

PIPE FREEZE - REDUCING THE LIKELIHOOD

Cold weather brings on the risk of pipes freezing, which could lead to significant property damage and costly repairs among other business interruptions. There are several things building owners and property managers can do to reduce the likelihood of pipe freeze in their buildings. This bulletin provides best practices to help reduce the risk of domestic and fire protection pipe freeze.

BEST PRACTICES

- **Heat** – Maintain heating systems in buildings to normal levels in order to avoid pipe freeze. For fire sprinkler systems, the National Fire Protection Association (NFPA) recommends a minimum building temperature of 40 degrees Fahrenheit and to provide supplemental heat sources if needed. Talk to your Facilities Department, HVAC contractor and sprinkler contractor for specific heating requirements in your buildings.
- **Insulation & Pipe Heating** – Insulate pipes, and when providing heat tracing for pipes, assure that it is approved by a Nationally Recognized Testing Laboratory (NRTL) such as FM or UL.
- **Emergency Power** – To prevent pipes from freezing and to provide continuous power to pipe specific heat tracing, ensure emergency power supplies are operational, are exercised and tested under full load regularly, and supply power to areas that require heat.
- **Shut Off & Drain** – In areas where you know there is an issue or no heat, shut off water and drain water from all systems.
- **Sensors** – Work with current fire and security alarm providers to determine if temperature and water sensors can be added to areas where problems have been known to occur or in main supply areas.
- **Valves** – Know, and provide signage for the location of all domestic and fire protection water shut off valves so staff can quickly shut off water and minimize water damage in the event of a pipe break.
- **Concealed Spaces / Attics / Crawl Spaces** – Identify all of these locations and assess for pipes and their vulnerability to freezing.
- **Windows** – Conduct window checks at the end of each day, and send communications to staff to ensure windows are closed tightly when severe cold weather is forecasted.
- **Preventative Maintenance (PM)** – Add these, and other checks applicable to your specific operations, to the PM program to ensure these items are reviewed and addressed if needed.
- **Fire Protection Rooms** – Ensure all windows, doors and venting louvers present in these areas function, are closed and in good condition. Ensure heating sources are functioning as intended as well.

- Wet Sprinkler Systems – Ensure heat for wet pipe sprinkler piping areas is sufficient or approved supplemental heating is provided.
- Dry Sprinkler Systems – Ensure low points and drains in dry sprinkler systems are drained of water and condensation.
- Fire Pumps – Check test header pipes to ensure all water has been drained from the test header.
- Unoccupied and Vacant Buildings – Apply these principles to buildings that are not currently being used on a regular basis to minimize the chance of pipe breaks. Perform routine self-inspections to check on the condition of the building and heating systems since people may not be present at these locations for varying intervals of time. Consider the installation of water and temperature sensors in critical areas of the building to provide alerts of potential problems.
- Training – Provide regular training to the Buildings & Grounds staff, and consider for all employees, on all of the above prior to times of severe cold.

SUMMARY

As cold weather approaches, it's important for building owners and property managers to take precautionary measures to prevent pipe freeze.

At a minimum:

- Ensure areas are heated to at least 40 degrees Fahrenheit and as specified by a sprinkler contractor for main sprinkler rooms (NFPA 25).
- Insulate pipes that may be exposed to freezing.
- Provide NRTL approved heat tracing for pipes.
- Drain water and condensation from any pipes that don't need to have water.

REFERENCES

- National Fire Protection Association. (2020). NFPA 25: Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems. Retrieved from <https://catalog.nfpa.org/NFPA-25-Standard-for-the-Inspection-Testing-and-Maintenance-of-Water-Based-Fire-Protection-Systems-P1163.aspx>