



# Chimney fixing and bracing



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Most new chimneys are just a chimney shape that encloses the flue, unlike traditional solid chimneys. We look at some of the construction, fixing and bracing requirements for both options.

**TRADITIONALLY**, chimneys attached to timber-framed buildings were constructed from brick or masonry systems such as concrete/pumice blocks or precast concrete. Usually, they were freestanding, placing little direct demand on the framing.

### Chimneys changed with the times

In newer buildings, with the replacement of old open fires with wood burners and flued gas appliances, the chimney has simply become a framed enclosure around a lightweight flue.

Where a heavy chimney was incorporated, Building Code Acceptable Solution B1/AS3 *Small chimneys* included details of structural connection so that the earthquake loads from the heavy chimney could be transferred to suitably braced timber framing. Today, this is more likely to be used in renovation projects.

### Framed flue enclosures

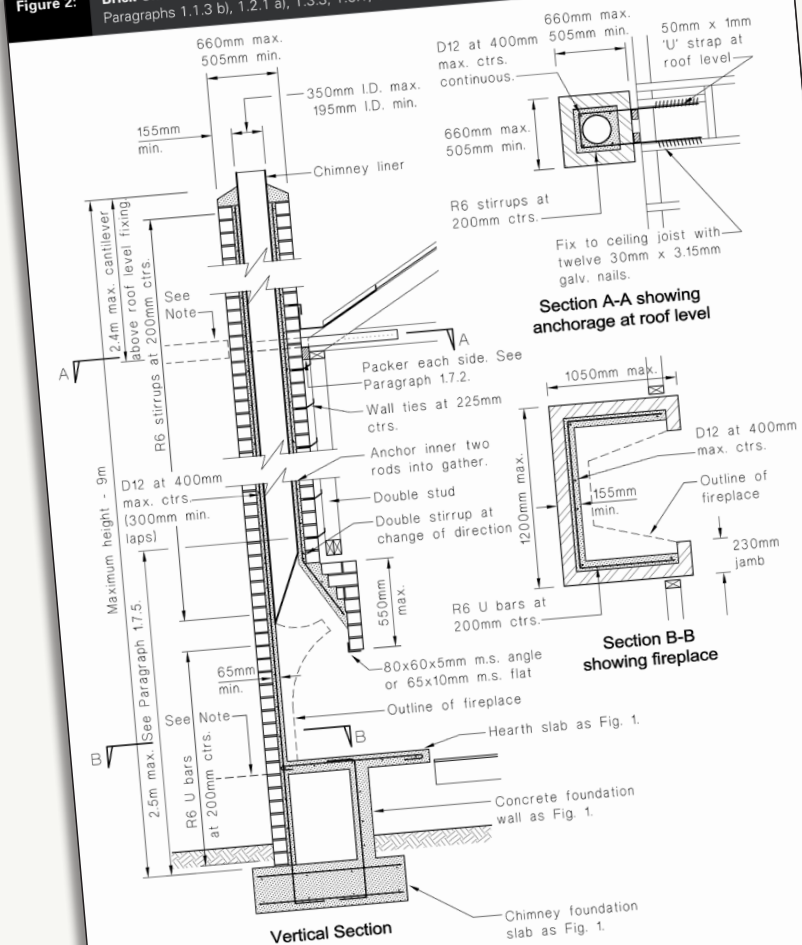
Framing that forms a chimney shape but simply encloses the flue can be spaced, sized and fixed as for any timber (or lightweight steel) stud wall as there is no significant load applied to it from the flue. The key considerations will be:

- the actual height of the framing needed
- whether the wall framing is continuous, as under NZS 3604:2011 *Timber-framed buildings*, the maximum stud height is 4.8 m.

For taller framed flue enclosures, the construction options are to:

- decrease the stud spacing or increase stud depth
- utilise a wall plate at each floor level – effectively reducing stud heights
- ensure the framing is able to cantilever above roof level to resist wind loads ➔

**Figure 2: Brick Chimney with Liner**  
Paragraphs 1.1.3 b), 1.2.1 a), 1.3.3, 1.6.1, 1.7.2, 1.7.5 and 1.7.6



**NOTES:**  
Figure 2 has been drawn for the chimney being exterior to the building. The dotted lines indicate the ceiling joists and floor for the situation where the chimney is internal.  
Flues must be sized to ensure adequate draught. Sizing depends on many factors including the height of the flue but generally flue cross sectional area needs to be a minimum of 1/12th of the fireplace opening. The flue also needs to be sufficiently large to enable cleaning. 195mm is regarded as a practical minimum diameter.

**Figure 1** Figure 1: Brick chimney with liner. (Source: B1/AS3, MBIE.)