Appendix H

Fire Protection

It is not expected that a fire risk assessor will carry out any engineering evaluation or examination of detailed design of passive or active fire protection systems or equipment, but such systems and equipment should be considered in terms of their suitability for the premises, and requirements in respect of appropriate maintenance and necessary testing.

A competent fire risk assessor must have the ability to identify correctly the passive and active elements of fire protection/design and their role in the provision of fire safety in the premises. This will include how they may interact e.g. if the fire alarm system triggers a door release mechanism to release held open doors to the closed position.

The sub-appendices below identify the elements that should be used to evaluate the competence of fire risk assessors.

Accordingly the fire risk assessor should be able to:

1. Determine the need for fire protection systems and equipment;
2. Identify any major failings in the level of passive and/or active fire protection provided by existing systems and equipment from documentation, by observation and, where necessary inspection of measures that are not immediately visible;
3. Write a brief outline requirement for new or upgraded systems and equipment, within the action plan of the fire risk assessment
4. Demonstrate an ability to correctly identify the purpose, function and suitability of passive or active elements of fire protection/design.
5. Understand the availability and value of third party certification schemes for persons, systems and products.

To enable the fire risk assessor to carry out an appropriate risk assessment they must have regard to the passive and active systems installed within the premises and any necessary interaction between the two.

Reference should be made to the following sub appendices:-

Appendix H1 – **Passive fire protection**
Appendix H2 – **Active fire protection**

Appendix H1 – Passive fire protection

The fire risk assessor should have a knowledge and understanding of the role in the provision of fire safety, including the types of fire performance requirements (load bearing capacity, integrity, insulation, reaction to fire performance etc.) of the following:-

Fire protection to structural frame

- The significance of any immediately visible damage.

Fire resisting walls, floors and ceilings forming escape routes

- Their location in the building.
- The need to maintain the fire resistance:
    - of and above any suspended ceilings.
    - below any raised floors.
    - where they are penetrated by services (cables, pipes, ducts etc.).

Cavity barriers

- Their location in the building.
- Their importance in particular types of premises construction.

Fire-resisting glazing

- Its location in the building.
- Types of fire resisting glazing and relevant limitations in the use of non-insulating types.
- The significance of any immediately visible damage and the need to repair it.

Fire doors and furniture

- The importance of correct fitting of the door in the frame including door gaps.
- The importance of suitable fire rated ironmongery e.g. self-closing devices, latches etc..
- The need for appropriate intumescent protection:
    - around the periphery of the door leaf.
    - to ironmongery.
    - to glazing.
- The provision and condition of any smoke seals.
- The ability to self-close.
- The ability of any door retention device to release e.g. on the operation of any fire alarm/detection system (from documented maintenance records/checks).
- The assistance of any third party labelling in ascertaining the above.
- The limitations on techniques for upgrading fire door performance e.g. using intumescent coatings, self-adhesive intumescent strips etc..

Fire-resisting dampers (mechanical or intumescent)

- Their location in the building.
- Their operation (from maintenance records).
- Their operation as part of any smoke control system (from maintenance records/checks).

Fire-resisting ductwork

- Its location in the building.
- The need to maintain the fire resistance where it penetrates compartment and/or fire resisting walls/floors by the use of suitable penetration seals.

Fire-resisting service ducts and shafts

- Their location.

Fire fighting shafts and stairwells

- Their location in the building.

Penetration seals for pipes, cables and other services

- Their location in the building.
- Their visible condition including the use of unsuitable repairs.
- The use of sealing systems not supported by test evidence relevant to the end use of the product.

The building envelope, e.g. fire-resisting external walls, curtain walls

- The significance of their role in protecting external escape routes at boundaries.
- The significance of any immediately visible damage.
- The importance of remedying any immediately visible damage in sandwich panel constructions using combustible insulating cores.

Wall and ceiling linings in escape routes

- The significance of extensive over painting.
- The significance of large quantities of combustible items (notice boards, notices etc.).

Appendix H2 – Active fire protection

The fire risk assessor should;

For Fire Detection and Alarm (FD&A) Systems and Voice Alarm Systems:

- Be able to determine the appropriate category of FD&A system to match the risks for a (non domestic or domestic) premises.
- Be able to determine the circumstances where a Voice Alarm system is appropriate for the risks.
- Understand how FD&A systems interlink with other systems and equipment.
- Understand the need for door release mechanisms to fail safe and the need for ancillary equipment.
- Understand the circumstances in which there is a need for a connection to an alarm receiving centre.
- Be aware of the importance of avoiding false alarms, and have an awareness of elementary measures for their avoidance.
- Be aware of available adaptations to FD&A systems for deaf and hard of hearing people.
- Understand how phased evacuation and staged alarm systems interact.
- Be aware of the basic requirements for siting manual call points.
- Understand the common types of detectors and their limitations.
- Understand the common alarm devices and their limitations.
- Be aware of situations in which cables should be fire resisting.
- Be aware of the need for zone plans and their value to the Fire and Rescue Service.
- Be aware of the certificates that should be issued by “Competent Persons” and key points contained in them.
- Understand the appropriate frequency and nature of routine testing and maintenance.

For Emergency Voice Communication systems (EVC):

- Understand the need for, and purpose of, EVC systems.
- Be aware of the main components and their locations.
- Understand the appropriate frequency and nature of routine testing and maintenance.

For Emergency Escape Lighting (EEL):

- Be aware of the common forms of EEL system, their principles of operation (i.e. self contained and central systems) and modes of operation (maintained & non maintained).
- Be aware of limitations in the use of standby generators.
- Understand situations where maintained EEL is necessary.
- Be aware of the basic requirements for positioning of luminaires and understand the meaning of “Point of Emphasis”.
- Be aware of the relationship between EEL and signs.
- Be aware of the certificates that should be issued by “Competent Persons” and key points contained in them.
- Understand the appropriate frequency and nature of routine testing and maintenance.

For First Aid Fire Fighting Equipment:

- Have an understanding of the situations in which fire fighting equipment are necessary.
- Have an understanding of the different fire extinguishing agents, their applications and limitations.
- Have an understanding of the different roles of portable fire fighting equipment and hose reels.
- Be aware of the basic requirements for selection, provision and siting of fire fighting equipment.

- Understand the appropriate frequency and nature of routine inspection and maintenance.

For Fire Suppression systems:

- Be aware of the common forms of fire suppression systems and their principles of operation.
- Be aware of the situations where an automatic fire suppression system is necessary for compliance with legislation or for life safety purposes.
- Be aware of the basic guidance for siting of devices such as sprinkler heads.
- Be aware of the certificates that should be issued by “Competent Persons” and key points contained in them.
- Understand the appropriate frequency and nature of routine testing and maintenance.

For Smoke Control systems:

- Understand the different types and roles of smoke control systems that may be found in premises and their principles of operation.
- Be aware of the situations where a smoke control system is necessary for compliance with legislation or life safety.
- Be aware of the certificates that should be issued by ’Competent Persons’ and key points contained in them.
- Understand the appropriate frequency and nature of routine testing and maintenance.

For Access and Facilities for the Fire and Rescue Service:

- Understand the types of, and need for, access and facilities for the Fire and Rescue Service.
- Understand the appropriate frequency and nature of routine testing and maintenance.