The Risks Posed by Non Compliant Passive Fire Measures

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Concern about non compliance with passive fire protection requirements has been expressed by the industry for a number of years.

In 2008 BRANZ funded research to address concerns within the fire protection industry that the passive fire protection systems within commercial and public buildings were not up to standard. The research confirmed that there were significant issues and identified a number of areas where improvements to design, installation, inspection and ongoing maintenance of passive fire protection in buildings, could be made.

More recently there have been articles in the news media about passive fire defects being discovered during weathertightness repairs to apartment buildings. This has been borne out in the claims that we see. No longer are claims confined to breaches of E2 of the Building Code. They now involve multiple breaches of the Building Code including structure, durability, acoustics, safety barriers and fire protection.

Adequate passive fire protection has a significant effect on limiting the spread of smoke and fire in buildings. In 2012 it was stated that the bulk of public buildings in New Zealand were operating without the correct passive fire systems which put the occupants' lives at risk in the event of fire.

The problems being encountered include design (the wrong passive fire protection system has been selected), installation (the work has not been done properly) and certification (the system has not been signed off properly). The opinion of the experts working in this area is that the problems stem from a lack of knowledge within the construction industry i.e. that the code is concerned not just with the spread of fire but also with the spread of smoke.

The correct sealing of service penetrations is critical, yet it is apparently the most misunderstood area of fire protection. Like in "leaky building" litigation, problems arise because of a lack of coordination between different trades installing services in buildings, particularly in relation to services through fire-rated elements.

Passive fire protection is primarily about correctly installed, tested and compliant systems. It is not about squirting foam or sealant around penetrations and buying and installing fire collars. Fire stopping is a collection of products which form a system. They may include a particular wall or floor construction along with a specific range of manufacturers' products, which are then tested. If they are installed outside the test parameters it is difficult to predict how they will perform.
Ron Green, the director of Fire Group Consulting, opines that the following steps should be taken to improve the current system.

Identify who does the work

At building consent stage identify who will be undertaking the fire stopping of the service penetrations. Most building projects have several trades carrying out the work. Each trade should provide a Producer Statement Construction (PS3).

Proper Producer Statement Design Review (PS2) Information

Ensure that the peer reviewer is adequately qualified to provide the certification as often systems are unsuitable for the penetrations as designed.

Do not allow self checking

Some building consent conditions provide for the installing company to inspect its own work. Have a qualified person undertake the inspection to ensure it is installed as per the design.

Construction monitoring

Councils should ensure passive fire protection is monitored and at the appropriate level – see IPENZ construction monitoring levels CM1 – CM5.

Producer Statement Construction Review (PS4)

The fire engineer or the fire designer usually signs the PS4 for the fire stopping of penetrations. There is concern within the industry that many certifiers do not have enough knowledge of many of the fire stopping systems sold in this country and they rely upon the installer's PS3 and a quick inspection to check if the fire stopping has been applied. Without adequate product knowledge non- compliant systems have been certified as compliant.

Inspections

The government is committed to the self regulation of new construction, including for passive fire

Councils usually rely upon producer statements. However, there may not be reasonable grounds to rely upon them if defects (like inadequately sized fire collars or unsealed penetrations) were visible during the council's inspections.

There are currently cases awaiting trial where it is alleged that councils have been negligent when it comes to the consenting, inspecting and/or certification of passive fire protection measures. Until the courts decide on the issues we cannot say with certainty what will happen. What we can do is draw on our experience of how the courts have handled the attribution of blame for leaky building defects. Our view is that the courts will be keen to compensate innocent building owners if at all possible and passive fire protection remains an area of risk for councils.

[1] Determining Barriers to Industry Delivery of Fire-Safe Buildings in New Zealand by Fire Protection Association of New Zealand.
[2] "Major apartment fire hazards revealed" Phil Taylor, NZ Herald, 10.10.15
[3] NZ Construction News, Media Release, 10.04.12
[4] See www.originfire.co.nz/passive-fire-stopping 20.10.15 for some scenarios and what needs to be considered when assessing whether the passive fire stopping is compliant
[5] "Fire stopping falling short", Ron Green, Build Magazine, October/November 2014