

# Sprinkler Systems – Window Protection

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The use of non-fire rated glazing can aid fire spread, whether from a fire developing within the building, or a fire seated in an adjacent property.

Window sprinklers are designed to reduce the risk of such fire spread, and this Loss Prevention Standard provides guidance on their effective use.



## Introduction

Window sprinklers are specific application sprinkler heads, designed for the complete ‘wetting of glazing’, with the aim of protecting/maintaining the structural integrity of the glazing and reducing the risk of fire spread, and/or providing exposure protection.

**Window sprinklers are often specified by the project’s appointed fire consultant as an alternative to fire rated glazing and can be installed within the building to protect against internal fires, and/or externally (using open nozzles) as exposure protection from adjacent buildings.**

Window sprinklers are also specified where non-fire rated glazing is used internally to provide fire escape routes.

The intention of this Loss Prevention Standard is to ensure the inclusion of window sprinklers does not compromise the effectiveness of ceiling mounted sprinkler equipment.

Note: This document is focussed on Property loss prevention in relation to fixed sprinkler protection systems. It is not intended to address Liability exposures. The presumption is that all regulatory requirements, Fire Risk Assessments, and compliance with requirements placed by the local authority having jurisdiction which would include licencing, building permissions, regulations, codes, or standards, have or will be met.

## Design Considerations and Associated Implications

The use of window sprinklers is not wholly discussed within all of the main international sprinkler standards, however given the variety of types available, and their individual performance characteristics, the installation and use of window sprinklers should **be in full accordance with the manufacturer’s approved data sheet**, and review and acceptance by any authorities having jurisdiction.

The following should be taken into account when considering the use of window sprinklers:

- The water supply for window sprinklers should preferably be dedicated to the window sprinklers only, i.e. separate from the ceiling sprinklers water supplies supply.
- If the water supplies for the window sprinklers and ceiling sprinklers are combined:
  - ✓ All pipework should be sized using full hydraulic calculations.
  - ✓ A full hydraulic calculation should account for simultaneous operation of window sprinklers and ceiling sprinklers to ensure demand and capacity are met. .
  - ✓ The demand for the window sprinklers must be in addition to the demand for the ceiling sprinklers.
- The minimum operating pressure of window sprinklers is generally 0.5 bar, therefore the pipework should be sized using full hydraulic calculations.
- Ensure appropriate fire resistant barriers/partitions around glazing are in place. This helps maintain the integrity of the fire compartment and contain the spread of fire.

## Other Considerations

- Window sprinklers have not been tested for use where horizontal window mullions are installed.
  - ✓ The presence of mullions can obstruct sprinkler performance and the distribution of water over the window surfaces.
- Window sprinklers should be located on the glazing side of any window coverings, e.g. between the glazing and curtains, blinds etc.
- Ensure no furnishings etc., are located between the window sprinklers and the glazing.
- If window sprinklers are being proposed as an alternative to fire rated glazing to comply with building related regulatory requirements, standards or codes, the window sprinkler data sheets should be fully considered to understand installation and use requirements, and any performance limitations.
  - ✓ The duration of the water supply should also align with the fire resistance rating (insulation and integrity) that would be required of the glazing in the absence of the sprinkler protection.
- The use of window sprinklers may result in a higher specification fire pump and increased stored water capacity. This is likely to impact spatial requirements and project costs and should be carefully considered.

Note: Refer to your Property Insurer and Broker for further guidance, ideally at concept stage, for best practice guidance and approval of sprinkler designs and specifications.

## Sources and Useful Links

- [NFPA 13 Standard for the Installation of Sprinkler Systems](#)
- [FM property loss prevention data sheets](#)
- [LPC Rules for Automatic Sprinkler Installations](#)
- [BS EN 12845: Fixed firefighting systems. Automatic sprinkler systems. Design, installation and maintenance](#)

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## Additional Information

Relevant Loss Prevention Standards include:

- Sprinkler Systems – How they Operate
- Sprinkler Systems – Review of Hazard
- Sprinkler Systems – Winter Precautions

To find out more, please visit [Aviva Risk Management Solutions](#) or speak to one of our advisors.

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## LOSS PREVENTION STANDARDS