

SEVERE WINTER WEATHER PROPERTY RISK CONTROL

WEATHER HAZARDS AND PRECAUTIONS

Winter weather not only brings freezing temperatures with it, but all the frozen goodies that cause havoc for properties and businesses, such as wind, hail, ice, freezing rain and of course snow! Severe winter weather threatens most of the country at some point, and can result in property damage and business interruption.

What to do? Plan! Businesses can take steps to ensure that severe winter weather does not result in an incident that damages property and leads to a lengthy Business Interruption loss.

This bulletin discusses basic risk control measures to reduce the risk potential for facilities exposed to severe winter weather.

REMOVAL OF SNOW AND ICE ON THE PROPERTY

Immediately after a heavy snowfall, remove snow and ice from property access roads and walkways to maintain access to your site and facilities by emergency services, such as the fire department.

A properly planned and executed snow removal program is critical for property protection because:

- Cleared drives and parking areas allow site access for emergency response vehicles, and clear walkways will allow easy access to the building by external emergency response personnel.
- Traffic areas cleared of snow and ice will minimize the possibility of slips, trips or falls by emergency responders, thereby reducing the chances for serious injury to the people responding to an incident.



- Clearing snow and ice from fire hydrants, hose connections and fire protection valves will keep them visible and easily accessible to firefighters.

PREVENTING ROOF COLLAPSE

Snow is heavy; ice even heavier. Depending on the building age, type of roof and other design parameters, excessive snow and ice can cause serious property damage, or even roof collapse, under worst-case conditions. Contributing to roof collapse are the rapid freeze and thaw cycles that occur throughout the winter. Ice can quickly accumulate, blocking roof drains. Then, the weight of the ice and snow buildup can overload a roof above its design parameters resulting in collapse. The following risk control best practices will help you reduce the likelihood of this situation developing.



RISK CONTROL BEST PRACTICES

To lessen the chances of serious property damage due to snow and ice accumulation on the roof:

- Clear accumulation of snow from the roof, particularly in areas of different elevations where drifts quickly build up.
- If a roof is susceptible to large snow drifts, is in an area with heavy snowfall, or is difficult or hazardous to access, initiate a formal snow removal program with a local contractor qualified for roof snow removal with trained staff and proper equipment (shovels, snow blowers) and the appropriate safety planning for those workers/contractors. Equipment that can damage a roof, e.g., ice chopper, blowtorch (a fire hazard!), should never be used.
- Keep an updated winter emergency response plan in effect, especially for snow removal. Include emergency contact numbers for qualified contractors and the building landlord (if leasing the building).
- Verify that drains are clear to allow run-off of melting snow. If the roof is pitched and without drains, open paths to the eaves to ensure drainage and prevent ponding of water.
- Regularly inspect roof drains and remove any debris that could prevent flow. Make sure exterior down spouts are clear of snow or ice at the outlets.
- Be alert for the beginning of ponding-deflection cycles. As snow compresses and absorbs rainwater, the increased weight on the roof will result in depressions that will not drain. Once this condition begins it only gets worse, and if appropriate action is not taken, the roof could eventually collapse.

IMPORTANT: Keep the roof well maintained and do roof repairs and covering replacements as soon as required.

PREVENTING FROZEN AND BURSTING WATER PIPES

Indoor pipes can freeze, depending on such variables as outside temperature, inside temperature, insulation and placement in the building. Pipes in attics, above ceilings, in crawl spaces and basements, and near exterior walls are highly vulnerable to freezing, especially where there is poor insulation, wall cracks or other openings that allow entry of cold outside air.

Monitor important risk control equipment, such as water-based fire protection systems (automatic sprinkler systems, fire pumps, hoses and hydrants). Whether or not piping in these systems actually bursts, any freezing of water can block water flow, preventing proper operation in case of fire. These systems must remain heated and ice-free to minimize losses from fire and water damage. Depending on the hazard, a wet pipe sprinkler system could be converted to a dry system.

RISK CONTROL BEST PRACTICES

To prevent the formation of ice in pipes due to freezing temperatures and to prevent the pipes from bursting, we recommend that you:

- Always place piping in heated areas of a building.
- Properly insulate attics, exterior walls and other areas lacking adequate heating.
- Repair broken windows, ill-fitting doors and other conditions that allow heat loss.
- Keep exterior doors closed, even if not in the immediate vicinity of piping.
- Maintain heat in buildings at all times. No area with piping should be allowed to fall below 40°F (4°C). (This requires regular maintenance, inspection and servicing of existing heating equipment, and safe emergency measures during a prolonged power failure.)
- Shut off the water lines and drain all pipes if the building is to be left unattended for an extended period. (The exceptions are sprinkler systems unless all combustible materials are removed and the building is noncombustible or fire-resistive.)
- Provide insulation around a pipe sufficient to reduce heat loss, or provide heat tracing, if the pipe might be exposed to freezing temperatures.



- Install low temperature alarms (with remote monitoring) in cold-prone areas.
- Adequately maintain and prepare dry-pipe sprinkler systems for cold weather (drain low points, etc).
- Properly service and winterize private yard hydrants.
- Clear snow and ice from private yard hydrants, outside hose connections and fire protection system valves to help prevent freezing of these systems.

IMPORTANT

- Identify the main water shut-off valve(s) for the building and ensure that key personnel know where they are in case of a pipe break.
- Never attempt to thaw a frozen pipe with an open flame.

VACANT, IDLE AND UNOCCUPIED BUILDINGS

A special mention should be made of buildings considered vacant, idle or unoccupied. All of the above issues and recommended best practices apply to these types of buildings. In fact, because they are typically rarely used and less frequently visited, an extra effort is required to ensure that all measures and precautions are taken. During severe weather, daily visits (if possible) should be made.

If adequate heat cannot or will not be maintained, the main domestic water supply valve should be shut off and all water from piping should be completely drained by a qualified plumber. Sprinkler systems and other water-based fire protection systems are a special case. Every effort should be made to keep these systems in service.

CONTACTS

If you would like additional information on this or other risk control topics, contact your local Willis Property Risk Control representative or

George Pavlov, PE

Senior Property Risk Control Consultant
Willis Strategic Outcomes Practice
416 368 9641
george.pavlov@willis.com

Joe Stavish, PE

National Technical Director, Property Risk Control
Willis Strategic Outcomes Practice
973 829 2955
joe.stavish@willis.com

Advice given in this bulletin is general in nature and covers basic procedures applicable to most, if not all, properties susceptible to cold weather, snow and ice. It does not purport to cover all possible conditions, perils or hazards which may be found at a given location or facility, nor to provide complete and all-encompassing loss prevention advice. Other factors could contribute to a loss, or prevent or mitigate a loss.