# CNA Risk Control Presents:

# Hot Tips Before Cold Weather Arrives

We will soon be approaching the winter months with lots of snow, ice, and freezing temperatures. The heavy weight of ice and snow will test the integrity of roof structures. The cold temperatures will make sprinkler, process, and domestic water piping systems vulnerable to freeze-ups and breakage. Now is the time to take necessary precautions.

Some businesses find themselves unprepared when normal winter weather suddenly turns extreme. During a severe cold spell, sprinkler or water pipes can freeze, burst, and produce devastating losses. Water damage from this type of incident (called a “freeze-up” condition) can affect products in storage, paperwork, records, furniture, machinery, computers, and all types of electronic equipment. If the water leakage goes undetected for an extended period (over a weekend, for example), extensive flooding can result.

Total costs often reach well into thousands of dollars (and millions of dollars in some cases). In "deep-freeze" weather conditions (below 0°F) a broken window or an open door in an uninsulated or unheated area can let in enough cold to freeze nearby piping and start a catastrophic chain of events. Any equipment that contains or uses water, produces condensate, or depends on pneumatic controls is vulnerable to freezing. Other conditions that make your business susceptible to “freeze-ups” are heating systems that lack reserve capacity beyond their normal heating load, poor building insulation, and piping that runs out of doors.

Often freezing of automatic sprinkler systems occurs in climates not normally associated with cold weather. It is important that you stay alert to unusual climatic changes that may cause freezing and be prepared to take preventive measures as if located in a colder climate.

## Wet Pipe Sprinkler Systems

“Freeze-ups” in wet sprinkler systems occur most frequently in exposed and out-of-the way places as well as during weekends or other shutdown periods when a sudden cold snap catches you unprepared. Most “freeze-ups” result from failure to provide adequate heat. Others are caused by doors, windows, cracks, loose siding, or similar defects in building maintenance.

## Dry Pipe Systems

Dry pipe systems are generally installed in structures where temperatures are normally below 40°F. They are designed for use inside buildings that are unheated, inadequately heated, or that must be open to outside cold temperature for long time periods. Dry pipe systems generally freeze due to water collecting in improperly pitched pipes, failure to remove accumulated water from low point drains, or failure to drain the system properly after the valve has tripped.

# Snow Loading and Potential Roof Collapse is Serious Threat

As winter approaches, most businesses plan ahead for snow and severe weather conditions by winterizing vehicles, contracting for snow plowing, and other activities. But often, they neglect to plan for one of most serious winter threats – roof collapse due to snow loading. Even a partial roof collapse can be devastating in terms of property damage, business interruption, and maybe loss of life. If snow has accumulated, you will need to remove it to prevent roof collapse.

When the weight of accumulated snow and ice exceeds the live load capacity of the roof structure, the roof will collapse. Rain falling on accumulated snow is especially dangerous because it can quickly triple the weight of the snow. Even the warmer regions of the country cannot ignore this hazard. In fact, they may be more susceptible in an unusually severe winter storm because they are less accustomed to the weather and less prepared for the extreme conditions.

Building codes that permit lower live-load specifications for roof structures can also increase susceptibility to roof collapse from snow loading. Planning, preparation, and prompt action to remove accumulated snow will help minimize the risk of snow loading and roof collapse.