

BUILDER'S MATE

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Warming up to steel framing

Lightweight steel framing has the advantages of being strong and not shrinking, warping or splitting. It is unaffected by mould, rot or insects, but for steel to meet Building Code requirements, it is critical that thermal breaks are properly designed and installed.

Steel framing is highly conductive – it transmits heat very effectively. A house built with steel framing and no thermal breaks would lose a lot of heat to the outside.

Typical thermal break materials are:

- 12 mm S grade expanded polystyrene
- high-density polyethylene foam
- for purlins and tile battens, 40 mm thick timber.

No minimum R-values for thermal breaks are quoted in Building Code clauses H1 *Energy efficiency* or E3 *Internal moisture*, but BRANZ and NASH (the National Association of Steel-framed

Housing) have said that R0.25 is required to comply with H1.

Thermal breaks are required:

- on the outside face of all external wall framing that forms part of the thermal envelope (see Figures 1 and 2)
- between top plates and bottom truss chords or rafter/ceiling joists at external walls
- between soffit bearers and the wall framing they are attached to
- for skillion roofs, to the outside edge of the rafter or top truss chord as well as around the soffit framing. >

INDUSTRY NEWS

Apprentice of the Year

Entries are open for the RMB Carters 2012 Apprentice of the Year. Aimed at carpentry apprentices, prizes include \$5,000 cash, Outward Bound courses and tools. For more, see www.apprenticeoftheyear.co.nz.

Fixing plasterboard after earthquakes

BRANZ has done lab research to see how best to fix up plasterboard linings damaged in an earthquake. An overview of findings is given in BRANZ Bulletin 548. To buy, see www.branz.co.nz/bulletins.

Solar power in Canterbury

A 2,200 home subdivision is planned for northwest Christchurch where each house will have a solar installation. The sun should provide around a quarter of each home's energy needs. The project is a partnership between Maxim Projects, Meridian Energy and Solar City.

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Where a wall cladding includes a drained and vented cavity, there are two options for applying the thermal break material:

- The thermal break material can form the drainage cavity (Figure 1).
- The thermal break material can be fixed directly to the steel, then the wall underlay installed, with cavity battens forming the cavity (Figure 2).

Where thermal break material creates the cavity, wall underlay must be installed to the wall framing first, and vertical thermal breaks need to be at least 18 mm thick. Horizontal breaks to dwangs and the bottom channel must be 10 mm thinner than the verticals (but have equal thermal performance to the

18 mm verticals) to allow for drainage down the back of the cladding and air movement to occur.

Get more information about steel framing :

- NASH standard *Residential and low-rise steel framing – Part 1: Design criteria*. This is cited as a means of compliance for Building Code clause B1 Structure in compliance document B1/VM1. See www.nashnz.org.nz
- *Building Basics: Steel Framing* is a new book from BRANZ covering steel framing, materials, fabrication, design and erection. Visit www.branz.co.nz to buy a copy online, or phone 0800 80 80 85.

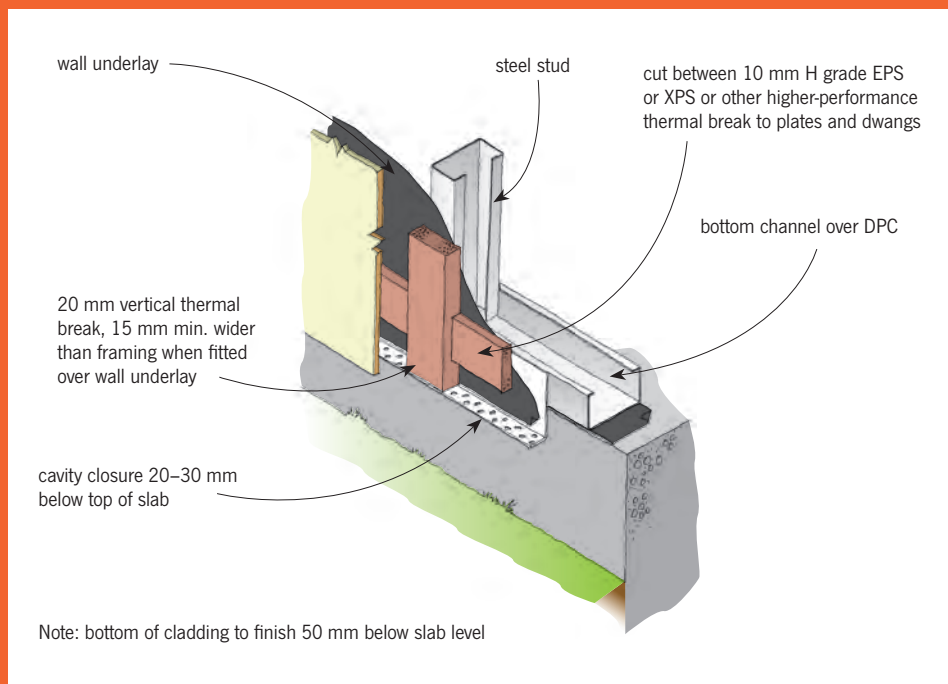


Figure 1. Base of drained cavity detail with thinner higher-performance thermal break between verticals at bottom plate (slab reinforcing and insulation not shown).

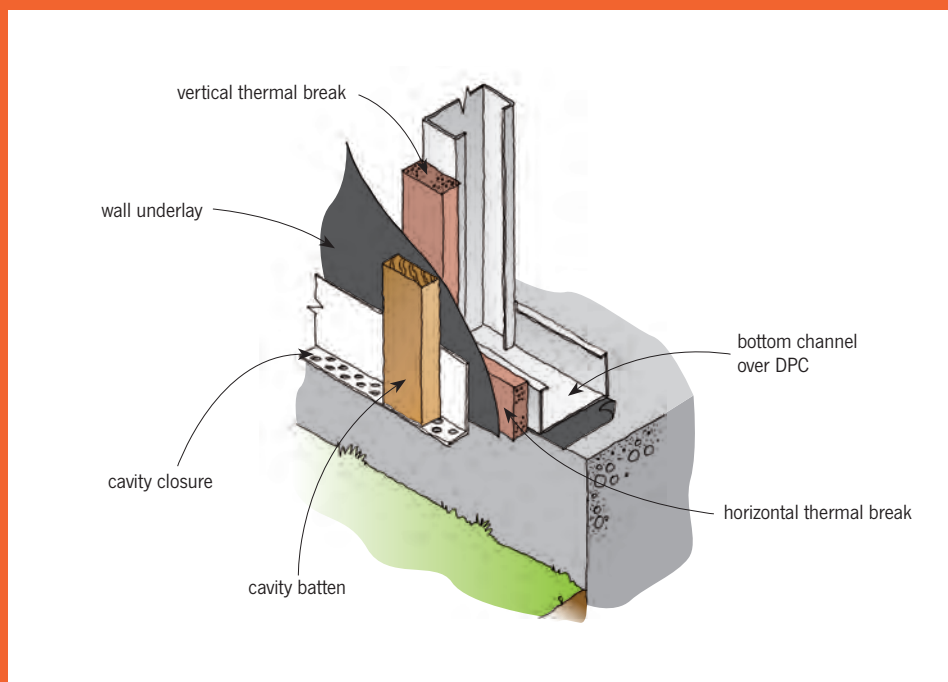


Figure 2. Installation of wall underlay over thermal break plus cavity battens (wall cladding, slab reinforcing and insulation not shown).



Dribblings from the Old Geezer

Like it or not, the Licensed Building Practitioner Scheme is now up and running. Wondering if it was running like Usain Bolt or limping along like Keven Mealamu clutching his hammy, I rang around. I'd noticed that my phone had gone quiet after a spell of having old friends ring to beat their gums about the need ... or the process ... or just to ask if I could be a referee.

Word is some builders found the bar set quite low and getting over had been easy.

The local inspector indicated that it was early days, but from their side, it looked promising – no added inspections were needed, paperwork changes were minimal and behind them. He also noted that our area didn't have the cowboys that had instigated the regime because the builders all lived in our community and any dud work would have led to their demise or suitable remedies implemented.

So all is well? Not quite, as some of our designers demonstrated the normal human trait of leaving things to the last minute before applying for LBP status. As the designers' registration involves an interview, this has led to a bottleneck and backlog. Before you mutter 'how sad, too bad', remember this will create a problem for all involved in the building industry, because if there is a delay in submitting of consent applications, this affects everyone downstream, so a bit of tolerance is needed.

I did smile though when one affected designer told me he had been emailed by the DBH asking for his email address.

Des Molloy

Reducing fire risk in flue enclosures

Fires involving flue enclosures are a warning of the importance of getting the basics right.

The relevant standard is AS/NZS 2918:2001
Domestic solid fuel burning appliances – installation.

This applies to log burners, open-fronted fireplace inserts, oil-burning appliances and similar devices that are fully assembled before installation. (Gas appliances are covered by a separate standard.)

Two key safety principles are:

- sufficient separation from combustible materials
- adequate ventilation.

The main areas that need separation are:

- walls of the enclosure from the flue
- framing and lining from the penetration through the top.

A flue with no casing must be separated from heat-sensitive material by four times its diameter.

A flue with two casings and 25 mm air gaps between casings and the flue requires a 25 mm separation from heat-sensitive material (Figure 3).

The standard has no provision for a single casing, but using heat shield principles, the separation would be 2 x flue diameter. For more information, check out the standard, or the article on flue installations in *Build* 129.

Venting the enclosure around the flue prevents heat build-up at the top (Figure 4).

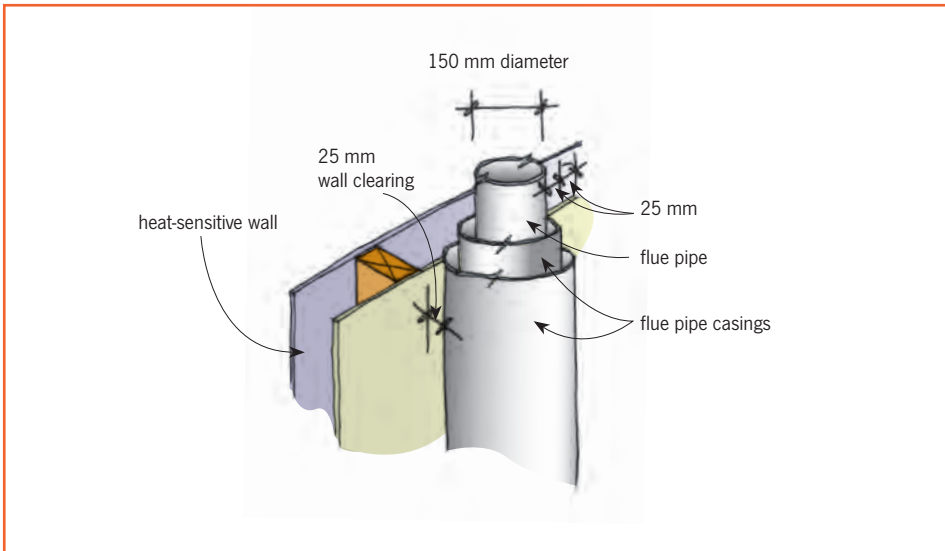


Figure 3. Wall separation needed for flue with two casings and 25 mm air gaps between.

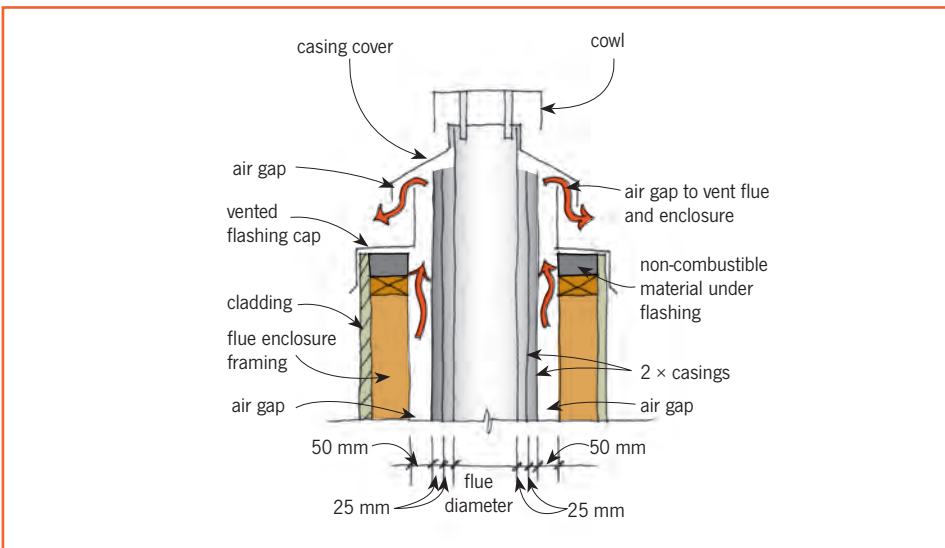


Figure 4. One option for venting through flashing with an oversize cover.

build



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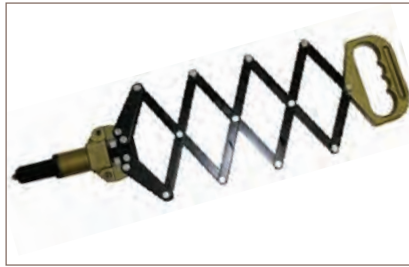
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All you need to do to win is tell us the name of the mystery tool (above right).

Email your answer to buildersmate@branz.co.nz. Put "June Competition" in the subject line. The message should include your answer, your name, postal address and phone number. One entry per entrant please.

Don't forget to tell us where you picked up your copy of *Builder's Mate!* The winner will be the first correct entry drawn at 9 am on Friday 6 July 2012. Details will be posted on the BRANZ Ltd website (www.branz.co.nz) and in the next edition of *Builder's Mate* due out on 1 August 2012.

Terms and conditions:

Entry is open to all New Zealand residents except employees and immediate families of BRANZ and The Tool Shed shops. The competition will close on Friday 6 July 2012. The prize is not transferable for cash. The judge's decision is final. No correspondence will be entered into.



The winner of the BM 53 issue was Steve Gain of Featherston. The mystery tool was a glazier's point driver and the prize was a Makita worksite radio worth \$249.

What's wrong with these PICTURES?

1 STACKING



2 DOWNPIPES



1. These fibre-cement sheets are poorly protected from sun and rain. Sheet edges and ends should be better aligned, and the whole stack properly covered. It would be better if they could be stored inside.

2. This misalignment shows a large mistake was made in the measuring. The downpipe should be taken down and replaced in the correct position.

Answers:

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Standards referred to can be purchased from Standards New Zealand.
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