Queensland Government
Building Codes Queensland
Department of Local Government, Planning, Sport and Recreation

Building Newsflash

Protection of Openings that Penetrate Fire Rated Elements

Purpose

The purpose of this Newsflash is to draw attention to the requirements of the *Building Code of Australia* (BCA) with respect to services that penetrate building elements that are required to have a fire resistance level (FRL).

Background

Concerns have been raised that some services are being installed through building elements required to have an FRL, without adequate protection. The FRL of the elements may therefore be compromised exposing the building to risk of spread of fire between fire compartments.

Legislation

BCA

Clause C3.15 of volume 1 of the BCA requires the installation of a service that penetrates a building element (other than an external wall or roof) that is required to have an FRL, to be installed so that the integrity of the fire rated element being penetrated is maintained.

C3.15 (a) and (b) allow the installation to be used if it consists of the same materials and is installed using the same methods as a prototype assembly tested in accordance with AS4072.1 and AS1530.4.

Fire stop collars installed on plastic or PVC pipes are a common means of maintaining the FRL of walls and floors. However, designers, building certifiers and installers need to ensure that the installation has been tested in accordance with AS1530.4 and AS4072.1 for the particular circumstance. For example, a fire stop collar installed on a PVC pipe used in a floor waste gully location must be tested for that application. It is not appropriate to use the results of a test report for a fire stop collar used in locations other than a floor waste gully, as evidence of compliance with the BCA of a floor waste gully application.

C3.15 (c) to (g) allow a range of services to be installed as long as they are installed in accordance with AS/NZS1668.1, or Specification C3.15 as appropriate.

AS 4072.1 Components for the protection of openings in fire–resistant separating elements Part 1: Service penetrations and control joints

Among other things, AS 4072.1 sets out requirements for the testing, interpretation of test results, installation and certification of sealing systems around penetrations through separating building elements which are required to have an FRL or, if applicable, a resistance to the incipient spread of fire.

Clause 3.2 of AS4072.1 requires that where a particular penetration sealing system is intended for use in both horizontal and vertical elements of construction, each orientation must be tested.

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For floor waste applications, clause 4.6.2 states that in addition to the requirements of clause 3.2, a penetration sealing system must not be used to protect a plastic floor waste system unless it has been tested in that configuration.

Evidence of Suitability

Part A2 of the BCA provides details of the forms of evidence that can be relied on by a building certifier in determining that a material, form of construction or design meets the performance requirements or the deemed-to-satisfy provisions of the BCA.

Clause A2.3 of the BCA requires a building element that is required to have an FRL to be determined in accordance with Specification A2.3.

Specification A2.3 is satisfied if a building element is identical with a prototype that has been submitted to the Standard Fire Test, or an equivalent or more severe test, and the FRL achieved by the prototype is confirmed in a report from a Registered Testing Authority which:

i. Describes the method and conditions of the test and the form of construction of the tested prototype in full; and

ii. Certifies that the application of restraint to the prototype complied with the Standard Fire Test.

Builders and designers are responsible for ensuring that where it is proposed to use a tested system in a building in order to satisfy the BCA, the system being used is identical to the tested prototype and is installed in the same locations as the tested prototype.

When approving building work, building certifiers should not allow the installation of any system that cannot be shown to be identical with a tested prototype and when installed, it is installed in the same locations and under the same conditions as those detailed in the test report.

Licensing requirements

Any person who installs, maintains, repairs, or certifies passive fire equipment, must be licensed. For example, a Queensland Building Services Authority licensed plumbing and drainage contractor could install, maintain or repair a fire collar in a building, as it forms part of the plumbing and drainage system. However, the same person could not certify the installation of the system unless they had a *fire equipment - passive (penetration and joint sealing)* licence. A person who holds that class of licence is required to have appropriate professional indemnity insurance. The passive fire licence is conditioned and only permits work associated with specified passive fire equipment.

A building certifier may accept a certificate from a competent person who is licensed to certify passive fire equipment, under section 23 of the *Standard Building Regulation 1993*.

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