

David Sugden, Chairman of the Passive Fire Protection Federation, writes on the dangers of substitutions and economies when it comes to fire protection.

Is what you specify what is installed? Fire safety depends on it

Forgive me if I'm stating the obvious, but I think it's important to go back to basics occasionally, particularly when it comes to passive or built-in fire protection (PFP). Confining a fire to its point of origin is a major objective of any fire safety strategy and this forms the basis of passive fire protection measures. Compartmentation and structural stability are the ways in which we build in fire safety. Exit routes are protected with fire separating elements made up of fire-resistant panels, fire-doors and, if required, fire-resistant glazing, forming compartments or to provide safe access to and from the building.

Compartmentation

The elements of a fire-compartment are walls, partitions (especially glazed partitions) ceilings, floors, beams and columns, doors and windows. Each of these is given a rating based on integrity, insulation and/or structural stability in a fire situation. So, for example, beams supporting a floor or ceiling can be expected to resist collapse, and fire-doors to hold back smoke, flames and heat for a set amount of time.

It sounds simple, and it is, **as long as it is installed correctly in the first place** and is made good if any of the elements of the compartment have been pierced by, say, new plumbing or electric cabling. Once compartmentation is built in it needs little maintenance - no batteries to be checked, no water supply to maintain, no foam to replace, no chemicals to top up. All that's necessary is to make sure penetrations in a compartment, in walls, floors or ceilings to allow pipes or wires through, are always made good. Gaps should be closed and sealed with appropriate fire rated materials so that if fire should start smoke and fumes do not spread beyond the source.

PFP materials and systems exist to minimise the effect a fire has on the fabric of a building and should form an integral part of the design of all new developments. By

such measures specifiers and architects arrange to divide a building into compartments to restrict the spread of fire, often for a time in excess of the minimum 30 minutes called for by the regulations. Rooms, passageways, walkways can be closed off and safe areas for evacuation preserved for vital protection.

Installation affects everything

Any manufacturer of construction products will confirm that it is no use fitting a well tested product if the installation isn't done properly. There are many training schemes run by both manufacturers and third party certification bodies to ensure that installations are correct. Where fire doors are concerned for example, the door leaf itself is tested with a certain frame, hinges, closers and other hardware. The same approved fittings must be used in practice for the door to perform as expected. Certified doors have details of the full door set requirements. Fire-resistant glazing, for example, must use the appropriate frames, beads and fixings for it to perform as tested. In the UK the glazing industry itself has established schemes to train and certify installers. Similar Third Party Certification schemes are now available for all fire safety sectors, both Passive and Active, in the UK.

Such schemes have been established by the industry because passive fire protection products will only perform as expected if they are installed in accordance with the tested design. The Golden Rule is that all fire-resistant products must only be used within a tested and approved fire-resistant system of matched components. The system should be installed as approved without unapproved changes or switches from one material to another. The passive fire protection industry has set up independent, Third Party Certification schemes for all types of products, to provide added assurance. The advice in Approved Document B and all other DCLG guidance is that using certified products and installers is the best way of ensuring that the fire performance will be as expected.

Specifiers should insist that the measures designed into the fabric of the building as part of the fire safety strategy are installed by Third Party Accredited contractors to ensure that they function in a fire situation as envisaged by the designer and approved by regulators. At a time when prosecutions are being brought against those who fail to ensure adequate fire safety or allow breaches of fire safety regulations it must be a wise move to make sure your instructions and design are followed to the letter.

So how do you keep up with industry best practice, the latest developments, then make sure that what you specify is what is delivered and installed? And how do you know it has been installed correctly? The Passive Fire Protection Federation (www.pfpf.org) is a source of guidance and also strongly recommends the use of Third Party Certification for both products and installers.

For further information visit www.pfpf.org

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806 words

Images; David Sugden, Chairman of the Passive Fire Protection Federation

Fire protection measures diagram

Compartmentation in practice

Architects and specifiers must police their specs

Installers fitting insulation

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