



Frozen Water Pipes

The winter season is here and already Western Michigan has experienced ice, snow, and freezing temperatures. The 3-month weather forecasts all predict more of the same with below average temperatures through March.

Many people think frozen pipes are a limited problem and will affect only a few homes and offices each year. Actually, insurance industry studies have found the amount of water damage generated by frozen and broken water pipes ranks second, only behind hurricanes, in the number of homes damaged and the amount of insurance claim costs in the U.S. each year. This means an average of over 250,000 homes each year will suffer damage from frozen and burst pipes. The damage is estimated to be in the \$400-500 million each year.

Before the next arctic wave hits, let's review the problems associated with frozen water damage, discuss ways to prevent frozen pipes and how to deal with the problem if it does occur.

The root of the problem is the nature of water itself. Almost every material in the universe shrinks or contracts in size as its temperature is lowered. Water contracts in similar manner as the temperature drops, but only to 32° degrees Fahrenheit. Below that temperature, water has a unique property: it actually begins expanding. Imagine a sealed pipe filled with water as the temperature drops. Both the pipe and the water contract down to 32° degrees with no problem. However, at 32° degrees and below, the pipe is still shrinking in size while the water starts growing in size. With faucets closed, the pipes cannot release the increasing pressure of the frozen water. Intense pressure develops and increases until the pipe splits or tears to release the pressure. Both plastic (PVC) pipes and copper pipes may burst. The water is still frozen, however, and will not begin dripping, leaking, or spraying until it thaws back into a liquid. When the thawing does occur, the water escapes the pipe and begins water damage. One 1/8" split in a pipe can release as much as 250 gallons of water in one day. This water soaks into walls and insulation, ceilings, floors, carpeting and cushion, rugs, furniture, HVAC systems, electrical systems, contents, etc. Without quick action to shut off the water and to properly remediate the damage, the ensuing damage will rapidly progress with higher and higher claim costs.

The best approach to the whole threat of frozen water damage would be prevention. The pipes most susceptible to freezing are usually those that are near outer walls, in crawl spaces, or in the attic. All of these pipes should be properly insulated and even wrapped with approved heat tape where necessary. Outside leaks of air should be sealed. Garden hoses should be disconnected and where possible, pipes leading to outside pipes should be shut off and drained. Open doors to interior cabinets containing water pipes in order to circulate warm air inside them. As a hard freeze approaches, open both hot and cold faucets to a trickle to help prevent the water from freezing. *(The Water Department won't give you a break for the increased water usage, but you may end up saving thousands of dollars in potential damage claims.)* Keep the thermostat set a little higher (70 degrees minimum) during hard freezes and threats of power outages.

Let's not forget the possibility for frozen pipes while we are away on trips. Set the thermostat above 55 degrees for a buffer margin. It is always a good idea to shut off the water to the house when you leave. *(If you don't know where the main shut off valve is, find it tonight!).* For extended periods of time, drain the system. Make arrangements for a friend or neighbor to check on the house while you are away.

One way many people discover a frozen pipe is finding there is no water flowing from a faucet when opened. If the section frozen is obvious and accessible, some individuals may try to thaw it themselves. First, remember to

be prepared to get sprayed if the pipe has already split but not spraying the water until thawed. Also be aware for possible electrical hazards if the water reaches electrical wiring or outlets. Although some plumbers may utilize torches to thaw a frozen pipe, homeowners should not use any device hotter than a hair dryer (*and watch out for spraying water to create an electrical hazard!*) Most homeowners merely prefer to call their plumber to handle the whole operation, just in case. Unfortunately, many people are unaware the pipe is frozen until it splits or bursts, thaws, and then starts spraying water like a fire hydrant. If the pipe is hidden inside a wall, inside a cabinet, in a crawlspace or attic, or between floors, the exact location may be harder to detect and repair, providing more time for the damage to develop. Once the leak is detected, shut off the nearest valve, call the plumber to repair the pipe, and call **ACTION RESTORATION** to mitigate the damage. Typical mitigation services for a frozen and leaking or burst water pipe include: protection of structure and contents from further water damage; extraction of the water; removal of the residue; deodorization and steps to prevent mold growth; and set up of drying equipment (*air movers, dehumidifiers, wall cavity drying units, etc.*) Where insulation inside walls, ceilings, and crawlspaces has gotten wet, the cavity must be opened to remove it and allow air movement for drying. Non salvable materials and contents must be removed. Salvable carpet, pad, and rugs need to be cleaned and dried to prevent further damage and odor. Where electricity has been compromised, portable or supplemental power generators may be necessary. Additional heat may also be needed. Once the plumber has repaired the pipes and **ACTION RESTORATION'S** mitigation crews have stabilized the situation, **ACTION RESTORATION** repair crews can assist in the assessment and repair of the damage to return the property back to a safe and dry pre-loss condition.

Lawyer and Plumber Convention (JOKE)

There just happened to be a lawyer convention and a plumber convention in Oregon at the same time. There was a party of three plumbers and three lawyers leaving California and taking the train to the conventions. As they were standing in line for tickets, the lawyers noticed that the plumbers only bought one ticket. The lawyers bought their three tickets and boarded the train but watched the plumbers to see how they were going to get by with only one ticket.

After boarding, the three plumbers squeezed into a restroom. Finally the porter came by and knocked on the door as he said, "Ticket please". The door cracked open and an arm reached out and gave the porter the ticket. After the conventions, the lawyers decided to do the same thing so they only purchased one ticket. However they noticed the plumbers didn't purchase any tickets at all. They weren't too concerned though because -hey- they were saving some bucks right? Well, they all boarded the train and the lawyers packed into a tiny restroom. After a few minutes, one of the plumbers came by and knocked on the door saying, "Ticket please."

Get a Better Idea:

In pursuit of "a motor car for the great multitude," Henry Ford searched for ways to lower his manufacturing costs. He had the carburetor manufacturers package carburetors in special crates, the wood from which could serve as floor boards in Ford's car. This action led to savings for Ford's customer.

Look around. How can you take what would otherwise be discarded and transform it into something useful?