

# Critical considerations

**Alan Oliver** introduces a method for categorising fire doors to assist with the correct specification, maintenance and inspection of these critical fire safety systems

**F**IRE DOORS are very familiar pieces of equipment with which building owners and occupiers will regularly interact. However, their complexity is often overlooked by the various people involved in the specification, procurement, installation, maintenance and inspection process.

They also differ in two main ways from other well recognised fire safety components such as fire alarm systems, fire extinguishers, sprinkler systems and emergency lighting. Firstly, while the majority of other fire safety systems are not in frequent day-to-day use, fire doors are opened, wedged, banged, and otherwise used and abused on a daily basis. Furthermore, unlike other fire safety components, fire doors are more often than not installed, inspected and maintained by people with no specific training or qualifications.

The recent complaints from social housing residents about Stoke City Council was not a big surprise to those

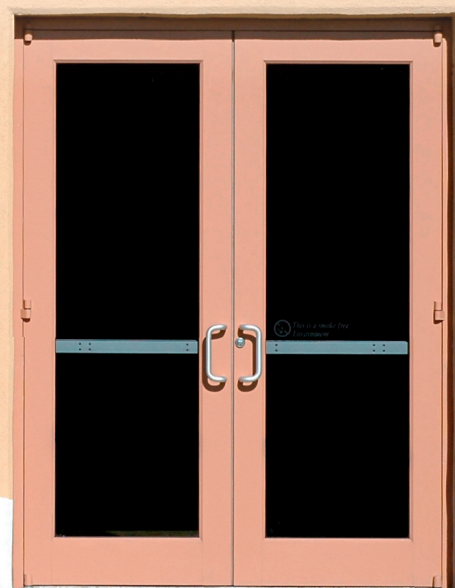
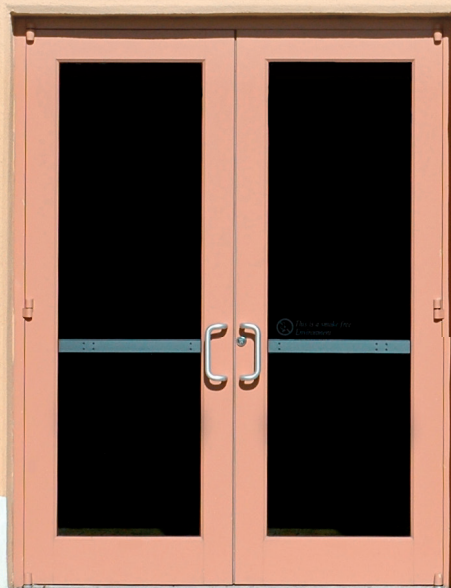
within the fire door industry. The council had hundreds of new fire doors fitted, none of which were found to be fire compliant following expert inspection.

## Appropriate specification

Fire doors are often delivered as part of a sub-contract joinery package, and are soon abandoned to their fate. Too often they will start to fail well before their assumed life expectancy, and this often results from inappropriate specification, incorrect installation and poor maintenance.

However, by examining key fire door considerations at the specification stage, it is possible to identify where issues can and often do occur.

Obviously, aesthetics will be a main consideration. For this reason, there is frequently a quality and finish demarcation determined by which doors will be 'front of house' and which are 'back of house'. This may also



impact on whether the doors should be made from wood, laminate, steel, aluminium, glass, composite or other materials.

The fire rating will also be seen as an essential factor. Will the required fire integrity be 30 minutes, 60 minutes or something else? And is there test evidence to prove that those fire ratings will be achieved? Hopefully, specifiers will also be aware that in certain parts of the building, such as refuge areas, there will also be a need for smoke seal capability.

There are two other essential considerations that are often overlooked but could have an important influence on whether what is procured and installed will be suitable and sufficient thereafter. These are:

- criticality – not all fire doors protect the same level of hazard and some are more critical to the overall level of fire safety within the building than others
- usage – not all fire doors are subject to the same level of usage

If these important factors of criticality and usage are fully considered and understood at the specification stage, it is more likely that doors appropriate to the occupancy and use will be specified.

### Fire door categorisation

It should be possible for a designer, fire engineer, building owner, occupier or risk assessor to classify the fire doorsets in a building into four categories, as follows:

1. critical and high usage
2. critical and low usage
3. non-critical and high usage
4. non-critical and low usage



Building occupiers can tailor their maintenance regimes to the criticality and usage of each door

When doing so, it will be necessary to take into account the strategic importance of the building (and therefore to what extent property and business continuity is a key consideration), as well as the evacuation strategy. For example, in determining which doors are critical in a building with a 'stay put' policy for evacuation, adequate protection for fire and rescue service personnel in the event of a major fire incident needs to be factored in.

Doorsets in existing occupied buildings can also be categorised in this way, in order to help prioritise which doors require most attention, as well as the level and frequency of inspection that may be required.

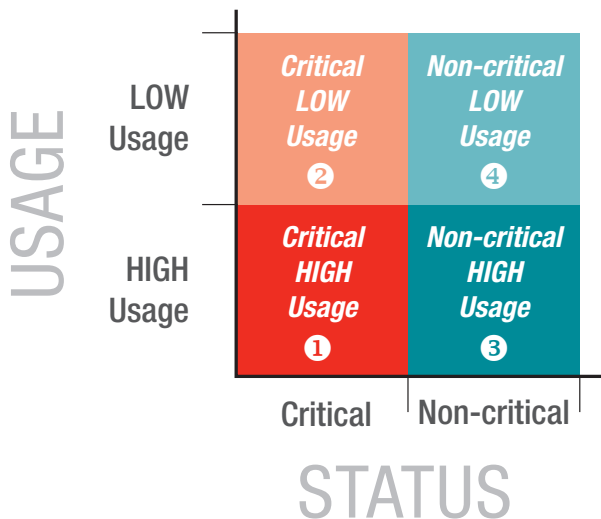
#### Critical and high usage

Those looking to make a significant impact on both the fire safety and future maintenance costs of a building should focus on these doors, as they could seriously affect life safety. For example, in university halls of residence they will be cross-corridor, stairwell and kitchen doors.

These kinds of doors must be installed correctly and then effectively managed and maintained, but because they are subject to high traffic usage, they are likely to undergo high levels of 'wear and tear'. An unambiguous planned preventative maintenance (PPM) scheme is appropriate for such doors, and issues to be considered include:

- can and should they be held open to create easy access and prevent damage?
- should they have a higher quality specification than other doors in the building?
- should they be inspected to a higher standard than other doors, especially at installation/handover?
- do they comply with Building Regulations Approved Document M: *Access to and Use of Buildings* (ADM)?
- should they be inspected more regularly than other doors in the building?
- should they be independently inspected and certified?
- is an effective PPM scheme in place?

## FIRE DOOR CHECKmaterix™





### **Critical and low usage**

These doors may also potentially have a significant impact on life safety, property protection and business continuity, but will not be subject to high traffic usage. They would typically be riser cupboard, boiler room, communications room and roof void access doors. Those forming and protecting refuge areas may also come under this category.

Because at least some of these doors are low profile, even when they are hidden away, it is important to focus sufficient care and attention on their inspection and management, particularly during installation and handover. Issues to be considered include:

- what is a suitable and sufficient specification?
- should they be fitted with a door closer?
- should they be kept locked?
- what is appropriate door signage?
- should they be inspected to a high standard at installation/handover?
- how often and to what standard do they require inspection thereafter?
- do they (especially for refuge area doors) require controlled leakage rates for door threshold gaps?
- should they be and are they ADM compliant?
- should glazing offer heat protection as well as fire integrity?

### **Non-critical and high usage**

There is unlikely to be a large volume of internal fire doors coming under this category. Examples might include toilet doors or doors to a library on a sub-compartment wall line. For these doors, there should be a focus on both easy access and quality of specification in order to prevent excessive long-term maintenance costs. Issues to be considered for such doors include:

- should they be fitted with a 'hold-open' device, where appropriate?
- what is a suitable and sufficient specification?
- are they ADM compliant?
- should they be inspected to a high standard at installation/handover?
- what frequency and level of inspection is appropriate thereafter?

### **Non-critical and low usage**

In halls of residence, hotels or care homes, they would typically be individual bedroom doors; in a house of multiple occupation (HMO) they may be individual flat doors; and in a hospital or university possibly office doors.

These doors should still be functional fire doors, especially in terms of cold smoke protection, and in an ideal world fully compliant and certified. However, in the real world, fire doors in an existing building that have been assessed and risk rated in this category do not require the same level of inspection as those assessed as critical. By definition, their remediation and the general attention required to ensure that they are fully compliant is not as critical to life safety.



Issues to be considered for these doors include:

- are they fire doors?
- what is the lowest acceptable specification?
- to what extent must they be ADM compliant?
- is there a high acoustic requirement?
- what level of inspection is required at installation/handover?
- what level of inspection is appropriate thereafter and how often should this be done?
- is the owner/occupier of the premises aware of its role and function as a fire door, and has this been communicated in writing?

## **Important considerations**

By using this method to categorise fire doors, specifiers should be able to make more appropriate choices, while building occupiers will be able to tailor their maintenance and inspection regimes to take into account the criticality and usage of each door.

During the assessment, fire doorsets must not be considered in isolation, as other fire and smoke separation elements – such as fire walls, glazed panels and fire barriers – need the same rigour of inspection, maintenance and management.

The categorisation of doors should be open to regular review, especially if the occupancy, usage or nature of the building changes over time. It is also recommended that any assessment of doors made in this way is shared with other stakeholders, such as fire and rescue services and insurance companies, as their agreement should provide confirmation that the assessment is both suitable and sufficient.

Above all, if those responsible for the building are unable, unclear or unwilling to risk rate fire doorsets in this way, every doorset in the building must be thought of as critical; then specified, procured, risk assessed, managed and maintained accordingly ■

**Alan Oliver is director of Checkmate Fire Solutions.**  
**For more information visit [www.checkmatefire.com](http://www.checkmatefire.com)**

# CHECKMATE FIRE



Checkmate is a specialist passive fire protection installation and survey company, providing professionally managed, cost effective fire compliant services nationally to a wide range of clients.

As founder members of the BRE / LPCB passive fire protection certification scheme we operate as two divisions; Compliance providing inspection and other consultancy services and Solutions for 3<sup>rd</sup> Party Accredited installations.

## Fire Compliance

Checkmate's 'Fire Compliance' Division helps organisations to achieve passive fire protection compliance. The services offered range from formulating specifications at the design stage to inspections at completion. In existing buildings we can assist with a menu of services that include the creation of fire strategy drawings, inspection of fire walls and fire doors and the air leakage testing of rooms or areas where airtightness of the structure is a critical requirement for life safety, property protection or business continuity.



*Unlike any other item of fire safety equipment installed in our buildings, fire doors are often subject to high levels of use which make them especially vulnerable to the effects of wear and tear. Add to this the potential for damage, either accidental or deliberate.*

## Fire Solutions

Checkmate's 'Fire Solutions' Division provides a range of 3<sup>rd</sup> Party Accredited passive fire protection installation services that include firestopping, linear gap sealing, air sealing, acoustic sealing, dry-lined wall and ceiling installations, Alufire fire resistant glazed partitions, fire door installation and remediation, intumescent paint spraying, cladding to structural steels, installation of fire barriers in roof, ceiling, raised floor and curtain wall voids and high pressure / water repellent seals.



*Many occupied buildings have had refurbishments and installation of various types of services with inadequate fire stopping installed. Our skilled installation team can remediate this kind of scenario to ensure compliance is met for your building.*

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Fire  
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