Winter weather PRECAUTIONS

By Ken Fingler, Director, Risk Management, HED Insurance & Risk Services

Manitoba was blessed with a very pleasant November, but we all know that winter storms are inevitable. While we hope for a mild winter without heavy snow, we know we are bound to have at least a few severe storms and periods of extremely cold temperatures.

It is very important to have a plan in place to reduce the damaging effects of winter storms and methods to deal with problems should they arise.

When the temperatures hover around freezing, a rainstorm will often result in heavy ice accumulations that can bring down power lines (causing power outages) and produce ice on roads, parking lots, sidewalks and stairs resulting in hazardous conditions that are ripe for auto accidents and pedestrian slip-and-falls.

Heavy snowfalls can result in roof collapse; while melting snow can produce falling snow/ice that could damage vehicles or injure passersby.

There are many areas that are exposed to loss from winter storms but we will look more closely at property and liability hazards and methods to reduce the potential for loss.

PROPERTY LOSS HAZARDS:

- Building roof collapse from snow and ice loads
- Water from melting snow/ice leaking into cracks or poorly sealed joints
- Freezing of piping with resultant water damage from leaks
- Spoilage or damage to perishables through lack of heat or refrigeration.

LIABILITY LOSS HAZARDS:

- Injury to public or staff resulting from slip and falls on snow/ice accumulations
- Damage to passersby and vehicles from falling snow, ice or icicles

- Damage to public and their vehicles from potholes in parking lots or on sidewalks/driveways
- Damage to property of others due to failure to protect property in your care.

EXTERIOR SAFETY PRECAUTIONS:

- Remove snow and ice from sidewalks, stairs and ramps as soon as possible following a snow storm.
- Sand and salt all walking or driving surfaces to reduce icy surfaces.
- Block off areas around buildings susceptible to falling snow pack, ice or icicles especially where walkways or parking areas are close to the buildings.

BUILDING STRUCTURES – ROOFS:

Roof collapses from snow and ice load occur more often than one would think. Severe damage to buildings could occur if the accumulated weight of snow/ice build-up exceeds the designed snow load limit.

Collapse often occurs several days or even weeks after a heavy snow or ice storm. The snow and ice accumulates over several days or numerous storms followed by warmer weather and refreezing that increases the density and weight of the snow/ice pack.

These roof collapses can result in extensive damage to the building and contents as well as disruptions to the business operation. Often roofs collapse suddenly, giving the occupants little, if any, warning to evacuate the building. Many people have been injured and a few have perished in these accidents.

WHAT CAUSES THESE COLLAPSES?

The most common cause is the buildup of snow and/or ice that exceeds the roof's load carrying capacity. While roofs are designed to withstand the snow load levels that are normal to each region, unusually heavy/wet snowfalls or accumulations can stress a roof's limitations. Over time, stress to the roof system weakens its structure causing it to collapse.

Low pitched and flat roofs are more susceptible to collapses, thus careful attention needs to be given to the level of snow accumulation on these roofs. Normally,

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snow does not accumulate to great depths on flat roofs as most is blown off. However, under unusual conditions where heavy and wet snowfalls occur, the snow sticks and doesn't blow off easily, thus overstressing the roof.

Moreover, steeply pitched roofs with large spans are also susceptible to sagging and may collapse under unusually heavy snowfalls. As well, additions to buildings may be subject to increased snow loads if they have lower height roofs. Snow may blow off the higher roof and accumulate onto the level. In the case of lean-to type additions to large buildings with peaked or arched roofs such as arenas, snow accumulations on the higher roof may suddenly slide off the roof as the snow pack melts, and then crash down on the addition, resulting in its roof to collapse.

All of these cases may be prevented with careful monitoring of the snow loads and removal of excess snow accumulations.

Caution is needed when removing snow or ice from your roof as workers could be injured by falls, and secondly, considerable damage to the roofing materials may be done when using excessive force to remove snow or ice.

The best line of prevention is a well-planned and executed procedure for snow/ice removal rather than waiting for problems with the structure to become evident.

USING MAINTENANCE STAFF FOR SNOW/ICE REMOVAL:

Personnel delegated to this operation must be physically capable, properly trained and have the right equipment to do the job without endangering themselves, others or the structure.

USING CONTRACTORS FOR SNOW/ICE REMOVAL:

Select contractors on the basis of experience, response times and diligence.

Verify that the contractor has adequate liability insurance to cover his operations and obtain a certificate of insurance with the municipality added as an additional insured.

SNOW/ICE REMOVAL:

- When heavy snow falls are forecast, your maintenance staff should be prepared to inspect roof areas for heavy snow loads. Pay particular attention to vulnerable areas (sheltered corners, lower roof sections, etc.) where snow tends to accumulate.
- Snow or ice should be removed from overloaded areas after establishing that the roof can hold the extra weight of equipment and workers.
- Do not compound the problem by piling snow on another section of the roof before removal. This could overload that section causing a collapse.
- Repeat the process after each new storm being cautious to leave 3-4" of snow/ice over the roof covering to prevent damage to the roofing material which could lead to water leaks when the temperature increases. Avoid using pick type tools that could pierce or damage the roof membrane.
- Avoid using open flame torches to melt ice as this will often damage the roofing or the joint seals resulting in water leaks later on.
- Remove snow/ice accumulations from skylights and around heating, ventilation and air conditioning units taking care not to walk on snow covered skylights.
- Keep all drains, eaves troughs and roof edges clear of snow and ice to allow for melting ice to run off.
- Provide warning signs and corridor off areas along buildings when snow or ice may fall onto parking areas or walkways. Extra precautions are needed to clear the area during snow removal from roof tops.
- Drains and downspouts should be kept clear and directed away from walkways, parking areas or locations where water can pond presenting slip and fall hazards when the water freezes or water damage problems when warm weather arrives.

WATER DAMAGE:

Water damage from frozen piping produces the second highest loss amounts next to fire damage claims. Extreme cold weather presents risks of water and heating line freezing which could burst and result in heavy water damage if not detected quickly.

Careful preparation in the fall and frequent monitoring during the cold weather are vital in the prevention of water damage losses:

- Heating systems should be checked and serviced every fall to ensure that they are working properly.
- Check buildings frequently during cold snaps to ensure that all windows and doors are closed properly and that heating systems are functioning properly.
- Do not turn down thermostats below 10C (50F) especially during cold weather. Heater failure could result in frozen pipes in a very short time.
- Install low temperature alarms that will alert an alarm center if inside temperatures drop to 5C (41F).
- Maintain temporary heaters that could be used quickly in case of furnace failure.
- Drain water lines, toilets, tanks that may not be used during the winter.
- Check buildings, heating and water systems frequently during the winter to detect problems early.

EMERGENCY HEATING/ POWER SYSTEMS:

Severe winter storms have often resulted in heating system failures from heavy usage or even wide spread power outages that necessitate the use of temporary heating systems to prevent freezing of water lines, perishable contents etc.

Measures taken to recover from heat or power outages could present additional hazards that may prevent threat to occupants.

- Care must be taken to operate heaters properly to avoid carbon monoxide poisoning and possible fires:
- Do not use any temporary equipment such as barbecues, camp stoves or unvented portable heaters for heating or cooking inside buildings.
- Do not use any emergency power generator indoors unless directly vented to the outside. It's recommended that portable generators be located outside.
- Ensure that all heaters and generators are kept well away from combustibles, especially curtains or drapery that may move and fall on heaters.
- Do not attempt to dry clothing or boots directly on heaters.

If you have any questions or concerns please contact:
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