

Loss Prevention Standards

Sprinkler Systems – Review of Hazard

Introduction

Sprinkler systems are designed and installed to a set of codes such as BS EN 12845, National Fire Protection Association (NFPA) or Factory Mutual (FM).

These codes detail the type, spacing and location of sprinkler heads, type of water supply, the amount of water required, sprinkler head spacing, etc.

Sprinkler system design is specifically based on the occupancy hazard of the premises and the storage within it. Therefore, if any of these areas change following the system installation, this calls into question the system's capability to control a fire.

Businesses are constantly evolving; products change; storage requirements change; the type of packaging used can vary; any one of these may reduce the capability of the sprinkler system to protect the building and its contents. It is therefore critical to regularly review the premises and its operations, to ensure the sprinkler system design keeps pace with the business.

Review of Hazard

Technical Bulletin 203 of BS EN 12845 states 'A review of hazard should be a continuous process undertaken by the user. Where changes occur that might change the effectiveness of the sprinkler protection, immediate remedial action should be taken.'

At quarterly intervals the process should be formalised either by a review by a competent person, or submission of a completed return to the sprinkler servicing contractor responsible for the review of hazard during the yearly routine. The quarterly review of hazard may be undertaken by a competent person who is not an employee of the user, for example, an engineer from a sprinkler servicing contractor.

The effect of any changes in structure, occupancy, storage configurations, heating, lighting, building equipment, hazard classification, or installation design should be identified in order that the appropriate corrective action may be implemented immediately.

The review should be carried out using one of the following procedures:

- An inspection by a competent person, for example, by an engineer from the sprinkler servicing contractor
- The user should submit a completed return to the sprinkler servicing contractor detailing any changes (as specified in Technical Bulletin 203)

The review should consider, in addition to any other elements pertinent to your organisation:

- Have any structural alterations been made since the last review which necessitates modifications to the sprinkler system, including low-level office installation or partition relocation?
- Are there any new buildings, mezzanines or extensions?
- Has there been a change of use to all or any part of the protected building(s)?
- Have any new hazards or processes been introduced?
- Is the ambient temperature range still within acceptable limits for the design of the sprinkler system?
- Has any painting or decorating been undertaken since the last inspection?
- Are the frost protection measures adequate?
- Have there been any significant changes to plant or equipment quantity and location, or changes in production?
- Is the storage type still consistent with the sprinkler system design, e.g. freestanding storage has not changed to rack storage?
- Is the design of the rack sprinklers consistent with the storage category?
- Are flues (horizontal and vertical) within the storage racks kept clear as designated by the design requirements?
- Are minimum clearances maintained between stored items and sprinkler heads?
- Has the nature of goods stored, or their packaging changed, and if so, does this alter the category of stored goods?
- Have there been any changes to storage arrangements, e.g. introduction of plastic pallets, shelving and tote boxes?
- Have there been any changes in storage heights?



- Where a smoke or heat detection system interacts with the sprinkler system, is a suitable maintenance contract in force?
Have there been any changes to the cause and effect routine?
- Have there been any problems with the sprinkler system?
- Have there been any alterations to the sprinkler system?

Checklist

A generic Review of Hazard Checklist is presented in Appendix 1 which can be tailored to your own organisation.

Additional Information

Aviva Loss Prevention Standard: Sprinkler Systems – How they Operate

Aviva Loss Prevention Standard: Sprinkler Systems – Flexible Connections

Aviva Loss Prevention Standard: Sprinkler Systems – Winter Precautions

Further risk management information can be obtained from [Aviva Risk Management Solutions](#)

Please Note

This document contains general information and guidance and is not and should not be relied on as specific advice. The document may not cover every risk, exposure or hazard that may arise and Aviva recommend that you obtain specific advice relevant to the circumstances. AVIVA accepts no responsibility or liability towards any person who may rely upon this document.



Appendix 1 – Review of Hazard Checklist

Location	
Date	
Completed by (name and signature)	

	Review of Hazard Checklist	Y/N	Comments
1.	Have any structural alterations been made since the last review, which necessitates modifications to the sprinkler system including low-level office installation and partition relocation?		
2.	Are there any new buildings, mezzanines or extensions?		
3.	Has there been a change of use to all or any part of the protected building(s)?		
4.	Have any new hazards or processes been introduced?		
5.	Is the ambient temperature range still within acceptable limits for the design of the sprinkler system?		
6.	If any painting or decorating has been undertaken since the last inspection, are any sprinkler heads painted and/or have protective coverings been removed?		
7.	Are frost protection measures adequate, i.e. minimum 4°C maintained for wet sprinkler systems, and all trace heating in working order?		
8.	Have there been any significant changes to plant or equipment quantity and location, or changes in production?		
9.	Is the storage type still consistent with the sprinkler system design, e.g. freestanding storage has not changed to rack storage?		
10.	Is the design of the rack sprinklers consistent with the storage category?		
11.	Are flues (horizontal and vertical) within the storage racks kept clear as designated by the design requirements?		
12.	Are minimum clearances maintained between stored items and sprinkler heads?		
13.	Has the nature of goods stored or their packaging changed, and if so, does this alter the category of stored goods?		
14.	Have there been any changes to storage arrangements, e.g. plastic pallets, shelving, tote boxes, new racks?		



	Review of Hazard Checklist Contd.	Y/N	Comments
15.	Have there been any changes in storage heights?		
16.	Where a smoke or heat detection system interacts with the sprinkler system, is a suitable maintenance contract in force? Have there been any changes to the cause and effect routine?		
17.	Have there been any problems with the sprinkler system?		
18.	Have there been any alterations to the sprinkler system?		
19.	Are all areas of the sprinkler system 'live'?		
20.	Are all stop valves including zone valves fully open?		
21.	Additional comments:		

