A Guide to Fire Doors
Fire doors are a key part of a building’s passive fire protection, playing a twin role in providing a method of evacuation while also preventing a blaze from spreading room to room. As such a key component of fire safety, designated fire doors are subject to the legal obligations and regulations detailed in the Regulatory Reform (Fire Safety) Order 2005 (new builds are also subject to relevant building regulations).

Installation and maintenance must be carried out by a professional, while all components and sections of the fire door should meet certified standards.
A universal term for all structural aspects and access points of a building that prevent the spread of fire, passive fire protection often utilises compartmentalisation in order to separate different spaces and contain any fire that breaks out. While fire doors are one of the easier examples of passive fire protection to identify, others include fire-resistant walls, glass and floors, as well as items such as grease ducts and vents above cooking equipment that limit the buildup of oils and fats.
Specifically intended to stop the spread of fire and smoke throughout a building, the design of fire doors is crucial, and regulations must be met by both the door itself and its frame. Timber frames (usually oak) are the most common, although aluminium, steel and even glass sections are also used.

Fire doors within a premises should be identified as such, and certification comes in the form of a selection of rigorous tests to confirm fire resistance levels, carried out in accordance with either BS 476: Part 22: 1987 or BS EN 1634-1: 2000.

The tests take in every element of the door’s design, including glazing, seals, frames and any other features, such as letterboxes.
The seal that sits around the edge of the door frame is as vital to the prevention of fire spreading as every other component. These seals are intumescent, meaning that they expand under the influence of heat, and remain inactive (passive) until needed. Fire door seals are most effective in stopping the transmission of smoke throughout a building - one of the key causes of fatality in a commercial fire - and are available in either low pressure or high pressure designs.
For those fire doors with glass sections, fire-resistant glazing is key to upholding safety and structural integrity. Glass that has not been treated to be fire resistant will crack, and can sometimes explode outwards, causing obvious safety hazards and eradicating any effectiveness of a fire door.

Fire-resistant glass provides at least an hour’s worth of defence from heat and flames, allowing fire doors to have windows for light transference without compromising their ability to provide passive fire protection.
Regular inspection and upkeep of fire doors is not only vital for ensuring safety, it is also a legal requirement. Professionals should be called upon for this task, carried out at frequencies of six months at a minimum.

The intumescent seals that line the door frame are a key part of this maintenance process, and should be replaced immediately if they are found to be damaged, while any mechanical components, such as hinges, handles, locks etc. should be inspected for wear and tear.

Tests that doors can close effectively must be carried out, particularly for those doors with automatic swing free designs. In high capacity buildings with regular foot traffic through doors, this is essential, as doors may fail to close due to obstructions or faults with the seals.
While fire doors should be fitted as part of any new commercial build, there are instances where older buildings may need their current access options upgraded to increase passive fire protection or to comply with legal requirements.

Upgrading is more effective with a full replacement rather than altering an existing door, but if your only option is to upgrade, then transforming them into fire doors is a case of adding fire-resistant materials to the outside of the door panels. Additional non-combustible materials may be added inside certain panels, a technique known as ‘sandwiching’, although this is far more complex and inefficient.

Some existing fire doors, such as hollow core, flush-fitted designs, simply cannot be upgraded and must be replaced.
About

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