Fire protection design review requirements

When installing a new sprinkler system or modifying an existing one, it's important to submit detailed design drawings.

Introduction

When installing a new sprinkler system or modifying an existing one, it's important to submit detailed design drawings, hydraulic calculations, and supporting information to Allianz for review and approval. Ideally, these submissions are to be made at least one month before the project start date, equipment is ordered and before pipework fabrication commences.

However, it's common for submissions to be delayed until the last minute, especially for smaller projects, often after pipework is fabricated and equipment ordered, which can lead to incomplete or inaccurate documentation. This can affect both the review process and the project timeline, potentially increasing costs and causing delays.

To streamline the review process and support the sprinkler installation contractor, Allianz has provided a checklist for companies to complete and return with their design review submissions. This helps ensure proposals are reviewed efficiently and without unnecessary delays.

All sprinkler contractors are to be third-party accredited by an appropriate approval body e.g. the LPCB, and designs are to be quality-assured and independently verified.

'Preliminary' or 'Provisional' status drawings are not to be submitted for approval and will not be accepted for Allianz review. Only 'For Approval' or 'Construction Issue' status designs will be accepted.

All documentation is to be emailed in PDF format.

Drawings will not be required for Allianz review under the following circumstances

- involving second fix pipework only, with no change to the total number of sprinkler
- involving no design work, no hydraulic calculations and less than 10 sprinklers fed upstream of any existing design point.

All fire protection design reviews are for Allianz underwriting acceptance purposes only. Acceptance is not a guarantee that the design complies with the applicable design standard, nor is it transferable to other parties.

Project Summary

The following details are required with each design review package:

- **Project Name:** Make sure to clearly state the name of the project.
- **Project Address:** Provide the full address where the project is located.
- **Sprinkler Contractor:** Include the name of the contractor responsible for the sprinkler installation.
- **Designer's Name:** Specify the name of the designer involved in the project.
- **Designer's Contact Details:** Provide contact information for the designer, such as phone number or email.
- **Designs Verified By:** Indicate who has verified the designs to ensure accuracy and compliance.
- **Date of Submission:** Record the date when the submission is made.
- **Project Overview & Explanatory Comments:** Offer a brief overview of the project and any additional details or comments that clarify the proposals.
- **Document Transmittal Sheet:** Detail a register of documents issued under the design review package.

Please note that it's important to include and affirm all these details in your submission. Failure to do so may result in the rejection of your proposals. If you have any questions or need further assistance, please contact Allianz Loss Control Engineering

Design Review Checklist

The following is a checklist for the sprinkler contractor to consider when submitting their design package for Allianz review. Failure to provide the information within this checklist, may result in a rejection of the design review submittal:

1. Third-Party Accreditation: The sprinkler contractor is to be accredited to an appropriate independent third-party accreditation scheme e.g. LPS1048, and approved for the specific works proposed.

2. Quality Assurance and Verification: All designs are required to undergo a thorough quality assurance review and independent verification, ensuring comprehensive details such as sprinkler spacing, sectional details etc. are included.

3. Design Information: The design package is to be in full compliance with LPC BSEN12845 clause 4.4.3 "Installation Layout Drawings"

4. Construction Issue Designs: Designs are to be finalized for construction, based on a complete site survey, including assessments of existing sprinkler protections.

5. Identification of Areas and Fire Protections: Clearly identify all areas and associated fire protections, noting any alternative protections or non-compliances. Any such non-compliances are to be submitted on a GN10 notice and/or shown on the design drawings

6. Sprinkler Spacing and Location: Provide detailed dimensions for sprinkler spacing and locations, considering structural features and obstructions, other services etc.

7. Deflector Placement: Sprinkler deflectors are to be positioned 75-150mm from structural ceilings, with compliant second-fix methods detailed.

8. Detailed Sections: Include detailed sections through each level, showing structural features, void depths, and distances of deflectors from ceilings.

9. Storage Details: Provide detailed plans for storage heights and methods, considering site-specific categorization of goods including packaging materials, all in compliance with TB217 "Categorisation of Goods in Storage"

10. Construction Details: Detail construction aspects of floors, ceilings, walls, and other relevant elements on the drawings.

11. Hydraulic Calculations: Include all necessary hydraulic calculations (Pre-Calc / FHC) and supporting information, such as water supply test results, node drawings and explanatory notes.

12. Sprinkler Specifications: Detail specifications for sprinklers, including diameter, ‚K' factor, make, model, spray pattern and quantity

13. Equipment Details: Fully detail all equipment related to sprinkler protection, such as pipework supports, valves, flexible connections etc.

Guidance Notes

When reviewing the checklist items for sprinkler system design review, it's important to consider the accompanying notes that provide additional context and clarification.

1 **Third-Party Accreditation:** It's essential that all sprinkler contractors are accredited by a third party, such as LPS 1048. Depending on their level of approval, they may either self-certify their work or require a third-party review. If a third-party review is needed, make sure to include copies of the review reports with your submission.

2 **Quality Assurance and Verification:** All designs must be thoroughly checked for quality assurance and independently verified. It's important that designers do not verify their own work. Include the full names of both the designer and the verifier on all design drawings. Additionally, review any existing sprinkler protections and address any non-compliance issues as part of the contract works. Also, detail any associated electrical works, such as power supply provisions and fire alarm system interfaces.

3 **Submission of Design Drawings:** Avoid submitting design drawings labelled as 'Preliminary', 'Provisional', or 'Subject to Survey' to Allianz for approval. If the completion of design drawings depends on site conditions, such as removing suspended ceilings, issue these drawings as soon as possible after starting on-site work. Provide written notice with anticipated issue dates and contract completion dates.

4 **Design Criteria Tables:** All elements of information required in Design Criteria Tables, are to be completed as part of the Design Review Package. Statements such as 'Not known' or 'As per existing design' etc. will not be considered acceptable

5 **Existing Pipe Work and Survey Access:** If you can't determine existing pipe work routes and sizes due to access restrictions, ensure that existing sprinkler locations are detailed with full spacing and location dimensions. Note any survey access restrictions on the design drawings. Remove pipe fabrication dimensions unless separately detailed, and exclude non-relevant details like low-level fixtures and fittings

6 **Sprinkler Selection:** When installing sprinklers, it's important to follow the current standards and provide technical justification on the drawings. This includes detailed sections, as referenced in TB229.3.23.

7 **Flexible Connections:** If you're using flexible connections for the second fix, ensure they are installed according to the manufacturer's instructions and comply with TB227.2.4.2. Only approved flexible connections will be considered acceptable. Details of such flexible connections are to be provided on the design drawings.

8 **Sectional Information:** Fully dimensioned sections through each level of the unit or area are required. These sections are to clearly depict structural features, void depths, and the distance of sprinkler deflectors from ceilings or soffits. This detailed documentation is necessary for each style of fit-out arrangement throughout the demise.

9 **Hydraulic Calculations:** When it comes to issuing pre-calculated (Pre-Calc) pressure loss statements or full hydraulic calculations (FHC) for sprinkler system installations, it's important to ensure these are provided alongside the design details. This includes any necessary supporting information like node reference drawings and water supply site performance test results.

Design review packages without supporting hydraulic calculations will not be accepted for review

For sites where pressure losses between the installation control or zone valve and the connection point cannot be established, provide evidence that these details were requested. In such cases, the pipework between the connection and the design point, or any remote array, should be sized according to the existing unit or area connection.

Where a change to the sprinkler system design does not require an updated hydraulic calculation, copies of the most recent hydraulic calculations are to be submitted in support of the design review package. Where such calculations cannot be provided, new hydraulic calculations are to be undertaken and submitted with the design review package. Statements such as "No change to design point so no hydraulic calculations required" will not be considered acceptable.

These requirements are important for ensuring that the sprinkler system design is both accurate, up to date and compliant with current standards

10 **Existing equipment:** When considering the retention of existing sprinkler equipment, it's important to thoroughly check their condition. This includes evaluating factors such as age, damage, contaminants, masking, thermal sensitivity, response type, and the potential presence of ‚O'-ring sealing mechanisms. These checks ensure that the sprinkler equipment remains suitable for continued fire protection service. If any issues are found, replacement may be necessary.

Additionally, all sprinkler equipment, whether existing or new, must be fully detailed. This includes specifying the location of pipe supports, the fixing methods and components, the type (make, model, size, etc.), and the arrangement and location of all valves and alarm/supervisory equipment.

If wiring is required for power, fire alarm interfaces, or monitoring/supervisory systems, the details of any third-party contractors responsible for these works are to be included

Sources and Further Information

RedBook Live - LPCB Red Book

Loss Prevention Certification Board (LPCB)

IFC Certification - Demonstrate Capability, Traceability & Quality

Business risk support - Allianz Insurance

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