ENGINEERS
AUSTRALIA
Society of
Fire Safety

Practice Guide
for
Inspections associated with Fire Safety Engineering Performance Solutions

Version 1, dated 15 August 2022

Prepared by
Society of Fire Safety
Engineers Australia

Contents

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This document has been produced by the Society of Fire Safety to provide guidance regarding fire safety engineering inspections within the fire safety engineering industry. The document has been developed based on input from the specific SFS committee tasked with producing this guidance. The committee chair was Alan Wilson and the document author was Chris Macdonald.

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The information contained in this Practice Guide is to be used only as a guide and is not intended to be universal or prescriptive; is intended to assist fire safety engineers in determining how to comply with statutory requirements; is subject to change without notice; and to the extent permitted by law, is provided without warranties of any kind, either express or implied.

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1. Preamble

Fire safety engineering inspections form a crucial part in ensuring that the fire safety requirements in a building design are included within the as-built condition.

Legislation across different states and territories varies with respect to the requirement for, if at all, fire safety engineering inspections. Furthermore, sufficient guidance on how to approach fire safety engineering inspections appears to be lacking.

This Practice Guide provides that guidance. It is intended to outline a methodology for undertaking fire safety engineering inspections with the aim of providing greater consistency and quality in fire safety engineering inspections to ultimately improve the quality of fire safety within buildings.

The fire safety engineer has a critical role to play from design through construction of a building for the benefit of the building stakeholders, including those who shall be most at risk from a fire within the building; its occupants.

Equally important is that the fire safety measures in a building are inspected and maintained throughout the life of the building such that they perform their intended function in the event of a fire. This is not covered in this Practice Guide but forms a critical part of fire and life safety within a building

2. Background and context

Currently there is not an industry practice guidance document that outlines how a fire safety engineering inspection should be undertaken. The approach therefore currently rests with the individuals undertaking that inspection placing a significant reliance on the expertise and competency of the individual to develop and undertake an appropriate fire safety engineering inspection. This can lead to significant variation in the way inspections are undertaken, including for example how inspection requirements are identified, the level and extent of the inspection undertaken, the methods of documenting and communicating inspection findings, and how they are addressed should any issues be identified during inspections.

This document sets out the context around fire safety engineering inspections, the scope of this document and then outlines a process that can be applied when undertaking fire safety engineering inspections.

2.1. Why fire safety engineering inspections are important

A building design is only as good as its construction.

An important part in ensuring that the building design is fully implemented is for fire safety engineering inspections to be undertaken by persons with appropriate skills and knowledge to undertake them.

This is important for maximising the potential that the fire safety engineering requirements of the building are met in the as-built condition so that the intended level of fire safety is provided.

This is a duty for those with a responsibility for fire safety engineering. Good practices with respect to fire safety engineering inspections is a means of complying with that duty.

2.2. Who is this important to/for

Fire safety engineering inspections are important to the stakeholders in a building where there are fire safety engineering requirements. This is because each stakeholder will have a vested interest in the fire safety engineering requirements being provided in the building.

Therefore, fire safety engineering inspections are of importance to the following stakeholders for the following reasons:

- **Fire safety engineers** who may have legislative duties to undertake fire safety engineering inspections depending upon the state/territory in which they are practicing. Even where they do not have legislative obligations for inspection, they do have obligations for fire safety engineering and therefore there is value in their undertaking fire safety engineering inspections.
- **Other professionals** who may have responsibilities related to the design, construction and maintenance of fire safety items within a building who may have requirements to undertake fire safety engineering type inspections.
- **Approval authorities** who may also have legislative duties to inspect fire safety engineering elements of a building
- **Building owners/operators** who may have an interest in understanding industry practice with respect to fire safety engineering inspections.
- **Local authorities** who may have legislative duties to inspect fire safety engineering elements of a building and/or an interest in understanding industry practice with respect to fire safety engineering inspections.
- **Fire and Rescue Service** who may have an interest in understanding industry practice with respect to fire safety engineering inspections.
- **Occupants/Society** who are the persons ultimately likely to suffer the consequences of poor construction and lack of fire safety engineering inspection diligence.

2.3. Where does this document sit within the legislative framework

This document can be viewed as an industry practice guidance document in relation to fire safety engineering inspections.

Specifically, where there is a legislative requirement for fire safety engineering inspections, this document is intended to operate as guidance material and not supersede any legislative requirements for fire engineering inspections.

Adherence to this document provides a means of evidencing good practice with respect to undertaking fire safety engineering inspections.

2.4. Scope

The purpose of this document is as follows:

1. To outline the legislative requirements for fire safety engineering inspections in the states and territories across Australia
2. To outline a process that can be applied for undertaking fire safety engineering inspections irrespective of legislative requirements

The overall aim of this document is to clearly outline the legislative requirements at the time of preparing this document and provide a process that can assist in providing greater clarity and ultimately consistency in the undertaking of fire safety engineering inspections.

This document is intended for fire safety engineers but may provide a useful reference guide for other persons with fire safety engineering responsibilities.

3. Definitions

The following definitions are provided to assist in understanding and interpreting this Guide.

- **Active fire safety measures** – systems that require some amount of action or motion in order to work efficiently in the event of a fire.
- **National Construction Code of Australia (NCC)** – the "umbrella" building code, under which fire engineering tends to use the Building Code of Australia (BCA) Volume 1 and 2.
- **Building Code of Australia (BCA) report** – a report often provided by an appropriate person respective to state/territory legislation that outlines the relevant BCA fire safety measures to be applied to a development and specific departures from the DtS Provisions of the BCA where a Performance Solution is proposed to be used to achieve compliance with the BCA.
- **Cause and effect matrix** – refers to the documentation that outlines the programming of a fire detection system with respect to inputs and outputs i.e., detection activation resulting in other systems/equipment relied upon to operate on detection of a fire event.
- **Certifying** – the act of attesting that something meets the requirement(s).
- **Commissioning** – the process by which it is determined that the installed system meets the defined requirements.
- **Confidence check** – is a sample check to a level that is satisfactory to provide sufficient confidence to the person undertaking the check that the relevant requirements have been met.
- **Construction work** – any work carried out in connection with the construction, alteration, conversion, fitting-out, commissioning, renovation, repair, maintenance, refurbishment, demolition or dismantling of a structure.
- **Deemed-to-satisfy (DtS)** – the provisions as outlined in the BCA which are deemed to satisfy the Performance Requirements.

- **Performance based design brief (PBDB)** – a documented process that defines the scope of work for the fire safety engineering analysis and the basis for analysis as agreed by stakeholders.
- **Fire safety engineering inspection** – the process of undertaking inspections related to fire safety engineering requirements to confirm as far as is determined to be necessary by the fire safety engineer that the fire safety engineering requirements have been implemented to the as-built building condition.
- **Fire engineering report (FER)** – fire engineering report which details the formulation and analysis of the fire safety design solutions against the fire safety objectives developed in the PBDB process.
- **Fire safety engineering requirements** – the requirements of the fire safety engineering design as detailed within the fire engineering report. They are typically a combination of DtS requirements and Performance Solutions.
- **Fire safety engineer** – an appropriately qualified and experienced practitioner who, through sound and robust engineering practice, provides services that achieve reductions of risk for life for people in structures, reduction in property and environmental damage from structure fires, and the implementation of fire safety codes and regulations.
- **Fire safety management** – encompasses the whole of the management of fire safety. It is the management activities that ensure that the incidence of fire in a building is minimised, but that, when a fire does occur, all of the passive, active and procedural fire safety systems are in place and operating properly.
- **Passive fire safety measures** – is a group of systems that compartmentalize a building through the use of fire (and/or smoke) resisting walls/floors.
- **Performance Solution** – is a method of complying with the BCA Performance Requirements other than by a DtS solution.
- **Approval authority** – refer to specific legislation for each state.
- **Stakeholders** – As relevant to this Practice Guide, a person(s) or entity that has an interest in the fire safety engineering in the building.
- **Verifying** – the act of substantiating that something achieves a requirement(s).

4. Application

4.1. Where/when this Guide is to be applied

This document is intended to be applied where it is required to verify that a fire safety engineering design has been implemented in an as-built condition. This may be a legislative or contractual obligation or requirement.

- This may be in the following scenarios as examples:
    - During the construction of a development
    - At the completion of construction of a development
    - In an existing building where it is intended to verify elements of the fire safety engineering design (noting that there may be additional considerations for existing buildings e.g., the condition of fire safety engineering elements of the design, the requirements at the time of construction and others).

Fire safety engineering inspections should be undertaken by those that are competent to do so.

4.2. Where/when this Guide should not be applied/limitations of its application

This Guide may be applied in a number of situations and is not expressly limited in its application however the user, who is assumed to have duties as a professional with respect to fire safety engineering inspections, must satisfy themselves that this guidance is appropriate for their intended use.

4.3. Who should use this Guide

This document should be used by:

- Those responsible for certifying/verifying fire safety engineering designs during and/or at the completion of construction, or existing building fire safety arrangements, and who meet their respective state legislation requirements for competency; or
- Those responsible for certifying/verifying fire safety engineering designs during and/or at the completion of construction or existing building fire safety arrangements, and who have relevant competency to undertake that work where no state legislation defines requirements for competency[1].

This document is provided only with respect to fire safety engineering inspections, however its principles may be of use to other disciplines regarding their own respective inspections.

5. State specific legislation governing inspections

The following section outlines the applicable legislation and regulations for each respective state at the time of authoring this guidance document.

It should be read as a guide only and not an exhaustive review of all relevant legislation and regulations.

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[1] In this respect competency is considered to be persons who have recent and relevant education, training, experience, knowledge, professionalism, integrity and other qualities to enable them to carry out their duties to an effective standard. They will understand and follow appropriate work practices, be aware of their own limitations and be capable and willing to obtain the necessary competency where required. It is assumed that they will have suitable procedures in place to ensure the provision of quality, usable information and outputs related to their work.

Legislation and regulations are continuously changing, and it is the responsibility of the fire safety engineer/any user of this document to understand and comply with their relevant legislative obligations.

5.1. Legislation/regulations

Table 1 outlines the relevant legislation for each respective state.

Table 1: Relevant legislation and regulations

State	Relevant legislation/Regulations
New South Wales	NSW Environmental Planning & Assessment Act 1979 NSW Environmental Planning & Assessment Regulation 2021 NSW Environmental Planning & Assessment (Development Certification and Fire Safety) Regulation 2021 NSW Building and Development Certifiers Act 2018 NSW Building Development Certifiers Regulations 2020 NSW Building Design and Practioners Act 2020 NSW Building Design and Practioners Regulations 2021
Victoria	Victorian Building Act 1993. Victorian Building Regulations 2018. Professional Engineers Registration Act 2019
South Australia	South Australia, Development Act 1993 South Australia, Development Regulations 2008
Tasmania	Tasmania Building Act 2016. Tasmania Building Regulations 2016.
Western Australia	Western Australia Building Act 2011 Western Australia Building Regulations 2012
Queensland	Queensland Building Act 1975 Queensland Building Regulation 2006
Australian Capital Territory	ACT Building Act 2004 ACT Building Regulations 2008
Northern Territory	Northern Territory Building Act 1993 Northern Territory Building Regulations 1993 Northern Territory Fire and Emergency Act 1996 Northern Territory Fire and Emergency Regulations 1996

5.2. Associated guidance

Additional guidance that may provide further information in relation to undertaking site inspections:

- AS 4655 (2005) Fire Safety Audits. This standard sets out an approach to undertaking fire safety audits. This standard is now repealed, however may still provide useful guidance and context for undertaking fire safety inspections.
- AS 1851 (2012) Routine service of fire protection systems and equipment. This standard sets out guidance in relation to ongoing maintenance of fire safety measures. Whilst not specifically relevant to fire engineering inspections, it may provide useful context around inspection of fire safety measures.

6. Methodology

6.1. Overview

This section presents a methodology for undertaking fire safety inspections.

The methodology identifies key stages in the process from design to final inspection at which the fire safety engineer shall undertake work to provide a clear auditable process for the undertaking of a fire safety engineering inspection.

The overall objective of inspection is that the fire safety engineer is satisfied, on reasonable grounds, that the requirements of the FER have been achieved. It is therefore important that the fire safety engineer is in possession of, and has read and understood, the relevant fire safety documentation (for example FER, BCA report, compartmentation drawings, cause and effect matrix, etc), in order to undertake the fire safety engineering inspection

The fire safety engineer is only responsible for the items required of them under relevant legislation or contractual obligations. Inspections undertaken and inspection recommendations identified within this Practice Guide are not mandatory, and it is intended this methodology is a guide that shall be interpreted and applied as appropriate by the fire safety engineer for the specific project. The responsibility for confirming legislative compliance is not superseded by any recommendations within this document.

Inspections shall be carried out by fire safety engineers possessing suitable experience and qualifications and who meet the relevant legislative requirements to undertake inspections where applicable. Where inspections are undertaken by other engineers (e.g., junior staff) then this shall be at the discretion and under the overall responsibility and supervision of the relevant experienced, qualified and where relevant, legally responsible fire safety engineer.

6.1.1. Extent of inspection

The extent of inspection may be driven by legislative requirements or contractual requirements, and these should take precedence over any extent of inspection outlined in this document.

However, before considering undertaking a fire safety inspection, it is important to consider what will be inspected and how much is to be inspected. This ultimately should be determined by the fire safety engineer for the project using their professional engineering judgement based on the specific particulars of the project. In determining the extent of inspection, the following may be considered:

DtS and Performance Solutions

A building's fire safety design, developed in accordance with the NCC, will comprise a combination of DtS fire safety provisions and performance-based fire safety solutions.

The DtS Provisions are typically those designed into the building's fire safety design by the architect or other members of the design team. The performance-based solutions are typically those that are designed for the building's fire safety design by the fire safety engineer for the project.

Overall, these elements form the building's fire safety strategy. As is often the case, fire safety engineering Performance Solutions will to some degree rely on other parts of the fire safety design being provided in accordance with the DtS Provisions. Therefore, there is some level of reliance on the DtS provisions in the fire safety engineering design.

On the basis of the above, the following is recommended in relation to the extent of inspection for DtS and Performance Solutions:

Sufficient inspection of fire safety items relied on in the fire safety engineering design must be undertaken to give confidence that the requirements of the fire safety engineering design are met.

In relation to achieving this, it is recommended that the following guidance be applied:

- All explicit requirements of any fire safety engineering Performance Solutions shall be subject to inspection
- Particular attention shall be given to innovative or unique aspects of the fire safety engineering design
- Any DtS requirements expressly relied on in the fire safety engineering design shall be inspected
- A confidence check of any DtS items not expressly relied on in the fire safety engineering design. This may include:
    - A test of the fire detection and alarm system to confirm the building receives a fire alarm to initiate evacuation
    - A check that means of egress is available from the building so that occupants would be able to evacuate
    - A check that compartmentation appears to generally be provided as required in the design so that fire would likely be restricted and key escape routes (e.g., fire-isolated stairs) are provided

- A visual check of the external façade of the building (predominantly to identify any potential areas of combustible cladding that may not have been picked up as part of the fire safety engineering noting that combustible cladding may not be apparent. The intent is to identify any noticeable combustible cladding e.g., timber)
- A check that, if provided in the design, sprinklers are provided. Where provided a test of the sprinkler system should be undertaken, e.g., testing to confirm receipt of signal at panel and associated ancillary equipment such as pumps operating. Note - this would not be a test involving discharge of water
- A check that, if provided in the design, hydrants are provided to enable a means of fire brigade intervention

Ultimately the fire safety engineer has a duty of care to inform relevant stakeholder of fire safety issues should they be observed during the inspection process.

Formal approval, design, commissioning and certification of specific systems is the responsibility of others, however should be considered and reviewed for completeness and accuracy by the fire safety engineer as relevant to the fire safety engineering inspection.

Volume of inspection

A building's fire safety design comprises fire safety features which are provided throughout the building. These may be individual and bespoke fire safety features ranging to repeated fire safety features throughout the building.

These fire safety features are typically designed and installed into the building by a range of persons in the design team. There is a responsibility for the builder to co-ordinate and ensure that the as constructed arrangement includes all of the required fire safety features. It is however still important that there is a level of confidence that the fire safety engineering requirements have been implemented into the as-built arrangement.

On the basis of the above, the following is recommended in relation to the volume of inspection undertaken for DtS and Performance Solutions:

Sufficient inspection of fire safety items relied on in the fire safety engineering design must be undertaken to give confidence that the requirements of the fire safety engineering design have been implemented within the as-built condition.

In relation to achieving this, it is recommended that the following guidance be applied:

- Where an item is individual (i.e., it is not a repeatable item) this shall be inspected in all instances
- Where an item is repeated (i.e., the exact same item is present in more than one instance in the building) it is recommended that at least a minimum % of the occurrences should be checked as determined to be appropriate by the fire safety engineer

The volume of inspection is predominantly related to the explicit fire safety engineering requirements and any explicitly relied on DtS requirements within the fire safety engineering solution.

The volume of inspection undertaken with respect to a confidence check of any DtS items not expressly relied on in the fire safety engineering Performance Solutions should be determined the fire safety engineer undertaking the fire safety engineering inspections.

6.1.2. Inspection approach

Following an understanding of what will be inspected it is important that those undertaking inspections understand how an inspection should be undertaken. This is considered to comprise one, or a combination of, **visual inspections, documentation inspection and witness testing.** These are inspection methods which form an inspection approach to confirming fire safety engineering requirements. These inspection methods are further detailed in the following sections:

Visual inspection

Visual inspection is a means of confirming that what is provided appears to satisfy the fire safety engineering requirements. It is a means of giving confidence that the works appear to have been completed.

It will involve attending site to physically observe fire safety measures.

A visual inspection could be in the form of

- Physical site inspection
- Photographic evidence
- Video evidence

Multiple visual inspections may be required to close out the fire safety engineering requirements. It may also be required that visual inspections are undertaken at specific stages of an installation e.g., before an item becomes hidden. When undertaking on site visual inspections, a checklist of items can be helpful to co-ordinate the inspection.

Destructive testing has not been included within this Guide on the basis that destructive testing is typically for a bespoke/specific reason. Where destructive testing is thought to be necessary, this is at the discretion of the fire safety engineer. It may typically be necessary in situations where a key element of the fire safety strategy is not visible and therefore destruction of something is required to gain visual access or the material properties of a building component are required to be verified by testing.

Documentation checking

Documentation checking is a means of evidencing that an item has been completed and satisfies the fire safety engineering requirements. It is a means of demonstrating that the work has been completed.

It will typically involve a desktop review of relevant paperwork for fire safety engineering requirements.

Documentation checking could comprise:

- Drawings
- Certificates
- Management plans
- Design confirmations
- Fire matrices
- Test reports
- Engineers' reports
- Correspondence
- Commissioning reports

Multiple documentation checks may be required to close out the fire safety engineering requirements.

Witness testing

Witness testing is a means of evidencing that the required functionality of active fire safety systems is provided and that it satisfies the fire safety engineering requirements. It is a means of proving that the work has been completed.

It will typically involve attending site and witnessing the activation of fire safety systems to observe their operation.

Witness testing may involve:

- Development of a test plan
- Activation of the fire detection system and observing the required operation of other systems/equipment relied upon to operate on detection of a fire event
- Hot/cold smoke testing
- Simulating specific fire safety engineering requirements

Multiple witness tests may be required to close out the fire safety engineering requirements. This may be due to the size of the project and the requirements, due to items being incomplete/not working as required at the time of witnessing, a staged phasing of the systems integration and handover, or many other reasons.

The need and extent of witness testing is at the discretion of the fire safety engineer and will often involve consideration of the fire safety systems provided and their complexities. Generally, it is more significant where the fire safety engineering design explicitly relies on active fire safety systems and therefore testing of the systems operation is fundamental.

6.2. Process

Fire safety engineering inspections are typically only considered and undertaken at the end of a project once the building has been completed. This limits the ability of the fire safety engineer to confirm that the fire safety engineering requirements have been implemented into the as-built condition.

The process for completing a fire safety engineering inspection does not need to be limited to the end of a project and may be enhanced through consideration at the outset and followed through in a logical process.

The following sections outline a process for considering and undertaking fire safety engineering inspections from the design phase through to the construction completion.

6.2.1. Design

A buildings design is only as good as its construction. So, to improve the design of a building, the fire safety engineering design documentation should give consideration to how it will be confirmed that the construction meets the design requirements.

PBDB

The PBDB is a point in the design where the principles of the fire safety engineering strategy are being outlined.

The key items that should be considered at this stage in relation to assisting when it comes to undertaking a fire safety engineering inspection are:

- The solution requirements
    - The actual fire safety engineering solution requirements are important as these detail what must be provided to meet the fire safety engineering requirements. Solution requirements shall typically be one or a combination of passive, active and management measures. A clear understanding of the solution requirements enables an appreciation of the extent of inspection (DtS and Performance Solutions – see Section 6.1.1) that may need to be undertaken.
- The location of the fire safety engineering solutions
    - The location of the fire safety engineering solutions being applied is important as it enables the scale of the inspection to be understood. It assists with enabling an appreciation of the extent of inspection (volume of inspection – see Section 6.1.1) that may need to be undertaken.
- The evidence required to confirm the requirements are met
    - The evidence required to confirm the requirements are met is important as this gives clarity to what will be needed to confirm that the as-built arrangement is consistent with the requirements of the fire safety engineering. A clear description of the inspection approach (visual, documentation and witness testing – see Section 6.1.2) to be applied to

each fire safety engineering solution requirement enables a better understanding for all parties involved in the process and de-risks the completion process.

By considering the above, the extent of inspection and the inspection approach can be clearly outlined at the PBDB stage and then developed in the FER stage.

FER

The FER is the finalised design document for the building where the fire safety engineering solution requirements are documented.

At this stage it would be advantageous to have developed the key items from the PBDB stage as this then provides clear requirements to the stakeholders in terms of what is required of them to enable verification of the fire safety engineering design in the as-built condition.

This approach then enables the fire safety engineer to confirm through the inspection approach when items have been satisfied on reasonable grounds and what remains outstanding.

Guidance in relation to site specific risk assessment is provided in Appendix 6.3.A.2.

6.2.2. Preparation

Before any inspection is undertaken there should be a preparation phase.

The purpose of the preparation phase is to develop an inspection plan. The inspection plan should be communicated to the relevant stakeholders (likely to be the builder) so that it is clear what is required to enable the fire safety engineering inspections.

Following on from the PBDB and FER stages, a good understanding of the requirements (DtS and Performance Solutions), location (volume of inspection) and evidence required (visual, documentation and witness testing) is already established. The inspection plan then builds on these items to provide a more detailed approach to how the inspection will be completed and the fire safety engineering requirements of the building verified as being provided.

An inspection plan should consider the following as a minimum:

Health and safety/access

Site safety is imperative, and a site inspection should not be undertaken unless all relevant health and safety requirements have been met.

When considering a site inspection, you may want to consider:

- Has a site specific risk assessment been completed and are you comfortable to attend site?
- Do you have contact details for a site contact?
- Is there any advance paperwork/credentials that may need to be completed (e.g. inductions and specific state/territory health and safety training certificates)?
- Are there any constraints affecting which areas you may access and has your inspection been co-ordinated accordingly?
- Do you require any information prior to attending site?

- What equipment/personal protective equipment (PPE) do you require?

This is not an exhaustive list and reference should be made to relevant codes of practice and any employers guidance.

Guidance in relation to site specific risk assessment is provided in Appendix 6.3.A.2

Programme

It is important to understand when and how the building will be completed. This should develop an understanding of when the respective fire safety engineering solution requirements will be constructed through the construction programme to the point of completion where all fire safety engineering requirements have been implemented.

Once an understanding of the construction programme of fire safety engineering requirements is understood, the aim is to develop an inspection plan for the fire safety requirements (passive, active and management measures) that aligns with the building programme. This should consider:

- Passive fire safety measures:
  - Work in progress inspections that may be required. This will require an understanding of the fire safety engineering requirements with respect to the construction programme as elements that may require inspection could be concealed as the construction work progresses. This is particularly relevant to any visual inspections that may be required to be undertaken and should be considered by the fire safety engineer.
  - Final inspections that may be required. This will require an understanding of the fire safety engineering requirements and the completion date of the project so that these elements can be inspected and confirmed to facilitate the construction programme. This is particularly relevant to visual inspections and documentation checking.
- Active fire safety measures:
  - Single system testing may be required where it is required to prove the performance of an individual fire safety engineering active system before its integration. This is typically testing to confirm that the individual sub-system and its interfaces operate correctly (e.g., fire detection device sends signal to the fire detection control and indicating equipment and other systems/equipment relied upon to operate on detection of a fire event receives a signal). The benefit of having some oversight of single system testing is that this can help to give confidence for integrated systems testing. This may only be required for larger projects where reducing risk at the final integrated systems testing stage is considered of value. This is particularly relevant to documentation checking and witness testing.
  - Systems interface testing may be required where it is intended to prove that the building fire detection system and other systems/equipment relied upon to operate on detection of a fire event operate as a whole for the building as per the design arrangement. This phase is about demonstrating that the installed detection system and other systems/equipment relied upon to operate on detection of a fire event operate as required. This is particularly relevant to documentation checking and witness testing.

- Fire safety management:
    - Operational management requirements and confirmation that these have been understood and will be provided. This is particularly relevant to visual inspection and documentation checking.

It is important to note that some fire safety measures may have an active and a passive fire safety measure check. For example, a fire curtain may involve visual inspection of the curtain installation, documentation checking to confirm it meets the fire resistance performance and has been commissioned, and witness testing to prove its operation.

An example of an inspection plan is provided in Appendix 6.3.A.2

Recording/evidencing/documentation

After outlining an inspection plan it is important to understand how that inspection will be captured. This part of the inspection plan should identify what evidence will be captured to be able to demonstrate completion of items from the inspection list and how this will be recorded and communicated. This may want to consider items such as:

- Record keeping of what was inspected and what was not inspected
- The use of digital technology as a means of recording findings
- The use of photographs/videos to evidence visual inspections of items
- Identification of observations or other notes on plan drawings to assist in location identification
- The use of other tools such as measurement devices to record measurements (e.g., distances)

6.2.3. Inspection

After developing an inspection plan and communicating this with the relevant stakeholders the actual fire safety engineering inspection should be undertaken as per the inspection plan. This is likely to require both off-site and on-site work.

Off-site work will typically involve undertaking documentation checking of the solution requirements. This will typically be sourcing documentation to confirm items of the fire safety engineering solution requirements.

On-site work will typically involve undertaking visual inspections of items and witness testing. This will typically be attending site to inspect and to test to confirm items of the fire safety engineering solution requirements.

It is likely that a fire safety engineering inspection will require to look at all manner of passive, active and fire safety management measures including:

- Structural fire resistance
- Compartmentation
- Means of egress

- Fire safety systems
- Fire brigade intervention
- Fire safety management

These measures shall likely be required to be inspected by using one, or a number of the inspection approach methods (visual, documentation and witness testing).

It is important therefore that the fire safety engineering inspection looks appropriately at each of the items required to be inspected as identified in the design and preparation phase of the process.

Guidance in relation to what to inspect for each of the fire safety features is provided in Appendix 6.3.A.3

6.2.4. Post inspection

Following a completion of the inspection it is important to record the findings of the inspection and communicate these findings to the relevant stakeholders.

This should consider the following:

Record keeping

All findings from an inspection should be retained as evidence of the inspection. The purpose of this is to create a clear audit trail of the inspections undertaken, the findings against the fire safety engineering requirements and the status of the fire safety engineering item with respect to its completion.

A fire safety engineer shall make a decision after carrying out an inspection whether or not the fire safety engineering requirements implementation was satisfactory. A fire safety engineer must clearly document reasons for such decisions, that include:

- The decision that was made
- The reasons for making that decision
- The findings of fact that the reasons were based upon
- The evidence for those findings

This is especially important where an inspection is not satisfactory or further documentary evidence is required to verify compliance. An inspection could be considered unsatisfactory where in the opinion of the fire safety engineer:

- The building or building works related to the fire safety engineering requirements are incomplete or not all components of such works were able to be inspected
- The building works are not consistent or not in accordance with the fire safety engineering requirements
- Further confirmation or verification is required with regard to the installation method, products used, or the like

- Records of defect remediation i.e., photographs, or other means deemed appropriate are required

The inspection records must be kept from the date of inspection for the number of years required by legislation in the respective state/territory.

Reporting

The findings from the inspection should be communicated to the relevant stakeholders so that any necessary action for completion/rectification can be undertaken. The reporting should include:

- The address of the property at which the inspection was carried out
- The identity of the fire safety engineer who is verifying the fire safety engineering solution requirements
- The fire engineering report against which the inspection was undertaken
- A statement on whether the inspection satisfactorily evidences that the fire safety engineering requirements have been met
- Whether re-inspection is required
    - Where appropriate, completion of minor outstanding works can be verified by emails, photographs etc. provided by the builder, approval authority, project manager or service installer or other appropriate persons
- The date(s) and findings from the inspection(s)
- Any limitations from the inspection undertaken should be explicitly included. This might include items such as:
    - Areas/items that were not accessible
    - Testing that was not able to be undertaken

An example template inspection findings letter is provided in Appendix 6.3.A.4.

6.3. Conclusion

Fire safety engineering inspections play an important role in ensuring the as-built condition reflect the fire safety engineering design as well as assisting in setting the benchmark for future maintenance and testing. This in turn improves the quality of fire safety within buildings.

Adherence to the principles and process outlined in this Practice Guide will provide a means of undertaking consistent fire safety engineering inspections.

Appendix A. Inspection process guidance – examples

A.1. Design

When considering the inspection requirements at the design phase. There are three key things to consider as outlined in Section 6.2.1.

How these are communicated will be developed by the respective fire safety engineer for the project and should be done so in consultation with the relevant project stakeholders.

In terms of this guidance however, it is recommended that the PBDB and FER provide the following:

- A table or similar listing:
    - The Performance Solution identifier - this could be a reference number, description of Performance Solution or other identifier
    - The Performance Solution requirements (extent of inspection). This should document two things:
        - The requirements of the solution (the DtS and Performance Solution requirements); and
        - The location in which the Performance Solution is being applied (typically best presented in an accompanying set of drawings)
    - The evidence required (inspection approach). This should identify what is required to be undertaken/provided and should consider this in terms of:
        - Visual inspection
        - Documentation checking
        - Witness testing

An example is provided in the table and diagram below. The above approach and example are indicative and the fire safety engineer for the respective project should consider their application to their respective project and tailor the presentation to suit the fire safety engineering solution requirement for the particular project.

The table below outlines the Performance Solutions that are being applied to this project and the specific requirements for those solutions. The evidence required to enable confirmation that the solution requirements have been implemented into the as-built condition is also provided. The table should be read in conjunction with the associated drawings provided with this fire engineering report.

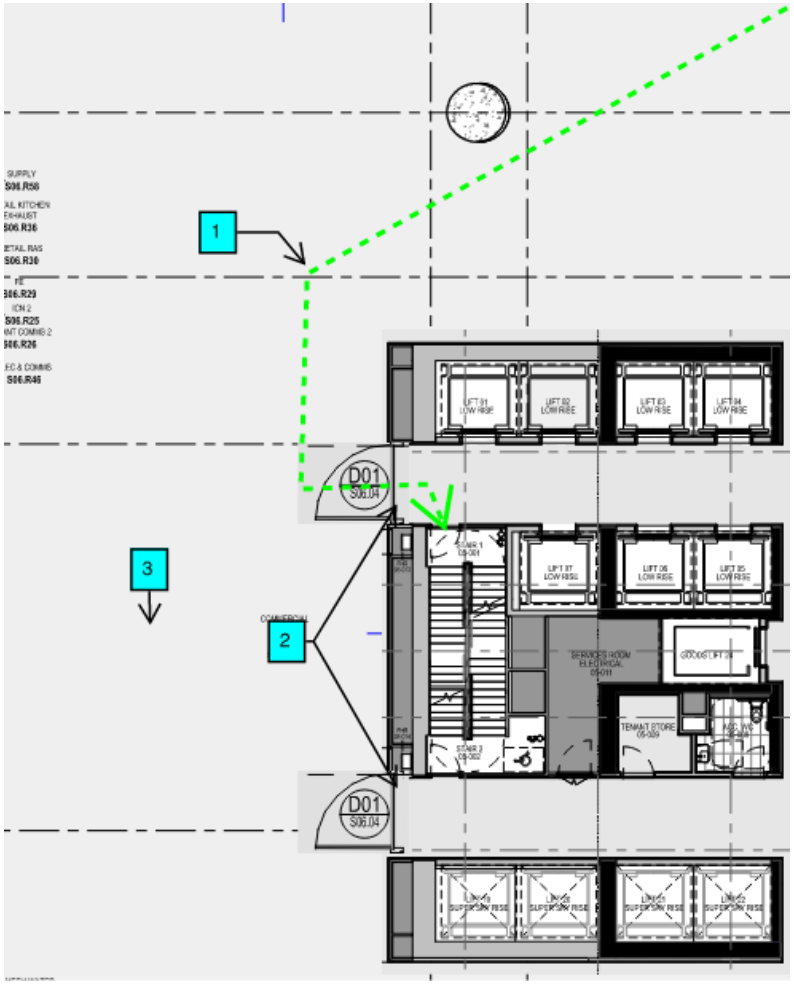
Table 2: Example table of fire safety engineering requirements and evidence required

Solution reference	***Solution description***	***Solution requirements***	***Evidence required***
1	*Travel distances to an exit*	*Smoke detectors are to be provided in accordance with AS 1670.1:2018 on the office floor plate with 8 m spacing.*	*Visual inspection of travel distance* *Visual inspection of smoke detection provided on 8m spacing* *Design/installation certification to confirm detection system has been designed and installed in accordance with the requirements of the fire engineering report* *Witness testing:* - *Activate detector at location of reduced spacing and travel distance performance solution to confirm correct operation*
2	*Door swing against the direction of escape*	*Pull signage on door which open against direction of egress. The signage shall state "PULL" in capital letters not less than 20 mm high in a colour contrasting with the background*	*Visual inspection of signage*
3	*Alarm cascade*	*1st phase:* - *Floor of fire origin sounds evacuate immediately* - *Floor above and floor below sound alert* *2nd Phase* - *Floor above and floor below fire origin sound evacuate* - *Next floor above and below enter alert*	*Building cause and effect matrix and fire alarm zone drawings* *Design/installation certification to confirm detection system has been designed and installed in accordance with the requirements of the fire engineering report* *Witness testing:* - *Activate detector on Level 1 and observe fire alarm cascade*

Solution reference	Solution description	Solution requirements	Evidence required
		The cascade shall repeat until all floors have evacuated	- *Activate smoke detector on Level 3 and observe fire alarm cascade* - *Activate sprinkler system on Level 2 and observe fire alarm cascade* - *Activate emergency call point and observe fire alarm cascade*
The following general fire safety requirements are applied to the fire safety design		*Fire detection system in accordance with XX*	*Visual inspection to confirm detection system provided* *Documentation that certifies the systems design and installation* *Witness testing to prove the detection system operates*
		Fire alarm system in accordance with XX	*Visual inspection to confirm fire alarm system provided* *Documentation that certifies the systems design and installation* *Witness testing to prove the alarm system operates*
		Means of egress in accordance with the BCA	*Visual inspection to confirm means of egress provided* *Documentation that certifies means of egress systems design and installation* *Witness testing prove means of egress systems operation*
		Fire hose reels in accordance with XX	*Visual inspection* *Documentation that certifies the systems design and installation*
		Fire extinguishers in accordance with XX	*Visual inspection* *Documentation that certifies the systems design and installation*
		Structural fire protection achieving XX	*Visual inspection* *Documentation that certifies the systems design and installation*
		Compartmentation providing XXX	*Visual inspection*

Solution reference	*Solution description*	*Solution requirements*	*Evidence required*
			Documentation that certifies the compartmentation systems design and installation *Witness testing of any active fire safety systems that provide compartmentation*
		Internal linings in accordance with the BCA	*Visual inspection* *Documentation that certifies the systems design and installation*
		External wall construction in accordance with the BCA	*Visual inspection* *Documentation that certifies the systems design and installation*
		Fire suppression in accordance with XX	*Visual inspection to confirm fire suppression system provided* *Documentation that certifies the systems design and installation* *Witness testing to prove the fire suppression system operates*
		Smoke hazard management in accordance with XX	*Visual inspection to confirm smoke hazard management system provided* *Documentation that certifies the systems design and installation* *Witness testing to prove the smoke hazard management system operates*
		Means of fire brigade access and intervention in accordance with the BCA	*Visual inspection* *Documentation that certifies the systems design and installation*
		Fire safety management in accordance with XXX	*Visual inspection* *Documentation that confirms the fire safety management provisions have been understood and incorporated into the fire safety management plan for the building*

Example drawing identifying Performance Solution locations



A.2. Pre inspection planning

Prior to undertaking any site inspection, any individual going to site should undertake, or be appraised of the risks of attending site and the control measures that are to be implemented.

The following is a guide that may be used in the absence of any specific company policy or guidance with respect to site specific risk assessments and health and safety obligations. It is the responsibility of the individuals and the employers of those individuals that necessary measures are taken to ensure their health and safety whilst at work.

Anyone attending site should be familiar with the respective health and safety requirements which supersede any guidance provided in this document.

Table 3: Guidance on site specific risk assessments

Question	Answer	Control measure (if required)
Is site attendance required? *Why are you going and for what purpose?*		
Do you feel fit and healthy to attend site? *Are you putting yourself in danger?* *Are you putting others in danger?*		
What are you going to site to do and are you undertaking any work that is not covered by your training? *What does your training cover?* *Are you experienced with this kind of site?*		
Have you attended this site before and are you familiar with the site conditions? *Is it completed building, existing building, construction, demolition?* *Are there risks from hazardous materials?*		
Who is the site contact, and will you be accompanied at all times?		

Question	Answer	Control measure (if required)
Do you have any other persons attending site with you that you are responsible for and have you given them sufficient instruction and guidance with respect to their safety? *Have you briefed them on risks and control measures?* *Have they understood the briefing and are satisfied with attending site?*		
Have you informed a fellow team member or individual where you are going? *This is strongly recommended if you are attending site on your own.*		
Are you satisfied with attending site to undertake the activities you shall be undertaking? *You must be able to answer in the affirmative or you should not be attending site.*		
Are you satisfied with other persons for whom you are responsible for attending site to undertake the activities they shall be undertaking? *You must be able to answer in the affirmative or you should not be attending site.*		

The health and safety site specific risk assessment should be re-visited prior to every site visit to check its relevance. Any alterations should be documented and communicated.

It is then recommended that an inspection plan is developed in conjunction with the relevant stakeholders. The intent of the inspection plan is to outline in more detail what inspections are required and plan when these will be undertaken. This should build upon the information communicated in the design phase by looking in more detail at what specific inspection requirements are needed for each item. It should also contain a detailed list of witness testing that is required. An example of how this might look is provided below.

Table 4: Example of an inspection plan

Solution reference	***Solution description***	***Solution requirements***	***Evidence required***	***Inspection requirements (examples)***
1	*Travel distances to an exit*	*Smoke detectors are to be provided in accordance with AS 1670.1:2018 on the office floor plate with 8 m spacing*	*Visual inspection to confirm detection system provided* *Documentation that certifies the systems design and installation* *Witness testing*	*Visual inspection of travel distance* *Visual inspection of smoke detection provided on 8 m spacing* *Design/installation certification to confirm detection system has been designed and installed in accordance with the requirements of the fire engineering report* *Activate detector at location of reduced spacing and travel distance performance solution to confirm correct operation.*
2	*Door swing against the direction of escape*	*Pull signage on door which open against direction of egress. The signage shall state "PULL" in capital letters not less than 20 mm high in a colour contrasting with the background*	*Visual inspection to confirm signage provided*	*Visual inspection of signage*
3	*Alarm cascade*	*1st phase:* - *Floor of fire origin sounds evacuate immediately* - *Floor above and floor below sound alert* *2nd Phase* - *Floor above and floor below fire origin sound evacuate* - *Next floor above and below enter alert* *The cascade shall repeat until*	*Documentation that certifies the systems design and installation* *Witness testing to prove the alarm system operates*	*Review of building cause and effect matrix and fire alarm zone drawings to confirm alarm cascade has been incorporated into design* *Design/installation certification to confirm detection system has been designed and installed in accordance with the requirements of the fire engineering report* *Test 1 - Activate detector on Level 1 and observe fire alarm cascade* *Test 2 - Activate smoke detector on Level 3 and observe fire alarm cascade* *Test 3 - Activate sprinkler system on Level 2 and observe fire alarm cascade*

Solution reference	Solution description	Solution requirements	Evidence required	Inspection requirements (examples)
		all floors have evacuated		*Test 4 - Activate emergency call point and observe fire alarm cascade*
The following general fire safety requirements are applied to the fire safety design		*Fire detection system in accordance with XX*	*Visual inspection to confirm detection system provided* *Documentation that certifies the systems design and installation* *Witness testing to prove the detection system operates*	*Visual inspection in ceiling void prior to ceiling installation* *Visual inspection of completed installation* *Certification of design and installation to be provided at completion* *Test 1 – activate detector on ground floor to observe signal receipt at panel* *Test 2 – activate detector on 2nd floor to observe signal receipt at panel*
		Fire alarm system in accordance with XX	*Visual inspection to confirm fire alarm system provided* *Documentation that certifies the systems design and installation* *Witness testing to prove the alarm system operates*	*Visual inspection of completed installation* *Certification of design and installation to be provided at completion.* *Test 1 – activate fire detector and observe alarm* *Test 2 – activate sprinkler system to observe alarm* *Test 3 – activate manual call point to observe alarm*
		Means of egress in accordance with the BCA	*Visual inspection to confirm means of egress provided* *Documentation that certifies means of egress systems design and installation* *Witness testing prove means of egress systems operation*	*Visual inspection of all escape routes at completion* *Certification of design and installation for shutter provided at completion* *Test 1 – detector activation and observe shutter power open*
		Fire hose reels in accordance with XX	*Visual inspection* *Documentation that certifies the systems design and installation*	*Visual inspection of a sample of hose reel installations across all storeys* *Certification of design and installation to be provided at completion.*
		Fire extinguishers in	*Visual inspection*	*Visual inspection of a sample of extinguishers*

Solution reference	Solution description	Solution requirements	Evidence required	Inspection requirements (examples)
		accordance with XX	*Documentation that certifies the systems design and installation*	*installations across all storeys* *Certification of design and installation to be provided at completion.*
		Structural fire protection achieving XX	*Visual inspection* *Documentation that certifies the systems design and installation*	*Visual inspection of intumescently painted steel columns prior to enclosure by wall constructions* *Visual inspection of completed concrete construction* *Certification of design and installation for intumescent painted structural steel protection at completion* *Design confirmation from structural engineer to confirm FRL of concrete structure*
		Compartmentation providing XX	*Visual inspection* *Documentation that certifies the compartmentation systems design and installation* *Witness testing of any active fire safety systems that provide compartmentation*	*Visual inspection existing masonry separating walls between tenancies* *Visual inspection of a sample of compartment walls and fire stopping prior to ceiling installations* *Visual inspection of a sample of completed compartment walls* *Design confirmation from structural engineer to confirm FRL of existing masonry wall between tenancies*
		Internal linings in accordance with the BCA	*Visual inspection* *Documentation that certifies the systems design and installation*	*Visual inspection of internal linings for any obvious hazards* *Design confirmation from architect/contractor that linings meet the requirements*
		External wall construction in accordance with the BCA	*Visual inspection* *Documentation that certifies the systems design and installation*	*Visual inspection of external wall* *Certification of design and installation to be provided at completion.*
		Fire suppression in	*Visual inspection to confirm fire*	*Visual inspection in ceiling void prior to ceiling*

Solution reference	Solution description	Solution requirements	Evidence required	Inspection requirements (examples)
		accordance with XX	*suppression system provided* *Documentation that certifies the systems design and installation* *Witness testing to prove the fire suppression system operates*	*installation* *Visual inspection of completed installation* *Certification of design and installation to be provided at completion*
		Smoke hazard management in accordance with XX	*Visual inspection to confirm smoke hazard management system provided* *Documentation that certifies the systems design and installation* *Witness testing to prove the smoke hazard management system operates*	*Visual inspection of completed installation* *Certification of design and installation to be provided at completion*
		Means of fire brigade access and intervention in accordance with the BCA	*Visual inspection* *Documentation that certifies the systems design and installation*	*Visual inspection of completed installation of hydrant system and booster* *Certification of design and installation for hydrant system and booster to be provided at completion*
		Fire safety management in accordance with XXX	*Visual inspection* *Documentation that confirms the fire safety management provisions have been understood and incorporated into the fire safety management plan for the building in use*	*Visual inspection of building fire safety schedule* *Confirmation from building owner/operator that fire engineering report has been read, understood and will be incorporated into the building fire safety management plan* *If measures have been implemented by the time of inspection - Visual inspection of fire safety management provisions*
Required completion date - *Number of visual inspections anticipated –* *Number of witness testing visits anticipated –*				

A.3. Inspection

When actually undertaking an inspection there will be a combination of on-site and off-site checks that need to be undertaken.

Off-site will typically involve checking documentation. On-site will typically involve visual inspection and witness testing.

Table 5 below offers guidance on what to inspect for each fire safety measure.

Table 5: Inspection guidance

	Visual inspection The aim of the visual inspection is to confirm that what is provided appears to satisfy the fire safety engineering requirements. It is a means of giving confidence that the works appear to have been completed	**Documentation evidence** The aim of the documentation evidence is to evidence that an item has been completed and satisfies the fire safety engineering requirements. It is a means of evidencing that the work has been completed.	**Witness testing** The aim of the witness testing is to confirm that the required functionality of active fire safety systems is provided and that it satisfies the fire safety engineering requirements. It is a means of proving that the work has been completed.

Structure
The aim is to confirm that the structural protection provided satisfies the requirements of the fire safety engineering
	• Inspect condition of structural fire protection (i.e., boarding, intumescent paint, concrete cover etc). Damage could include:
	  ○ Defective boarding/wrapping
	  ○ Damaged intumescent paint
	  ○ Fixings to intumescent paint
	• Inspect any other structure items that may be required by any specific fire safety engineering solution
		For applied fire protection:
		• Certification of installation that confirms the applied protection achieves the required fire resistance rating
		For existing structure (e.g., masonry)
		• Design confirmation or certification from the structural engineer or other competent person
			There is unlikely to be any witness testing requirement for structural fire protection

Compartmentation The aim is to confirm that the compartmentation provided satisfies the requirements of the fire safety engineering	• Inspect the provision of compartmentation with respect to compartment size • Inspect condition of fire (and/or smoke) rated walls and floors,	Confirmation/certification that design complies with the relevant standards and/or fire engineering reports Confirmation/certification that installation complies with the relevant standards and/or FERs	Witness testing may include activating the fire detection system to observe: • Fire curtain closes • Smoke curtain closes • Fire doors held open release and

	Visual inspection The aim of the visual inspection is to confirm that what is provided appears to satisfy the fire safety engineering requirements. It is a means of giving confidence that the works appear to have been completed	**Documentation evidence** The aim of the documentation evidence is to evidence that an item has been completed and satisfies the fire safety engineering requirements. It is a means of evidencing that the work has been completed.	**Witness testing** The aim of the witness testing is to confirm that the required functionality of active fire safety systems is provided and that it satisfies the fire safety engineering requirements. It is a means of proving that the work has been completed.
	which may include: o Compartment walls o Stairs, lobbies & risers o Slab o Smoke walls • Inspect the condition of firestopping (including fire stopping at the slab edge) • Inspect the condition of cavity barriers • Inspect the condition of fire (and/or smoke) damper installations • Inspect condition of fire resisting ductwork • Inspect the condition of fire (and/or smoke) doors • Inspect the condition of fire curtains • Inspect the condition of smoke curtains • Inspect the condition of fire resisting glazing • Inspect elevation and proximity to		close • Motorised fire (and/or smoke) dampers close • Other testing that may be required by any specific fire safety engineering solution

	Visual inspection The aim of the visual inspection is to confirm that what is provided appears to satisfy the fire safety engineering requirements. It is a means of giving confidence that the works appear to have been completed	**Documentation evidence** The aim of the documentation evidence is to evidence that an item has been completed and satisfies the fire safety engineering requirements. It is a means of evidencing that the work has been completed.	**Witness testing** The aim of the witness testing is to confirm that the required functionality of active fire safety systems is provided and that it satisfies the fire safety engineering requirements. It is a means of proving that the work has been completed.
	other buildings and/or boundary • Inspect the external wall construction materials • Inspect the internal lining materials • Inspect any other compartmentation items that may be required by any specific fire safety engineering solution		
Means of egress The aim is to confirm that the means of egress provided satisfies the requirements of the fire safety engineering	• Inspect the provision of escape routes • Inspect the suitability of escape routes • Inspect the provision of emergency exit signage (is it visible and clear where escape routes are?) • Inspect travel distances • Inspect the provision of available egress widths • Inspect the hardware on doors along the escape route • Inspect for any door override features • Inspect the door swing direction along escape routes	Specifically for emergency exit signage: • Confirmation/certification that design complies with the relevant standards and/or FERs • Confirmation/certification that installation complies with the relevant standards and/or FERs	Witness testing may include activating of the fire detection system to observe: • Doors on escape routes powering open • Curtains on escape routes opening • Other requirements that may be required by any specific fire safety engineering solution

	Visual inspection The aim of the visual inspection is to confirm that what is provided appears to satisfy the fire safety engineering requirements. It is a means of giving confidence that the works appear to have been completed	Documentation evidence The aim of the documentation evidence is to evidence that an item has been completed and satisfies the fire safety engineering requirements. It is a means of evidencing that the work has been completed.	Witness testing The aim of the witness testing is to confirm that the required functionality of active fire safety systems is provided and that it satisfies the fire safety engineering requirements. It is a means of proving that the work has been completed.
	• Inspect the external route from the building • Inspect any other means of egress items that may be required by any specific fire safety engineering solution.		
Fire safety systems The aim is to confirm that the fire safety systems provided satisfies the requirements of the fire safety engineering	• Inspect the provision of the fire detection system • Inspect the provision of the fire alarm system • Inspect the provision of the fire suppression systems • Inspect the provision of the smoke hazard management systems • Inspect the provision of the emergency lighting • Inspect the provision of the emergency power supply • Inspect any other systems interfaces that may be required by any specific fire safety engineering solution	Confirmation/certification that design complies with the relevant standards and/or FERs Confirmation/certification that installation complies with the relevant standards and/or FERs	Witness testing may include activating the fire detection system (smoke detection, heat detection, manual call point, sprinkler system or other initiating event as appropriate) to observe: • Fire detection activation received at the fire panel • Fire alarm broadcast as per the design • Smoke hazard management system operates • Automatic gas shut off operates • Alarm signalling equipment operates • Other requirements that may be required by any specific fire safety engineering solution. Additional activation of the fire alarm

	Visual inspection The aim of the visual inspection is to confirm that what is provided appears to satisfy the fire safety engineering requirements. It is a means of giving confidence that the works appear to have been completed	Documentation evidence The aim of the documentation evidence is to evidence that an item has been completed and satisfies the fire safety engineering requirements. It is a means of evidencing that the work has been completed.	Witness testing The aim of the witness testing is to confirm that the required functionality of active fire safety systems is provided and that it satisfies the fire safety engineering requirements. It is a means of proving that the work has been completed.
			system by other means to observe the above such as: • Towns mains pressure failure simulation • Power loss simulation (likely required to observe emergency lighting if considered necessary) • Emergency warning call points activation (note this is unlikely to operate any other systems except the alarm system)
Fire-fighting equipment and fire brigade intervention The aim is to confirm that the means for fire brigade intervention provided satisfies the requirements of the fire safety engineering	• Inspect vehicle/pedestrian access arrangements into the site and around the building • Inspect water supply arrangements i.e., booster • Inspect the access arrangements into the building • Inspect the provision of hydrants in the building • Inspect the provision of fire hose reels • Inspect the provision of fire extinguishers • Inspect the fire panel for any	Confirmation/certification that design complies with the relevant standards and/or FERs Confirmation/certification that installation complies with the relevant standards and/or FERs	Witness testing may include: • Activating hydrant pumps • Activating any override facilities provided at the fire panel • Undertaking a hydrant flow test

	Visual inspection The aim of the visual inspection is to confirm that what is provided appears to satisfy the fire safety engineering requirements. It is a means of giving confidence that the works appear to have been completed	**Documentation evidence** The aim of the documentation evidence is to evidence that an item has been completed and satisfies the fire safety engineering requirements. It is a means of evidencing that the work has been completed.	**Witness testing** The aim of the witness testing is to confirm that the required functionality of active fire safety systems is provided and that it satisfies the fire safety engineering requirements. It is a means of proving that the work has been completed.
	tactical fire plans • Inspect any override facilities provided at the fire panel (e.g. smoke exhaust fan overrides) • Inspect any other fire brigade intervention items that may be required by any specific fire safety engineering solution		
Fire safety management The aim is to confirm that the fire safety management arrangements provided satisfies the requirements of the fire safety engineering	In a new building, operational fire safety management requirements are likely to not be implemented at the time of inspection Within existing buildings which are operational the following may also be beneficial to inspect • Inspect for condition of housekeeping • Inspect for any high hazard areas • Inspect operational and maintenance records	Inspect fire safety management plan to confirm that the fire safety management requirements of the design have been understood and captured Inspect fire safety schedule to confirm the fire safety design requirements have been captured	There is unlikely to be any witness testing requirement for fire safety management.

A.4. Template inspection findings letter

After completion of an inspection the findings of that inspection need to be communicated to the relevant persons.

It is considered that the completion of an inspection may:

1. Be an interim inspection whereby the construction work on the project is not completed and the fire safety engineering requirements are therefore at that time not fully implemented
2. Be a final inspection whereby the construction work on the project is completed and the fire safety engineering requirements are therefore implemented

The letter below is provided as a template for a final inspection whereby the construction work is completed.

The purpose of the letter is to communicate this to the relevant persons.

In addition, if the process outlined in this document has been followed, an auditable trail of how the fire safety engineering requirements have been evidenced to be met can also, and should, be provided.

Where an interim inspection is undertaken, the structure and format of the template letter could be used however the wording should be modified accordingly.

Fire safety engineering – inspection letter

This letter details the findings for the inspection of the installed fire safety measures for the project referenced as follows:

Project and address……

Date of inspection…….

The purpose of this letter is to outline the findings from site inspection (s) undertaken by, or on behalf of:

Name…….

Registration number (where applicable) ……..

Organisation…….

The inspection (s) undertaken have been to confirm that the as-built condition is consistent, as far as could be reasonably ascertained, with the requirements of the relevant fire engineering report (s) listed below

……

Based on the findings of the inspection (s) undertaken by the aforementioned person against the fire engineering report as referenced, the construction works are

completed and consistent / incomplete and therefore not consistent (delete as appropriate)

with the fire safety engineering requirements of the fire engineering report.

Re-inspection is required Y/N

Signed…… Date……

The findings from the inspection are as follows:

……

……

The following limitations apply to the inspection and confirmation as stated above

……

……