

## WINTER WEATHER: BUILDING PREPARATION BEST PRACTICES

As the season changes and cold weather approaches, members should address key maintenance responsibilities and take precautions now to reduce the chance of fire protection impairment or property loss at your facilities. Cold-weather losses can be greatly reduced with adequate preparation, monitoring of weather conditions, and having an emergency response plan. In addition to freezing of sprinkler or domestic water piping, low temperatures can damage boilers, compressors, steam piping, and HVAC equipment.

### Structure & Building Precautions

- ❑ Survey the facility for potential cold spots such as loading docks and carports, garages, attics, crawl spaces, and eaves or overhangs. Where necessary, add insulation. Ensure doors and windows are properly sealed to prevent freezing of pipes in the area.
- ❑ Inspect and service systems supplying heat to fire pump houses, dry-pipe valve closets, and water tanks before the cold season.
- ❑ Check roof drains and gutters for plugs to prevent backup and ponding of water or ice. Trim tree branches over power lines to prevent ice accumulation, which could damage the power feeds.
- ❑ Have boilers and heating systems inspected annually by a qualified professional in advance of the heating season.
- ❑ Winterize buildings that will be vacant for the winter season such as field houses, concession stands, and pool houses. Winterizing plumbing pipes is a process that prepares a facility's plumbing for freezing temperatures that can cause leaks and breaks in the buildings. When water freezes, it expands. This expansion produces pressure within pipes, which causes damage. The winterizing process involves emptying the water heater, draining all water from the pipes, and filling fixtures with an antifreeze solution.
  - Shut off the main water valve, and then turn off the water pump and the water heater. It will protect heating elements in the water heater when there is no water inside the tank.
  - Open all drain valves and all taps. Use a checklist so you are sure all taps are open. A closed tap could create a vacuum that will hold water inside of pipes. All valves and taps should remain open throughout the winter.
  - Using air compressors, blow excess water out of the pipes.
  - Open the drain valve in your hot water tank and let it discharge until it is empty. Be careful, because sometimes hot water tanks will not have floor drains, and you will need to connect a garden hose to it.
  - Flush toilets to remove as much water as you can from the tanks and the toilet bowls. If all water cannot be removed, add antifreeze to prevent any water from freezing and cracking the toilet.
  - Check all sink and tub drains that could have drain traps. Add some antifreeze to each one of them to prevent water from freezing and cracking in the traps.
- ❑ Check sprinkler or irrigation systems. Make sure you have turned everything off, fully drained the system, and used compressed air to blow out trapped water. Check valve pits and other enclosures.
- ❑ Check that emergency generators are working properly and assure an adequate fuel supply in case of a power outage to maintain heat in the affected building.

## Fire-Protection Systems & Equipment

- Maintain a minimum temperature of 40° F in building areas susceptible to freezing, wet pipe sprinkler systems, fire-pump houses, and fire sprinkler dry-valve enclosures.
- Inspect, test, and maintain fire protection antifreeze systems.
- Inspect all dry-pipe systems to make sure air settings are correct, air maintenance systems are in good operating condition, pipe closets are insulated, and heat tape and heating systems are working properly. Drain all low points and drum drips.
- Inspect fire hydrants and other exposed equipment for water drainage. Have a plan to keep hydrants clear of snow and ice. Identify hydrants by using markers.
- Exercise and lubricate all water control valves to ensure they will work properly should a water break occur. Keep the valves clear of snow and ice.

## Emergency Response Plan – Review & Update

- Develop emergency response procedures for shutting off critical utilities and sprinkler control valves in the event of a line break. Review your power-outage procedures with individuals with a role in the plan. Notify your local fire department of fire protection impairments.
- Update emergency contact numbers of responders.
- Provide a map for underground utility and fire protection system control valves.
- Keep a list of approved or qualified contractors in the event a problem should arise.

## Freezing Temperatures

- Inspect the heating systems to ensure they are fully operational.
- Check heat tracing in areas and protective systems subject to freezing.
- Check the adequacy of insulation on piping, structures, and buildings.
- Check the fuel supply for the heating system and emergency equipment such as vehicles and portable heaters.
- Inspect fire protection equipment and heated enclosures.
- Continually monitor weather conditions.

## Frozen Pipes - American Water Recommends:

- Shut off the water immediately. Do not attempt to thaw pipes without turning off the main shut-off valve.
- Thaw pipes with warm air. Melt the frozen water in the pipe by warming the air around it. Be sure not to leave space heaters unattended and avoid the use of kerosene heaters or open flames.
- Be careful turning the water back on. Once pipes are thawed, slowly turn the water back on and check pipes and joints for any cracks or leaks that might have been caused by freezing.