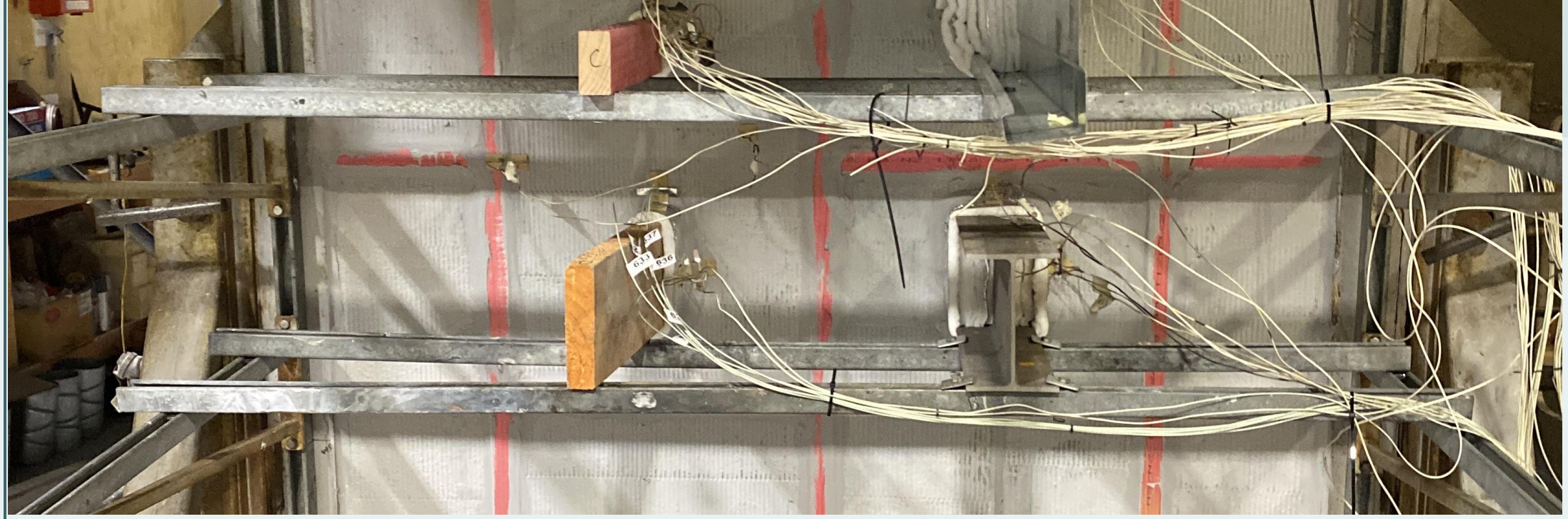
Passive Fire Protection a Case Study

Agenda

- Introduction
- Fire Testing Process
- FRR and how it applies to products
- How the variables effect a Products Performance
- How does this apply to ongoing Building Compliance.
- Conclusion

Introduction



What is Fire Testing

Fire Testing is a bench-mark test that aims to provide confidence that in the event of a Fire the products will prevent the spread of fire through the building. The NZ Building Code says all products installed in New Zealand Buildings are tested to ensure they perform to the required level.

Most common variables associated with Passive Fire Protection installations.

- Type of substrate that the Fire Separation is comprised off. Most common are Fire Rated Plasterboard, Concrete and Mass Timber.
- The types of services that are being treated. From Electrical Cables, Water and Waste Pipes, and Beams Guiders or Trusses.

Product Testing

How does it affect the end user

What is measured during a Fire Test

An FRR is comprised of 3 components

- Structural Adequacy
- Integrity
- Insulation

These are measured during testing and have the following general failure criteria:

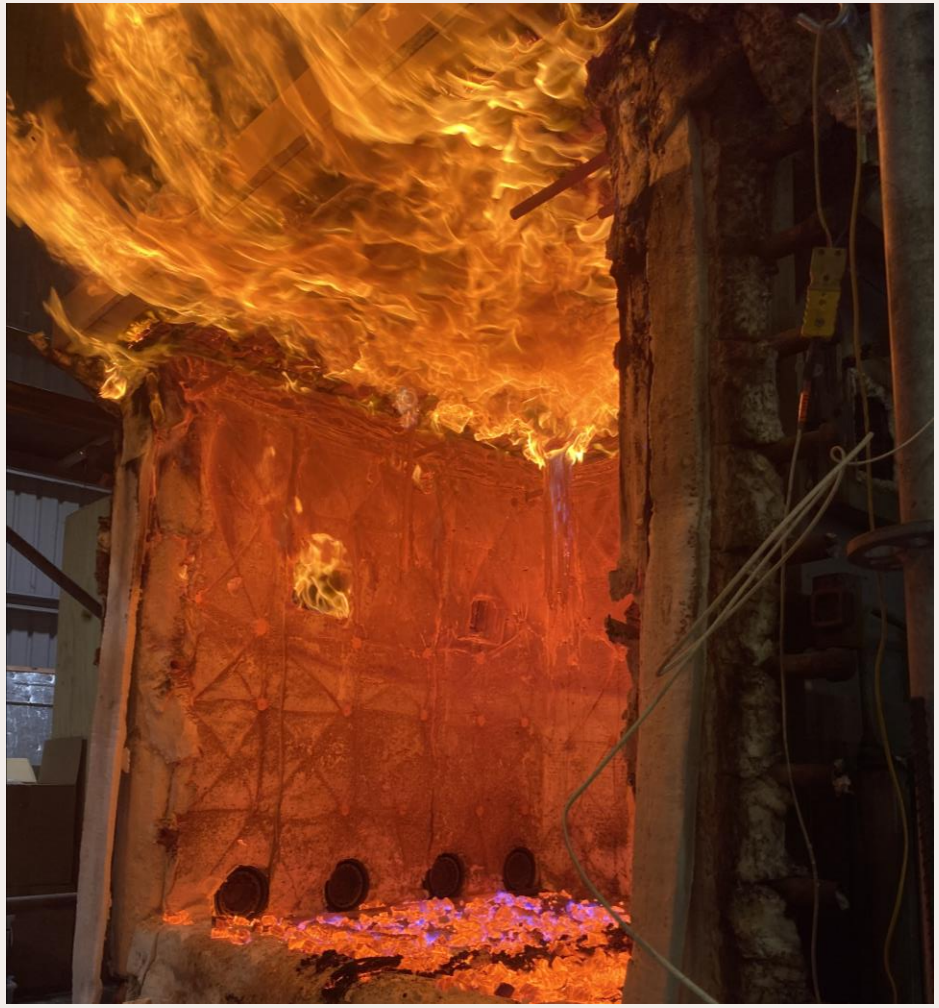
- Structural Adequacy- Limiting Temperature or Deflection
- Integrity- Sustained Flaming on the unexposed side of the separating element
- Insulation- A temperature rise on the Specimen of more than 180°K above the initial temperature

How do the physical properties of the Fire Separation affect the products performance?

1. The substrate.
2. The type of service.
3. Fire Stopping Products properties.

All the variables need to be taken into consideration by Product Manufacturers. In addition, they need to make the products cost effective to install.

The Substrate



The substate has a significant affect on the performance of a product.

Whether the substate is concrete, plasterboard, or CLT. The difference in substate affects the performance of the Fire Stopping Products

The Penetrating Service

The service can be anything from a PVC Pipe to a Cable Bundle, to insulated non-combustible pipe to a sprinkler pipe. The type of service plays a large part in the type of treatment needed.

The Passive Fire Protection Products

The properties of the fire stopping protection affects its performance.

The properties of the fire stopping products.

The type of fixing method.

The installation method.

How does this affect ongoing Building Compliance?

Consistent new products in the market

- New treatments with tested solutions are needed to prove compliance.

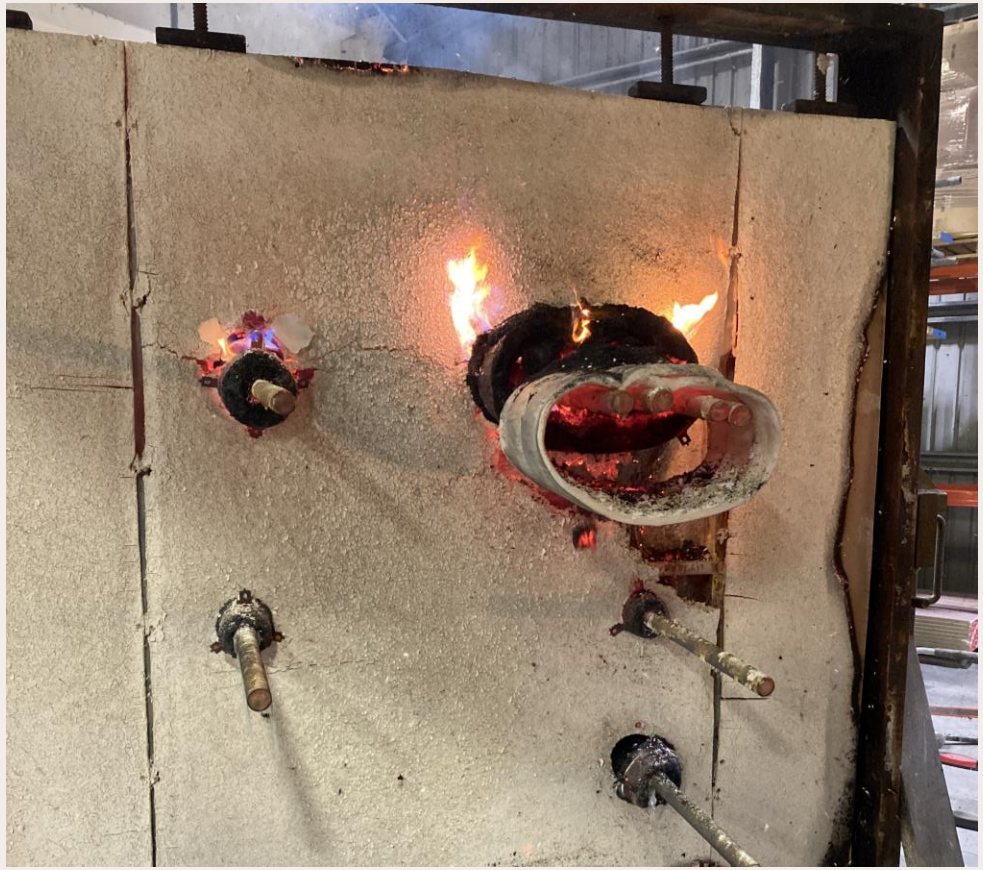
Changes or remediation to the building.

- Ensuring that new services are treated correctly.

Development of new products.

- Better range of solutions, easier installation, higher fire ratings.

Conclusion



- The Passive Fire Protection is a system.
- Each part of the system is important.
- If you are unsure that an installation is compliant, ask for the tested detail.
- You can carry out a test if you need too.

Thank you

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