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RISK CONTROL SERVICES

Winter Precautions for Fire Protection Systems

Winter is here, and as temperatures plummet, your fire protection systems face their greatest risks. Frozen pipes, snow-covered hydrants, and equipment failures can compromise your property's safety when you need it the most. The good news? With proactive care and maintenance, you can protect your systems and ensure they remain reliable all season long.

Understanding Winter Risks

Fire protection systems are designed to safeguard your property, but cold weather can bring unexpected challenges. Wet pipe systems are particularly vulnerable to freezing, especially in unheated areas like loading docks or attics, where temperatures can drop below 40°F. Even dry pipe systems, designed to resist freezing, can experience water accumulation that leads to ice blockages.

Heavy snow adds another layer of complexity, often blocking access to critical components like hydrants, sprinkler control valves, and fire department connections. These issues can delay emergency response and lead to costly damage.

To keep your fire protection systems in optimal condition, follow these essential winter maintenance tips:

Maintain heat:

- Keep all sprinklered areas, including attics and crawl spaces, at or above 40°F.
- Insulate exposed piping and seal windows, doors, and skylights to prevent heat loss.
- Use approved heat tape where needed, especially for outdoor piping.

Safeguard wet pipe systems:

- Ensure building heat is adequate in all areas with wet pipe systems.
- Insulate attic and exterior piping, and enclose exterior risers in heated, insulated structures.

Protect dry pipe systems:

- Drain condensate from low points at least monthly to prevent freezing.
- Ensure piping slopes to drains, correct sagging pipes, and heat enclosures for valves and trim piping.
- Check auxiliary drains and drum drips frequently during cold weather.

Check anti-freeze systems:

- Use anti-freeze systems only where permitted by code such as exposed sprinkler heads in loading docks.
- Check solution concentration annually to ensure compliance and effectiveness.

Prepare fire pumps:

- Maintain pump house temperature as per manufacturer guidelines (typically 70°F).
- Provide water jacket heaters for diesel engines and test electrical interlocks and relays before winter.

Water tanks, hydrants and valves:

- Avoid exposed piping; heat above-ground meters and valves.
- Flush heating systems annually; repair steam traps as needed.
- Mark hydrants and valves above snow lines for visibility.
- Regularly inspect for leaks and ensure accessibility.

General equipment:

- Use non-freeze extinguishers in cold areas.
- Keep heaters and flues in proper working condition.

Monitor snow conditions:

- Mark hydrants and valves above the snow line for visibility.
- Clear snow from sprinkler control valves and fire department connections to ensure accessibility during emergencies.

What to do if a freeze-up occurs

Despite your best efforts, freeze-ups can happen. If you suspect your systems are frozen, take immediate action:

1. Shut off affected systems to prevent further damage.
2. Notify your insurance provider and provide repair timelines.
3. Relocate vulnerable equipment and materials to minimize risk.
4. Implement a fire watch to ensure safety while systems are offline.
5. Assess and repair damage before restoring your systems.

Special considerations for idle facilities

Even temporarily idle facilities need protection during the winter. Keep sprinkler systems active whenever possible and consult your insurer for guidance on system restoration if the building is vacated.

Take action today

Winter weather doesn't have to mean increased risk for your fire protection systems. Taking proactive measures during winter months can safeguard fire protection systems from damage, ensuring operational reliability and compliance with safety codes. Regular maintenance, proper insulation, and adherence to preventive guidelines are key to minimizing risks associated with cold weather conditions.

Should you have any questions, please reach out to your Sompo Risk Control Specialist or contact us at +1 877 667 5733 or RiskControlQuestions@sompo-intl.com for more information.

***A sample inspection form is attached that can be tailored for use at your facility**

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A+ Financial Rating:
A.M. Best (Superior)
S&P (Strong)

Freeze protection check list for fire protection equipment

SOMPO

Date: _____ **Completed by:** _____

Sprinkler systems	Action – just prior to and during cold weather	Condition or Comment
Wet pipe systems	Maintain building heat above 40°F. Include areas above suspended ceilings, exhaust stacks and beneath floors if protected by wet pipe system.	
	Periodically open inspector tests and 2 in. drain valves to check for freezing.	
	If space heaters are used in remote areas to maintain heat, establish program to inspect heaters.	
	Install temperature monitoring in critical areas such as Fire Pump Room or other important unattended areas.	
	If wet pipe is exposed to cold weather, it should be equipped with approved heat tracing system.	
	If "shut in winter" valves are provided they should be converted to non-freeze systems.	
	If wet pipe is exposed to cold weather, it should be equipped with approved heat tracing system- Contact your Sompo America Account manager to discuss converting wet systems to dry systems.	
Dry pipe systems	Check condition of insulation and operation of heating system in the dry pipe valve enclosure at least weekly.	
	Check piping for pitch and empty drum drips at low points. Are location and number of drains sufficient?	
	Check low point drains weekly to ensure condensates do not accumulate (check daily during onset of cold weather).	
	Check calibration of low air pressure switch during annual trip tests (set about 5-psi higher than trip point of system- see comments above). Provide pressure switches for systems that protect critical areas that are not constantly attended.	
Fire hydrants and control valves	Clear snow from hydrants and valves to ensure easy access. Provide markers for valves and hydrants in areas subject to heavy accumulation.	
	Check ground around valves and hydrants just prior to cold weather for evidence of leakage.	
	Check suction on dry barrel hydrants to ensure proper drainage (place hand over opening just after flowing the hydrant shutting off water flow and you should feel suction).	

Freeze protection check list for fire protection equipment *(continued)*

Sprinkler systems	Action – just prior to and during cold weather	Condition or Comment
Fire pumps	Check heating system in the Pump Room for proper operation. Maintain temperature in room at least 40°F.	
	Check block heater on diesel engine driven pumps at least weekly Block heats should be provided in areas subject to freezing. Maintain in accordance with manufacturers' recommendations.	
Water storage tanks	Flush heating systems in water storage tank to remove sediment. Overhaul steam traps if necessary. Check system for proper operation.	

***Note:** File with Self-Inspection Records (delete items that are not applicable to your facility).