

The Building Inspectors Perspective

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A Building Inspectors overview of passive fire protection with 11 years experience in Building Control and 30 years in the industry.

Passive fire protection is a relatively new field in the industry. Over the last few years, a large number of different systems and products have come on to the market. These products are sold to almost anyone over the counter, with very little documentation on how to use them, and what their limitations are. Some of these products are being re-branded with New Zealand company names.

When arriving on site for an inspection an inspector is generally confronted with the work in a finished state for the type of inspection required.

Firewalls

Firewalls quite often are only designated with an FRR (Fire Resistance Rating). Often we do not see a particular system specified. We ask the builder for the consented plans and specifications and look for system specifications. In some cases, we will see a Winstones GIB system (example only) specified and find that another product has been used. This of course is a substitution.

In both these cases, the Building Inspector is then faced with the task of having to assess either the system to see if it matches the required FRR, or if the product substituted, has the required FRR and what testing has been done to achieve what is required.

Penetrations

We also inspect penetrations of firewalls.

Penetrations can take many shapes and forms. Electrical cables either in singular or multi form, ventilation ducts, metal pipes, plastic pipes, data cables, cat doors (in some cases), mail apertures, switch and power boxes, recesses for mirrors and lights, sprinkler heads, and other minor penetrations.

There is a multitude of products available for all of the items listed. Some however are not suitable for where and how they are being used. This is due to poor product knowledge by the person purchasing the product, poor product knowledge by the person selling the product, poor product knowledge by the person installing the product and poor application by the person installing the product.

Again, the Building Inspector will ask for documentation for any product used. As with the previous example the Building Inspector is expected to adequately assess the product and installation in a very short time. Not an easy task!

Products and systems

These are generic categories for some of the items available.

1. Soft seals both smoke and fire.
2. Wraps and collars.
3. Blankets and pillows.
4. Cement and mortar.
5. Curtains.
6. Dampers.
7. Wallboards.
8. Biscuits and putty.
9. Sprays and paints.
10. Duct wraps.
11. Foams.
12. Strips and seals.
13. Glass

As can be seen there are a considerable number of different categories available. Couple that with a number of differing brands and types available under each category and it is almost impossible for a single person to fully understand how each product works, what the limitations are and how they are installed.

Site personnel

Site personnel in my experience are very varied. Some have very good knowledge and some have very poor knowledge of both products and application. Some site staff are very well supervised and some are not. Some sites are very well managed and some not. The ones that are not well managed tend to become a real headache for Council staff. This is generic to all parts of the industry not just to the passive fire area.

Inspectors

As with other sections of the industry, there is a wide variation in knowledge and experience with inspection staff. Largely Inspectors are fair and reasonable in how they go about their inspections.

Failures

When products are not installed adequately, it is quite often not apparent until a fire is present. This of course is too late. Retro fitting other systems and features to a building over time also means that damage is probable to existing fire rated ducts and walls. No provision is made when constructing these walls for future additions or deletions to the duct services. Failure of fire rated walls in existing buildings is common. However until a fire occurs, it is not always apparent if the retrofit damage is there.

Demarcation lines between subcontractors are also an area that causes conflict on jobs. Fit out subcontractors installing work through firewalls often do not understand the relevance of the wall. Incorrect application of some products is seen all too often. Large holes for small pipes and large gaps around ventilation ducts are quite common. Lack of dampers through firewalls is also seen. I do not know if this is due to ignorance or cost cutting.

Passive fire protection is often tagged out of subcontractors pricing on a job. This I believe is due to poor knowledge of products and systems. Professional passive fire protection companies along with the builders, plumbers, electricians and ventilation contractors that produce incorrect applications is seen all too often.

Summary

- Product documentation and assessment along with product testing is the key to all the items mentioned above.
- A positive attitude and a willingness to achieve the best possible job are also required.
- Adequate training in selecting and applying the best product to achieve the best outcome (not only cost) is also paramount.
- A comprehensive understanding of all the differing product types is essential. This needs to be across the industry and inspectors.
- Definitive plans and a fire report that is linked to the plan are necessary for informing all associated with a job of any requirements.
- System installers specifying passive products with their systems should reduce the guesswork of compliance.

At this stage, I see very little of most of the above items in the field. Inspectors can pick up a certain amount but in some cases, the contractors make it quite hard for inspectors to see adequately.

There may be a raft of other things that can/should be done to improve what is currently undertaken. I guess it is a "watch this space, work in progress" now. ■