

## Passive fire systems rely on static barriers, which involve little or no movement within or caused by each system.

Passive fire systems are designed and installed to prevent or limit the spread of fire within a building. This is achieved by using construction elements to divide a building into smaller sections known as fire compartments. These compartments could be horizontal and/or vertical. For example, horizontal examples may include hotel rooms which may be fire rated to separate them from corridors or a workshop/storage area of a building may be in its own compartment separated from the office areas. Vertical compartmentation could include a services riser in a multi-story building or fire isolated stairwells.



Due to the number of components needed to effectively address a penetration or barrier, each of the following is termed a system. For example, a fire resistant doorset requires a fire-resistant door leaf, frame and furniture, commonly referred to as hardware. These items make up a doorset and therefore the system.

Examples of passive fire systems include:

- fire-resistant doorsets
- fire shutters and sliding doors
- fire rated glazing
- fire and smoke barriers both vertical and horizontal such as floors and walls
- fire stopping materials and systems for penetrations through walls and floors.

Not all systems are created equal with fire resistance levels varying depending on the individual components used within a system. For example, two concrete walls may vary in thickness and each have a differing manufacturing process causing a variation in specifications and differing resistance to a fire.

As a building owner/occupier, there is no need to go into the ratings in-depth, suffice to say that the systems installed in a building at construction should have met the building code fire rating requirements of the time of construction or any significant alterations. However, as time passes and alterations are completed within a building or new services run, it is at these times that the compartmentation and required fire rating becomes vulnerable. Alterations, refits, running of services including computer cables through fire compartments are commonly the times when passive fire systems are unwittingly disturbed and left compromised. These compromised systems may not work as designed, if at all, leaving the building exposed to rapid fire spread.

It is important that all fire compartmentation within a building is identified by the owner/ occupier to ensure that any work which may affect any of the systems within that compartment are well managed and made right as soon as work is completed.

All installed passive fire systems should be tested and maintained to the appropriate maintenance standards.