

Sprinkler Systems - Design Proposals Required Information for Review

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This Standard is provided to help support the many sprinkler-related projects Aviva receives and is involved with, primarily in Property Investor, Property Owner, Shopping Centre, Shopping Unit and Office Complex type occupancies. The document aims to highlight the information Aviva requires to be able to complete an effective review of proposals.



Sprinkler Systems - Design Proposals Required Information for Review



Introduction

As part of a new sprinkler system installation or a modification to an existing system, appropriate design drawings and any associated hydraulic calculations and supporting information should be sent to Aviva for review and acceptance. Ideally, this should be completed with as much time as possible in advance of the project starting and before fabrication of the pipework commences.

However, experience shows design drawings and supporting information can be sent for review at the last minute, where pipework is already fabricated, sprinkler heads and equipment are ordered, and in some cases the pipework is being installed. In addition, many proposals are sent through with incomplete, inaccurate, or insufficiently detailed design drawings, hydraulic calculations, etc. As a result, both the review process and the project can be impacted, potentially leading to increased costs and avoidable delays.

To help support the project development and the sprinkler installation company, and to help ensure the proposals can be reviewed with minimal delay and maximum efficiency, the following project details and a simple checklist are included for completion by the sprinkler contractor, which need to be returned with the submission.

Please Note: Aviva review submissions for Loss Prevention and Property Insurance purposes.

All design drawings and supporting information need to be issued by email, in PDF format to:

- sprinklerreview@aviva.com

AutoCAD/DWG format files, etc. must not be issued, and web-based/file-sharing sites cannot be used.

Project Details: **For Completion by the Sprinkler Contractor**

Project Name	
Project Address	
Sprinkler Contractor	
Designers Name	
Designers Contact Details	
Designs Verified By	
Date Of Submission	
Project Overview & Any Explanatory Comments and/or Additional Details To Clarify Proposals	

Checklist: For Completion by the Sprinkler Contractor – Please Tick To Affirm

Please refer to the supporting notes on the following pages to be read in conjunction with the checklist items.

1	The sprinkler contractor is third-party accredited (e.g. LPS 1048) and approved to an appropriate level as part of the accreditation scheme for the proposed works.	<input type="checkbox"/>
2	All designs have been quality assurance reviewed and independently verified, ensuring all relevant and required design details, for example, full sprinkler spacing/location dimensions, full sectional details, etc. are included.	<input type="checkbox"/>
3	All designs are ‘Construction’ issue <u>and</u> are based on a full site survey undertaken by the sprinkler contractor, including where applicable a review of all existing sprinkler protection proposed to be retained.	<input type="checkbox"/>
4	All areas/occupancies and associated fire protection(s) are clearly identified, including any areas that may feature alternative fire protections, <u>and/or</u> non-compliances are detailed (whether existing or for consideration), etc.	<input type="checkbox"/>
5	Comprehensive sprinkler spacing/location dimensions are detailed for all areas (including all existing/retained protection), relative to all structural features, obstructions, partitions, M&E services, etc.	<input type="checkbox"/>
6	All sprinkler locations are fully coordinated with new and/or existing M&E services, structural features, obstructions, partitions, etc., <u>and</u> all such coordination considerations are fully detailed on plan(s) and section(s).	<input type="checkbox"/>
7	All sprinkler deflectors are located between 75-150mm from the structural ceilings <u>and/or</u> the second-fix method(s) to be used is clearly detailed and fully compliant for the application.	<input type="checkbox"/>
8	Fully detailed and dimensioned section(s) through each level of the unit/area are provided, clearly showing structural features, void depths, the distance of sprinkler deflectors from ceilings, storage systems, etc.	<input type="checkbox"/>
9	All suspended ceilings, rafts, architectural features, etc., including details of composition/materials, are fully detailed on plan(s) and section(s), including all heights, levels, voids, etc.	<input type="checkbox"/>
10	Proposed storage height(s), the storage method(s)/system(s), <u>and</u> the applicable storage height limitation(s) based on the site-specific categorisation of goods are fully detailed on plan(s) and section(s).	<input type="checkbox"/>
11	Areas of sprinkler protection around any floor openings, e.g. escalators and stairwells, <u>and/or</u> relative to open faces, mezzanine perimeters, combustible partitions, etc. are designed in accordance with the current standards.	<input type="checkbox"/>
12	Construction details of all floors, ceilings, walls/partitions, and as may be applicable, doors, shutters, fire stopping, etc. are detailed on the drawings.	<input type="checkbox"/>
13	All relevant (pre-/full-) hydraulic calculations <u>and</u> all necessary supporting information, e.g. calculation summaries, base-build details, water supply test results, node reference drawings, explanatory notes, etc. are included.	<input type="checkbox"/>
14	All sprinkler head specifications are fully detailed, including diameter, ‘K’ factor, make, model, thermal rating, response rating, spray pattern, and areas to be used.	<input type="checkbox"/>
15	All equipment associated with the sprinkler protection, e.g. the type and location of all pipe work supports, isolation/zone/drain valve(s), flow switch(s), etc. are fully detailed.	<input type="checkbox"/>

NOTE: Failure to Include and Affirm All of the Above Details Will Result in Rejection of Proposals

Supporting Notes and Commentary

The following notes are to be read in conjunction with the respective checklist items.

Notes for Item 1

All sprinkler contractors need to be third-party accredited. The sprinkler contractor will either be approved to self-certify the works, or alternatively may require a third-party review, in which case copies of the review reports need to be provided as part of the submission.

Notes for Item 2

All designs need to be quality assurance checked and independently verified by the sprinkler contractor (and additionally where applicable, by any necessary third-party). Designers cannot check their own work. The full name of both the designer and the verifier should be provided on all design drawings.

The sprinkler contractor must review all existing/retained sprinkler protection, and any identified non-compliance(s) will ordinarily need to be rectified in conjunction with the contract works. Areas detailed as, for example, 'Not in Scope of Works' will not be accepted.

Any associated electrical works and the responsibility for such works also needs to be detailed, e.g. provision of a power supply, interface with the fire alarm system, etc.

Notes for Item 3

Any design drawings that are 'Preliminary', 'Provisional', 'Subject to Survey', etc. should not be issued to Aviva for approval.

Where completion of design drawings is subject to, for example, the removal of existing suspended ceilings to allow a site survey to be undertaken, design drawings must be issued as soon as practicable following the commencement of works on site.

This needs to be separately advised in writing, including an anticipated date of issue and the contract completion date.

Notes for Items 5 & 6

Where it is not possible to determine existing pipe work routes and sizes, e.g. where an existing plasterboard ceiling is being retained with no access above, then as a minimum the existing sprinkler locations need to be detailed including full spacing/location dimensions, and any survey access restrictions need to be noted on the design drawings.

Pipe fabrication dimensions, unless separately detailed, need to be removed. All non-relevant details, e.g. low-level fixtures, fittings, etc. must be removed.

Notes for Item 7

All sprinkler heads need to be installed in accordance with the requirements of the current standards and be supported by technical justification detailed on the drawing, with accompanying sections (refer also to TB229.3.23).

Where flexible connections are being used for second fix, these must be installed in accordance with the **manufacturer's instructions** and comply with TB227.2.4.2.

For further guidance around the use and restrictions associated with flexible sprinkler connections, please refer to the **Aviva Loss Prevention Standard: 'Sprinkler Systems – Flexible Connections'** (see 'Additional Information' below for a link to the Aviva Risk Management Solutions website).

Notes for Items 8 & 9

Fully dimensioned section(s) through each level of the unit/area (clearly showing structural features, void depths and the distance of sprinkler deflectors from ceilings/soffits) must be provided. Section(s) should be included for each style of fit-out arrangement throughout the demise.

Notes for Item 10

For further guidance around storage systems and restrictions, please refer to the Aviva Loss Prevention Standard: **'Sprinkler Systems – Retail Storage Guidance'** (see 'Additional Information' below for a link to the Aviva Risk Management Solutions website).

Notes for Items 11 & 12

Please refer to the Aviva Loss Prevention Standard: **'Sprinkler Systems – Review of Hazard'** (see 'Additional Information' below for a link to the Aviva Risk Management Solutions website).

Notes for Item 13

Pre-calculated pressure loss statements or full hydraulic calculations (as applicable) need to be issued in conjunction with design details, and include any necessary supporting details, e.g. node reference drawings, water supply site performance test result details, etc.

For pre-calculated sites, if pressure losses between the installation control or zone valve (as applicable) and the connection point cannot be established, please provide evidence that these were requested. In this instance, the pipework between the connection and the design point and/or any remote array must be sized to the existing unit/area connection.

Notes for Items 14 & 15

For clarification purposes, and to help avoid any potential errors during procurement, sprinkler head details need to be included in full (as opposed to providing only a basic reference to a manufacturer's model number).

Where it is proposed to retain existing sprinkler heads, it is essential that they are checked for condition in terms of **age, damage, contaminants, masking, thermal sensitivity, response type, potential presence of 'O'-ring sealing mechanisms, etc.**, and either confirmed suitable for continued fire protection service, or replaced as necessary.

All sprinkler equipment (existing/new, as applicable) needs to be fully detailed, including the location of the pipe supports, fixing method(s) and components, the type (make, model, size, etc.), arrangement and location of all valves and/or alarm/supervisory equipment, etc. Where any wiring is required, for example, power, fire alarm interface, monitoring/supervisory systems, etc. any third-party contractor(s) responsible for completing the works need to be detailed.

LOSS PREVENTION STANDARDS

Sources and Useful Links

- [LPC Rules for Automatic Sprinkler Installations \(incorporating BS EN 12845\)](#)
- [LPCB Red Book Live](#)
- [LPCB standards and certification](#)
- [National Fire Protection Association \(NFPA\): 13 – Standard for the Installation of Sprinkler Systems](#)

Additional Information

Relevant Loss Prevention Standards include:

- Managing Change - Property
- Managing Contractors - Property
- Sprinkler Systems – Flexible Connections
- Sprinkler Systems – Retail Storage Guidance
- Sprinkler Systems – Review of Hazards

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

Email us at sprinklerreview@aviva.com

Please Note

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