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FIRE SEPARATING WALLS #2

BRISBANE

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ISSUE

BSA has identified a number of instances of defective fire separating walls in duplexes, town houses and multi-residential complexes.

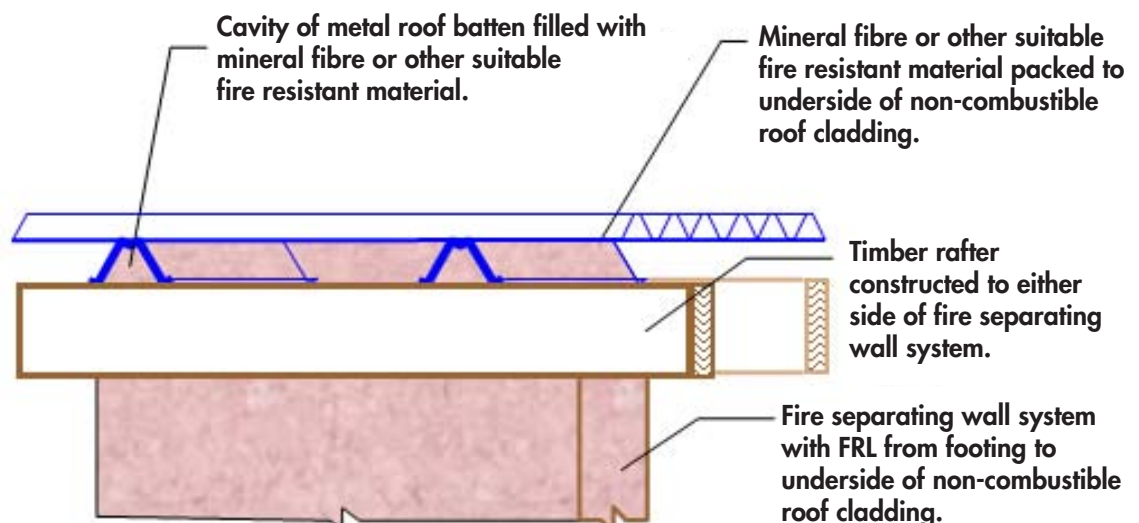
The system of fire separating walls, as required by the Building Code of Australia (BCA) and as recommended by manufacturers, is not being adequately adhered to in some instances.

This publication offers advice for contractors on fire separating wall systems in Class 1a buildings.

The definition of a Class 1 (a) building is:

- (i) a detached house; or
- (ii) one or more attached dwellings, each being a building separated by a fire-resistant wall, including row houses, terrace houses, town houses or villa units.

Duplexes and town houses are the most common form of attached dwellings in residential construction. These dwellings have walls that require fire separation between adjoining residences.



Detail showing extent of fire separating wall system with FRL rating extending from footing to underside of non-combustible roof cladding.



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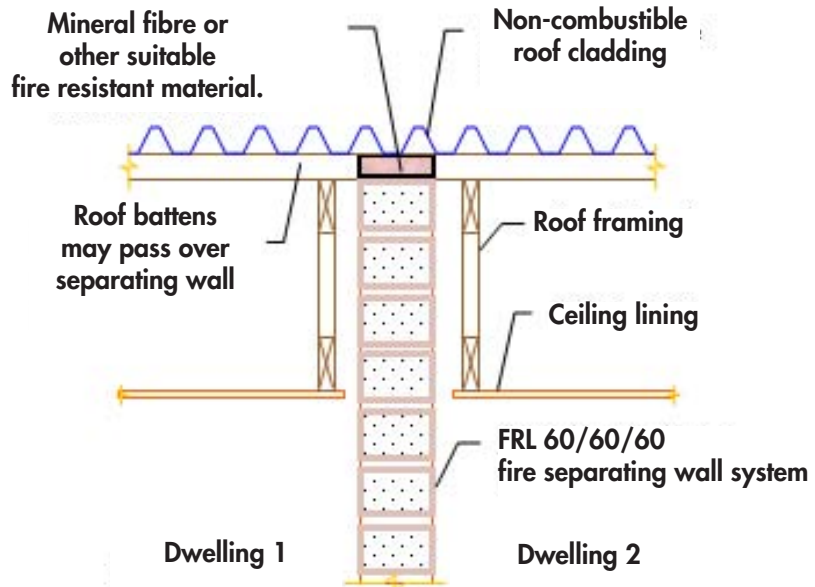
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Fire separating wall system from footing to underside of non-combustible roof cladding.

Referenced from BCA, V2, Figure 3.7.1.11

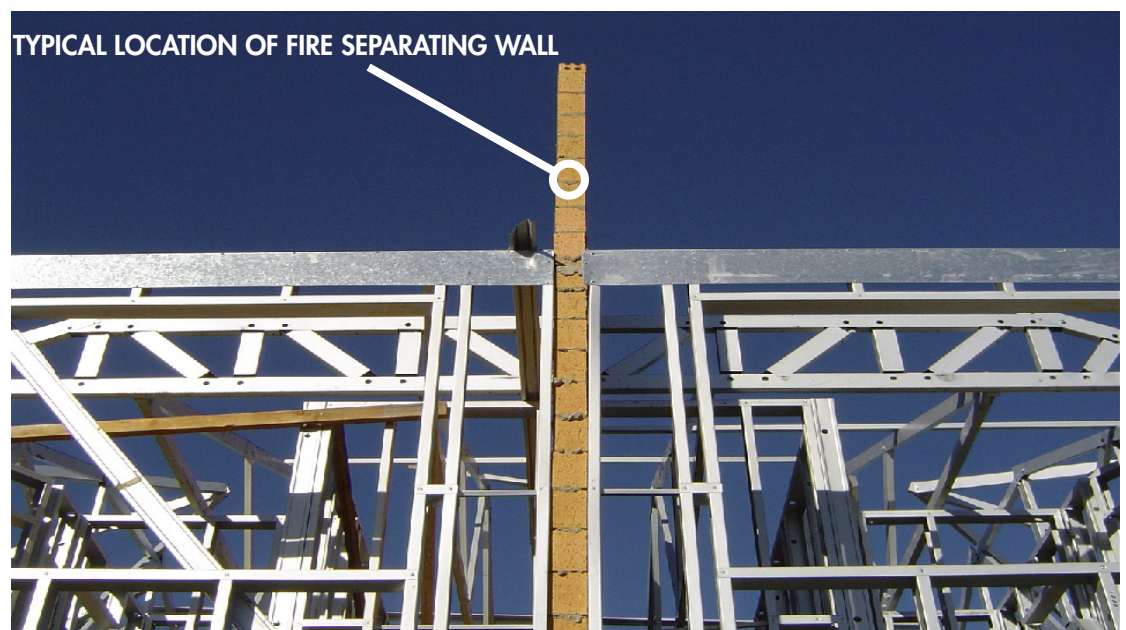
REQUIREMENTS OF BUILDING CODES OF AUSTRALIA

Class 1a buildings are generally required to be protected from the spread of fire from adjacent buildings. Duplexes and townhouses have separating walls that must also provide fire protection. These fire separating walls must have a continuous fire resistance level (FRL) of 60/60/60 (i.e. a grading rate in minutes for structural adequacy/integrity/insulation) from footing to the underside of a **non-combustible** roof cover. Where a **combustible** roof cover is used (i.e. shingles etc), the fire separating wall **must extend at least 450 mm above** the roof cover.

Fire separating walls are designed for masonry or frame construction to specific

requirements that must be strictly adhered to and applied continuously. This means that services can penetrate a separation wall if they are installed in accordance with a tested system that is a minimum of -/60/60.

Apart from timber roof battens, no combustible material should be allowed to cross a fire separating wall. Timber battens that cross fire separating walls must not be larger than 75 x 50 mm in section. All gaps between the fire separating wall and the roof cover must be packed with suitable fire-resistant material such as mineral fibre, as recommended by the manufacturer.





ISSUES OF MAJOR CONCERN IN FIRE SEPARATING WALLS INCLUDE:

- Binders on trusses carried through fire separating walls.
- A breakdown of fire separating walls over voids such as roof spaces, verandahs and similar spaces common to more than one dwelling or unit.
- Penetrations through fire separating walls that break down the fire rating.
- Gaps between fire separating walls and the underside of the roof cover that have not been correctly filled with fire resistant material as specified by manufacturers.
- Gaps between fire separating walls and external wall construction

With a likely increase in the number of multi-residential developments, it is important that builders endeavour to eliminate errors which lead to defective fire separating wall systems. Defects can be avoided by compliance with the requirements of the BCA and adherence to good building practice.

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An example of a fire separating wall inadequately finished around roof battens to the underside of concrete roof tiles.

REASON FOR FAILURE:

- Approved plans and specifications which do not provide details of every construction application related to fire separating wall systems.
- Building supervisors not providing adequate information and supervision to installers of fire separating wall systems.
- Builders not adhering to proper fire separating wall installation requirements as specified in the BCA, construction plans and manufacturer's recommendations.
- Installers or trade contractors not possessing an adequate understanding of how to construct a continuous fire separating wall system.



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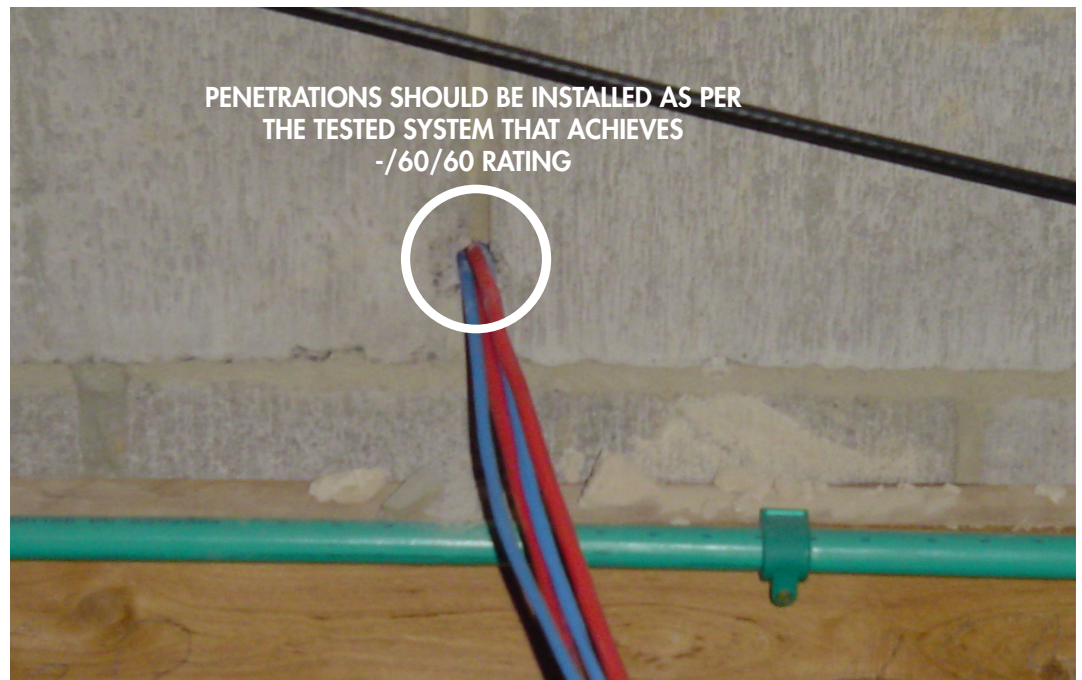
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CORRECTIVE MEASURES:

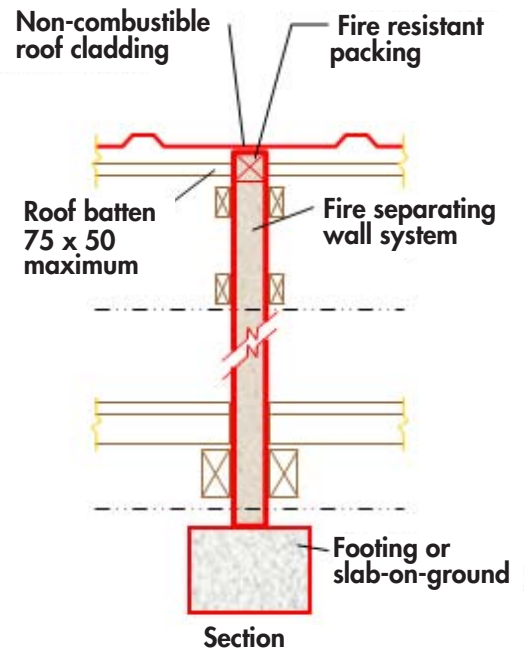
Fire separation must achieve compliance with the Performance Requirement of the BCA (compliance with BCA p2.3.1 and be deemed to satisfy BCA p3.7.1.8)

p2.3.1 Protection from the spread of fire requires:

- (a) A Class 1 building must be protected from the spread of fire from:
 - (i) Another building other than an associated Class 10 building: and
 - (ii) The allotment boundary, other than a boundary adjoining a road or public space

Builders should be aware of construction methods that provide proper fire protection in accordance with building codes and manufacturer's recommendations.

Builders should ensure supervisors and installers have plans and specifications that are adequately designed and detailed for fire separating wall construction.



Fire Separating Wall System

Reference:DC1 Guide Universal Texts 1998

Supervisors and installers should ensure that fire separating walls provide, in the case of **non-combustible** roof cover, a continuous fire protection barrier from footing to roof cover, across voids in roof spaces between residences and over eaves and verandas.

In the case of **combustible** roof covers, the fire separating wall should **extend 450mm above the combustible material.**



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PREVENTION NOTES:

Strict compliance with the deemed-to-satisfy provisions of the BCA must be adopted for fire separating walls construction.

Supervisors and installers should make themselves familiar with the various types of fire separating wall systems (i.e. masonry or frame construction), and with design details which may call for specialised installation techniques, in accordance with manufacturer’s recommendations.

Builders should maintain full documentation on fire separating wall design details,

manufacturer’s recommendations, installation compliance certificates (where applicable) and ensure that they can satisfy compliance with building certifiers’ requirements.

Supervisors and installers trained to perform this type of construction can assist builders in preventing unnecessary and costly rectification of defective fire separating wall construction and assist in minimising the number of disgruntled clients of multi-residential complexes.



REFERENCES:

The Building Code of Australia Volume Two