



# SAFETY BRIEF



## PREVENTING AND MANAGING PIPE FREEZE-UPS

You can break down the key control points with frozen pipes into three time periods: Prevention, Reaction, and Remediation.

### PREVENTION

This is the most efficient and effective point to address frozen pipe potential. For many of us in the north, freezing temperatures are expected every winter. The question is just a matter of how cold it will get and how long it will stay cold. If you are located in areas less prone to freezing, your exposure can actually be worse since your building may not be suited for sudden freezing temperatures. So what is your exposure to pipe freeze-ups?

- Failure of a heating system can allow a building to freeze causing catastrophic water damage over a weekend
- A dry pipe sprinkler system in an unheated building can freeze if low point drains were not properly drained after the most recent trip test or accidental system trip; or if piping was not graded properly to allow it to drain.
- Unusually cold weather can allow plumbing components to freeze due to missing insulation; or a slight draft due to an opening in the building siding that allows cold air to enter and freeze pipes in unheated areas such as above drop tile ceilings
- Exterior water valves may not be the "freeze proof" type or have adequate insulation.

You may not be able to anticipate all potential freeze-ups but there may be indications. Have you had some work done where insulation wasn't properly reinstalled? Have you had some minor nuisance freeze ups that did not result in a pipe break? Some of the key issues to consider to identify potential freeze-ups include:

- Consider how prone your building is to freeze up due to a problem with the heating system. If your building is not occupied over the weekend and is heated by a single furnace, failure of that furnace can allow the temperature to drop below freezing.
- Was your building constructed prior to 1960? Older buildings are much more prone to freeze-ups due to lack of insulation.
- Do you rely on process heat for some parts of your building? If manufacturing is down for a period of time, the building heating system may not be adequate during a deep freeze.

## The Following are Methods to Prevent Pipe Freeze-ups:

- Infrared Screening- Similar to a standard heat audit, infrared screening can identify gaps in insulation or loose or missing siding that can allow cold air to enter. Besides saving money on your heating bill, such a survey can help you focus on areas that can freeze during a drop in temperature.
- Low Temperature Alarms- One of the most effective prevention methods is low temperature alarm devices tied to your central station alarm system. Once the temperature drops below a pre-determined temperature, the alarm activates and your central station alarm company is immediately notified. Many alarm systems include low temperature devices where there is a dry pipe valve enclosure in an otherwise unheated area.
- Heat Tape- Water pipes prone to freezing can be fitted with heat tape that is thermostatically controlled to activate below a pre-determined temperature. Heat tape can be effective in unheated areas such as crawl spaces. Heat tape should not be used on sprinkler system piping. If you have concerns about wet pipe sprinkler systems freezing, you should discuss these concerns with your sprinkler system contractor.
- Thermostat Temperatures- Maintaining your thermostats at a reasonable temperature is an important control method. Keep in mind that the thermostat is located in heated areas of a building. Areas above the ceiling tiles can be much colder. Buildings should be heated to at least 55 degrees.
- Water Flow Monitoring and Shut off Systems- Technology has advanced to systems that "learn" your water usage behaviors and can shut off water when it senses a water leak. This technology is becoming much more common in high end and SMART homes. Although the heating system can still freeze, subsequent water damage is minimized with this technology.
- Leak Detection- Such devices tied to a central station alarm allow for rapid notification of a water leak, allowing your personnel to take action to address the leak before major damage occurs.

## REACTION

If you are fortunate enough to find a pipe freeze up, you may be able to prevent a catastrophic failure and resulting water damage. Some of the steps you can do during unusually low temperatures include:

- Double check low point drains to assure that water has not accumulated in dry pipe sprinkler systems
- Keep your thermostats slightly higher than normal to allow additional heat to travel to unheated areas above ceiling tiles
- If you have ceiling areas you know may be a problem, open some of the ceiling tiles to allow some heat to pass. This also applies to restroom cabinet doors that can be left open.
- If you find frozen pipes, don't use open flame devices such as paint strippers. Use electric units or even hair dryers to gradually melt freeze ups.
- Allow water to drip. Flowing water is much less prone to freeze ups due to the temperature of the water.

## REMEDIATION

This is the most inefficient method of control since damage is already done. The most important first step is to shut down water sources for leaking systems. If this includes sprinkler systems, notifying the insurance carrier is important. The carrier or USI can advise you on short term actions to take if your sprinkler system is shut down such as implementing a fire watch.

Immediate steps should be taken to reduce the scope of damage. This can include diverting or removing water to moving stock on pallets or out of impacted areas. Your Business Continuity Plan should include vendors you can call to help mitigate damage. Many carriers have special relationships with particular vendors with preferential rates.

## CONCLUSION

Prevention and planning are the most effective and efficient means to address frozen pipes loss exposures. Integrating pipe freeze ups into your Business Continuity Plan can help you think through your exposure to loss and identify methods to prevent a freeze up incident. USI can assist you in evaluating your exposure and developing a plan.

If you have any questions, please contact a member of USI's Risk Control Team.