

Building momentum

Passive fire protection on building projects needs to be client led, says **Alan Oliver**

UNDER the Building Regulations in England and Wales, there is a requirement for main contractors to ensure that new or refurbished buildings are completed and handed over to the client in a fire-compliant state, in terms of means of escape and minimum life safety.

However, there is significant evidence available which shows that many buildings are constructed with passive fire protection either badly installed or missing altogether. There are numerous reasons for this, such as:

- the 'competitive tender' process for securing work, which inevitably leads to a focus on lowest price rather than best practice
- the fragmentation of the passive fire protection into various subcontractor packages, often where very little knowledge of passive fire protection exists

- the ownership of some components, such as linear gap seals, being unclear and so left by everyone 'to others'
- the scope of work being underestimated at time of tender and done to a poor standard, in order to minimise the unforeseen purchase cost
- a lack of general expertise as to the correct application and limitation of various products (expansion foam being a good example)
- items and areas being missed due to poor coordination of work
- the role of Clerk of Works, who was traditionally available to monitor such work, having largely disappeared

Making checks

There is a widely held myth that if a building has been signed-off by building control, then the building will have achieved fire compliance. In fact, there is no statutory duty for building control to inspect fire control measures. As a result, the owner or occupier cannot assume that the building is being handed over to them in a fire-compliant condition, and other checks are required if the owner or occupier is to meet their obligations under the Regulatory Reform (Fire Safety) Order in England and Wales, and similar legislation in Scotland and Northern Ireland.

Clients must therefore carry out a risk assessment and other inspections, once they take control of a new building. Should it be found that the built-in fire protection is inadequate or badly installed, then they will have a legal claim against the main contractor.

However, those inspecting the new building on behalf of the client, such as fire risk assessment consultants, will themselves often have very little expertise in built-in fire

Examples of badly installed or missing passive fire protection include poorly applied expansion foam (top left), an incompetent attempt to seal around services (bottom left), and the cursory filling of penetrations without an effective seal (below)





protection, and may not be able to determine issues such as whether or not the linear gap seals to fire walls have been installed to a fire tested detail that will provide the fire rating required. Also, because such items are built into the structure, installation defects at handover stage are often impossible to detect without carrying out destructive tests.

Using fire doors as an example, Peter Barker of consultants, Chiltern International Fire, states: 'Even the simplest design of fire door can rarely tolerate error in installation, and one hour's fire resistance can easily be reduced to less than ten minutes, but you will not necessarily be able to see the problem unless there is a fire.'

Client involvement

So, this being the reality, it can be argued that it is not only the main contractors who are often failing in their duties. As the ultimate responsibility for the project and the building's fire safety rests with the client and/or developer, it is clearly in the client's interest to be actively involved all the way through the project, from design to completion, to ensure that work is being carried out and delivered to a satisfactory standard. This entails:

- full client involvement as part of an integrated project team, from pre-design to post-delivery
- participation in the passive fire protection subcontractor selection process, to ensure those chosen offer required competence and overall best value and not just the lowest price, within accepted procurement guidelines
- insistence that all those carrying out such work are third-party accredited, and ensuring that the accreditation scheme is robust in auditing and inspection procedures
- expert investigation of products and systems to be installed, to ensure they fulfil holistic specification and fire-rating requirements
- helping to create a collaborative rather than confrontational working environment
- regular inspection and monitoring of work at various stages of the project, to ensure agreed standards are being maintained
- carrying out inspections immediately prior to handover, to ensure fire compartmentation has not been breached by

Correct installation is essential, whether it is the fitting of a complex service void (above left), complying with a manufacturer's tested detail (above), or the sealing of all gaps and imperfections to ensure the specified level of fire and smoke containment (below)



- the late installation of information technology (IT) cables and other services
- active involvement to ensure the passive fire protection information provided at handover is comprehensive to the extent that it complies with Regulation 16B of the Building Regulations

In practice, it is unlikely that a client will have the required expertise 'in house', so it may be necessary to employ the services of a company or individual able to fill the role of passive fire protection 'champion'.

Although this may be seen initially as an added cost to the project, in reality not only is it often a price worth paying to safeguard life safety and best practice, but it should also ensure that the building is completed 'right first time' in terms of fire compliance, which overall will be the most cost-effective option ■

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