



# Risktopics

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## Cold Weather Preparation

### Introduction

In addition to the freezing of sprinkler pipes and general water pipes, low temperatures can damage boilers, compressors, steam piping, instrumentation lines, process pipes and heating, ventilation and air-conditioning (HVAC) equipment. Zurich's claims experience indicates that all areas of the United Kingdom need to be concerned with potential damage caused by cold weather.

As the seasons change and cold weather approaches, you can address key maintenance responsibilities and take various precautions now to reduce the risk of fire protection impairment or property loss at your premises from winter storm events. With close monitoring of weather conditions, adequate preparation and a well-trained emergency response team in place, cold weather losses can often be reduced.

The following areas should be addressed as part of your planning prior to and during the cold weather season.

### Risk Assessment

The vast majority of commercial premises are at risk from damage being caused by cold weather. By undertaking a risk assessment, items of plant and equipment that are more susceptible to cold weather damage can be identified and a plan, to limit the risk of damage, can be put in place. This will not only help to prevent physical loss but can also help to limit any subsequent interruption to the business following a loss.

### Emergency Team

Forming an emergency response team before a cold weather crisis occurs is an important step in mitigating property loss. Team members can be trained for specific duties to keep the plant operational during freezing weather. They should work together to identify potential problem areas in the plant or on the site where freezing could occur. Previous sudden freeze incidents should be documented and reviewed with the emergency response team. Using this and other knowledge and experience, team members can prepare the plant and site for heavy snow, ice or freezing conditions and develop emergency procedures for shutting off critical utilities and sprinkler

control valves in the event of a line break. It is important to note that Zurich should be advised of any impairment to fire protection systems at the earliest opportunity.

In addition, power cut procedures should be developed and documented. Purchasing or obtaining generators can be difficult during a winter storm event. Pre-planning with local equipment suppliers can be done to ensure necessary emergency equipment is available.

The following information details a number of Zurich's recommendations that can be followed to help prevent losses from occurring or help to minimise the impact of any loss.

## **Structure and Building Precautions**

- Inspect the premises for potential cold spots such as loading docks, attics and concealed areas. Where necessary, use insulation and ensure doors and windows are properly sealed to prevent freezing of pipes in the area at risk. Non-flame emitting portable heating units may be necessary in some instances. Flame emitting portable heaters are not recommended as these introduce additional fire hazards. Proper use of insulation should always be the first choice.
- In addition to checking the working condition of all heating systems for the winter months, ensure that systems which supply heat to sprinkler pump houses, dry pipe valve cupboards/risers and water tanks are serviced before the start of the cold season.
- Identify important access roads and ensure they are clear of snow at all times. Clear snow accumulation around fire hydrants and critical utilities.
- Check roof drains and gutters for plugging, to prevent the back up and ponding of water or ice.
- Put programmes in place for snow removal from roofs, especially in lower elevation roof areas which may be more susceptible to excessive wind driven accumulation.

## **Boilers and Heating Systems**

- Inspect all boilers and heating systems annually. The inspections should be conducted by a qualified professional in advance of the heaters being used for the cold season. Prioritise steam usage for critical equipment.
- Maintain an adequate supply of fuel on site just prior to and during the cold weather season. Back-up fuel systems also need to be maintained.
- Ensure a one metre clearance is maintained between heating units and any combustible materials.

## **Fire Fighting Equipment**

- Determine which portable fire extinguishers are designed for cold weather areas. Move extinguishers, which are subject to freezing, into heated areas ensuring that the fire extinguisher coverage is not compromised.
- Drain, dry and properly store all fire hoses.

## Fire Protection Systems

- Maintain a minimum temperature of 4°C in building areas which house; processes that are susceptible to freezing, wet pipe sprinkler systems, fire pumps and dry valve enclosures. Diesel fire pump houses should maintain a temperature of 21°C.
- Check, sample and service all fire protection antifreeze systems.
- Inspect all dry pipe systems to make sure that the clapper is properly seated, air settings are correct, air maintenance systems are in good working order, pipe cupboards/risers are well insulated and heat tape and heating systems are working properly. All low points should be drained and the priming water level checked for excess accumulation.
- Wet pipe branch lines may need to be insulated in isolated areas if subject to severe cold temperatures. All exposed pipework should be drained.

## Fire Hydrants, Underground Mains and Water Supplies

- Inspect fire hydrants and other exposed equipment for water drainage. Keep hydrants clear of snow and ice. In periods of heavy snowfall, hydrants can be identified by using poles that will exceed the height of the highest snow accumulation.
- Inspect valve and water meter pits for standing water. Any standing water should be removed.
- Exercise and lubricate all sectional control valves to ensure they will work properly, should an underground break occur. Keep the valves free of snow and ice.
- Maintain the water in suction and gravity tanks at a minimum temperature of 6°C. Check the heating system prior to the cold weather season.

## Immediate action items for imminent freeze conditions

- Mobilise the emergency response team and ensure that they continually monitor critical areas.
- Make sure emergency lighting and flashlights are available.
- Inspect the heating systems to ensure that they are fully operational.
- Check the correct operation of heat tracing provided in process areas and protective systems, which are subject to freeze.
- Check the adequacy of insulation on piping, structures and inside buildings.
- Check the fuel supply for the heating system and any other emergency equipment. Have adequate fuel supplies to hand.
- Maintain back-up fuel oil systems to prevent freezing.
- Where idle equipment is present, drain any vessels and pipework.

- Regularly inspect fire protection equipment, to ensure reliability.
- Constantly monitor weather conditions.

## **Summary**

Every year, Zurich customers suffer losses as a result of cold weather. Very often, these losses occur during winter shut down periods. By undertaking a process of risk assessment and through the implementation of an emergency response team with designated duties, cold weather losses can be prevented.

The recommendations contained in this document are presented as a comprehensive guide to the most common problems that arise during cold weather. However, the recommendations are not all-inclusive and certain additional precautions, unique to your operation, may be necessary.

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