in the hose bib and possible failure. Do this even if the hose bib is a freeze-type.
- Drains and traps that are in concealed spaces or along exterior walls may be subjected to freezing. These pipes can be protected by heat-tracing or by pouring a few ounces of alcohol into the drain to lower the freezing point. RV type antifreeze can also be used subject to the approval of local authorities. Never use automotive type antifreeze.
- Set thermostats to maintain building temperatures of 50F or higher throughout the building. Remember that the temperatures along exterior walls, enclosed docks, etc. will be several degrees colder that interior areas of buildings.
- Open doors to closets, cabinets, etc. that contain water supply or waste lines to prevent freezing. The exception to this is the doors to dry pipe sprinkler system rooms — these doors should remain closed and the rooms heated.
- Keep all doors (including dock and garage doors) closed. Keeping these doors closed even if there are no pipes in the areas protected by these doors can help protect other areas of the building by creating a buffer.

Thaw Frozen Pipes Safely

- If a pipe bursts, shut off the main water supply valve until you can isolate the leak.
- If you operate a fixture (sink, toilet, etc.) and no water flows, suspect a frozen pipe. Check the supply line to ensure that no supply valves are shut.
- If a pipe has frozen, leave a fixture (sink, hose bib, etc.) on as you thaw the pipe. As the ice begins to melt, water will flow. The flowing water will help thaw the ice plug faster.
- Apply heat to the frozen section of pipe. Use an electric heat gun, hair dryer, heating pad, or space heater (no open flames and keep combustible materials away from the heater). All electrical devices should be kept out of contact with water (puddles or water spraying from leaks) — use GFCI outlets or pigtails to provide additional protection. An alternative is to wrap the pipes with towels that have been soaked in hot water. Do not use open flame equipment (torches, fuel fired heaters – kerosene, propane, etc.) to thaw pipes.
- As the pipe begins to thaw, check for leaks. It is not uncommon for the ice plug to seal the leak.
- Check other supply lines and fixtures to determine the extent of piping freeze-ups.
- If you cannot locate the problem, contact a licensed plumber to address the issue.

Willis