

Automatic Fire Detection

Understanding the Risk

In the event of a fire, delayed fire detection can lead to an increase in risk both to life and property. An adequately designed, installed, monitored and maintained automatic fire detection system can help mitigate this risk by providing an early fire warning, which will enable a timely evacuation of the protected premises and the prompt notification of the fire brigade.

Related Loss Statistics

According to statistics collated by the Fire Protection Association: -

- 80% of all fires start between 6pm & 8am, when most premises are unoccupied.
- Over the period 2009 to 2016 total losses sustained from fires occurring between 6pm and 8am exceeded £750m.

For those premises, which are unoccupied overnight and are not protected by an adequate automatic fire detection system there is clearly an increased risk of loss or damage as a result of delayed fire detection and fire brigade notification.

System Design

Automatic Fire Detection systems should be designed to the latest enforceable version of BS5839. BS5839 describes two system types, based on the systems purpose and extent of coverage i.e. life protection & property protection.

Life Protection Systems

Life protection systems are designed primarily to meet life safety objectives, by providing an early fire warning at the protected premises, enabling a timely evacuation to take place and thereby reduce the risk of personal injury / loss of life. They are divided into the following 5 system types depending on the extent of the coverage provided.



Typical automatic fire alarm panel

(AFD = Automatic Fire Detection)

- L1 classification includes automatic fire detection in all rooms, on all escape routes and in all voids over 800mm in height.
- A L2 system should include automatic fire detection on all escape routes and rooms leading onto escape routes. An L2 system can also include additional areas deemed as a high risk not included in the escape routes and adjoining rooms, such as boiler houses.
- An L3 system is very similar to a category L2 system in that automatic fire detection should be positioned on escape routes and adjoining rooms, although it does not have to include for additional areas deemed to have a high fire risk, but can be extended to those.
- An L4 system includes automatic fire detection on escape routes only, and not in the adjoining rooms.
- A L5 system is designed for buildings that have a particular fire risk identified which warrants some special attention.

There is a further system type denoted M which relates to manual fire alarms only, call points are generally found on escapes routes and staircases.

Property Protection Systems

Property protection systems are designed primarily to meet property protection objectives, by providing an early fire warning so that an effective fire-fighting response can be initiated as soon as possible, including notification of the fire brigade. They are divided into 2 system types depending on the extent of the coverage provided.

- P1 AFD installed throughout all areas.
- P2 AFD installed to a lower level of protection, with detection only in specified parts of the building to provide early warning of fires in areas of high fire risk, or where the risk to property or business continuity from fire is high.

For full business protection a comprehensive level of detection is preferred which equates to P1 type system. Contact your local AIG risk engineer.

Installation & Maintenance

To ensure a high level of competency and adherence to standards systems should be installed and maintained annually by a Loss Prevention Certification Board LPS1014 Certified Fire Detection & Alarm System Firm – see www.redbooklive.com for further details.

Monitoring

In order to ensure the earliest possible fire brigade response, automatic fire detection systems should be monitored at a permanently manned location e.g. an approved alarm receiving centre particularly systems designed to meet property protection objectives.

Monitoring should be continuous such as that provided by the BT RedCARE system - for further guidance on acceptable forms of automatic fire alarm monitoring contact your local AIG risk engineer.

In connection with remotely monitored fire alarm systems, it should be noted that the Fire & Rescue Service can reduce their attendance level response to systems, in the event of excessive numbers of false alarms and in some circumstances they may withdraw their response altogether.

In order to avoid excessive numbers of false alarms a responsible person should be appointed for the system whose duties should include.

- Ensuring the system is in good working order and properly maintained.
- Ensuring that staff with responsibilities for the system have received adequate training.
- Dealing with faults and false alarms quickly and efficiently.
- Ensuring that any changes likely to affect the system are properly managed to avoid future problems.
- Ensuring the alarm system provide confirmed alarm notification; this means that a second alarm signal must be received by the alarm receiving centre within a specified time period in order to summon the fire brigade.

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