

Passive fire protection 101

A BRANZ online resource released earlier this year provides comprehensive professional guidance to passive fire resistance.

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PASSIVE FIRE PROTECTION refers to the use of construction elements within a building that are designed to prevent or delay the spread of fire and smoke to different parts of the structure. Other methods of fire protection that may or may not also be present include active fire protection like sprinklers and alarm systems.

Passive fire part of the building fabric

Passive fire protection provides protection simply by being a part of the building fabric. It has an established performance that is verified by test data.

BRANZ's new *Guide to Passive Fire Protection in Buildings* educates and provides guidance for the effective use of passive fire protection. It includes providing the right product and installing it correctly in the right situation and describes good practice for the specification, approval, installation and verification of passive fire protection.

Guide starts with compliance overview

The guide is primarily aimed at people working in these areas and sets out to be a passive fire protection 101. It starts with a comprehensive definitions and abbreviations section on terms and acronyms used in the fire protection field. A description of the regulatory areas of New Zealand Building Code compliance follows with advice about how to read the performance requirements specified in the Acceptable Solutions documents.

The various forms of performance verification data are detailed from test and assessment reports, to CodeMark and Appraisals, to manufacturers' literature. A flow chart illustrates the different compliance pathways identifying the roles and responsibilities to ensure the specified performance levels are delivered in the final building.

Quality installation needed

For the on-site installation to meet the performance requirements, it must meet

the design, specifications and approvals granted up to this point, and it must be understood and installed correctly by the contractors and subsequent inspectors.

The effectiveness of passive fire protection features is completely dependent on the quality of the installation. It is imperative that the manufacturer's installation specifications are followed to ensure it will achieve the verified fire performance.

Typical passive fire features identified

Almost half the guide is dedicated to identifying the key features of typical passive fire features used in New Zealand construction (see Figure 1). This section makes extensive use of illustrations to identify the key features that should be present across a variety of passive fire features and systems.

This gives installer pointers to the kind of information they should be obtaining from the manufacturer or supplier about the type of feature or system being installed. ➤

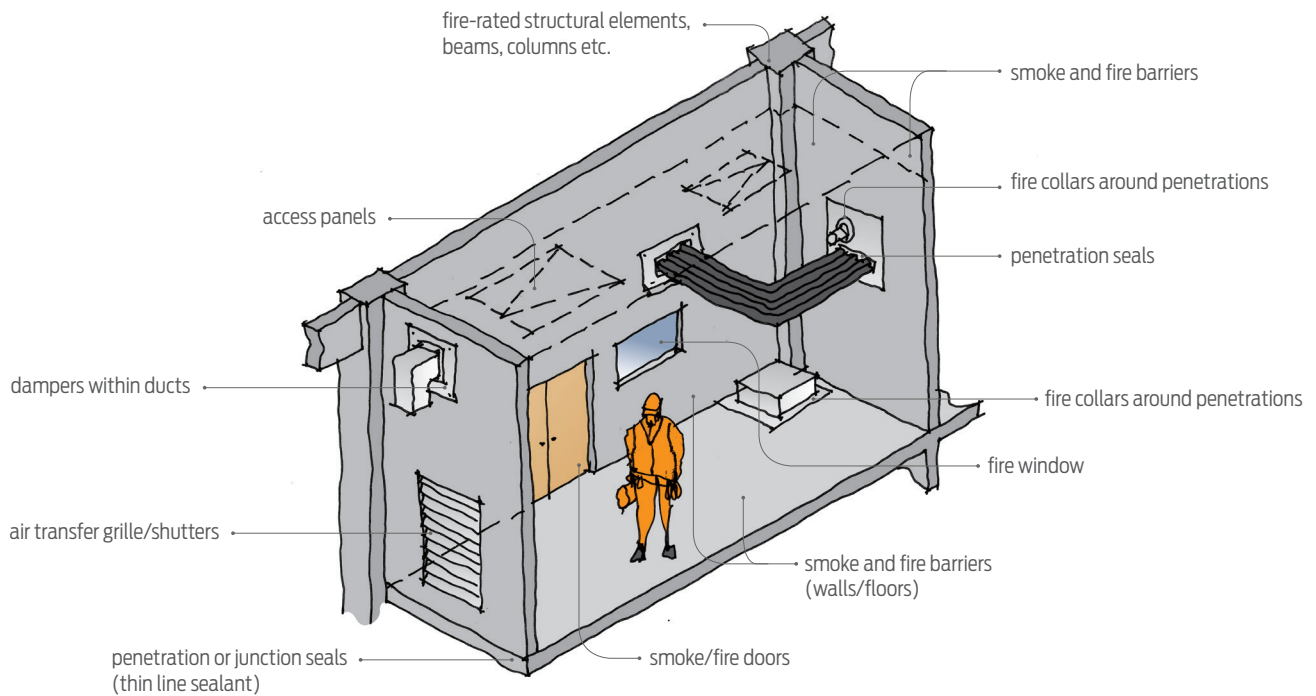
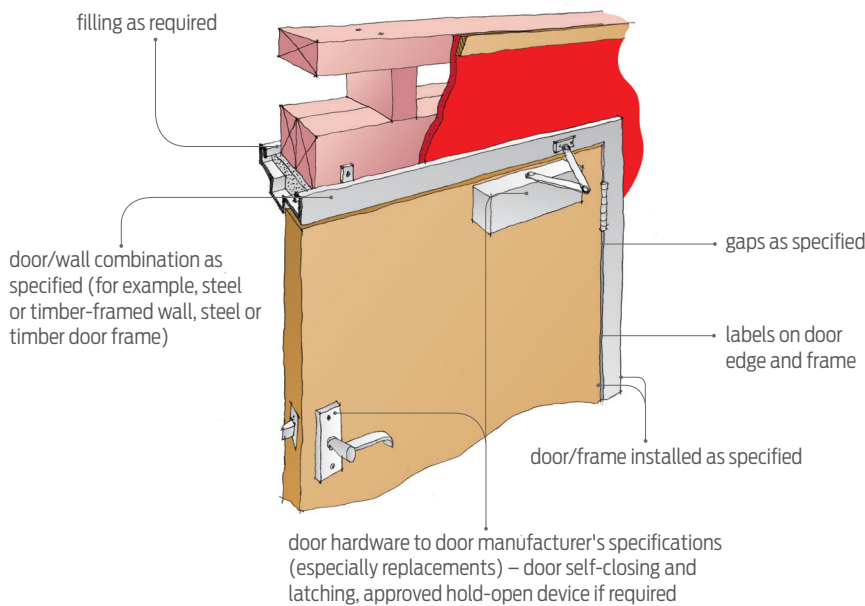


Figure 1: Example of passive fire elements in a room.



Notes

- Follow manufacturer's specifications
- Obtain data sheets, catalogues etc.
- Frame fixing as specified by manufacturer
- Hollow steel frames filled as specified by manufacturer
- Gaps to edge of frame typically 3 mm
- Door stops typically 25 mm thick but may vary
- Ensure compatibility of door and wall as specified by manufacturer
- Labels required on door edge and frame

Equally for the building control official, it outlines what to look for when completing their sign-off.

Figure 2 shows an example of some of the key features that should be present for a typical doorset. The notes identify that the lockset and hardware must be in accordance with the doorset manufacturer's specification and that the fire performance of the doorset should be identified on a label in the hinge jam. Further notes provide prompts for other generic installation and inspection information.

The publication sets out to offer guidance on the process from design to specification and approval, to installation and verification. For installations that differ from existing verified systems, the responsibilities taken on by those making assessments of performance and suitability for purpose are discussed. ◀

For more Download the BRANZ guide for free from www.branz.co.nz/passivefire. It is only published in electronic formats so updates can easily be made. Comments and suggestions are invited on future inclusions.

Figure 2: Typical doorset features - timber-framed wall and steel door frame.