

# builder's mate



## MATERIALS COMPATIBILITY

Sometimes, two materials can't be used close together. They are incompatible because, thanks to their chemistry, one will reduce the durability of the other.

Some common examples:

- A steel nail in damp timber that has been treated with a copper-based treatment will corrode faster than normal.
- Rain that runs over western red cedar can leach acid out of the timber and corrode unprotected aluminium/zinc-coated or galvanised steel below.

Guidance on the compatibility of materials is given in:

- E2/AS1 clauses 4.2.2 and 4.3
- NZS 3604:2011 *Timber-framed buildings* section 4.4 for steel fixings and fastenings
- BRANZ Bulletin 519 *Fasteners selection*
- BRANZ Bulletin 575 *Timber treatment*.

E2/AS1 clauses 4.2.2 and 4.3 state that metals that are in contact in locations where they will become wet, or where water can flow over metals or certain plastics onto another metal, shall be selected in accordance with:

- Table 20 for material selection – it focuses primarily on metal claddings including fixings to these claddings
- Table 21 for compatibility of materials in contact
- Table 22 for compatibility of materials subject to run-off.



A Milwaukee M12  
FUEL Hammer Drill

worth \$299!

### INDUSTRY NEWS

#### Changes coming to the Resource Management Act

A Bill aiming to streamline resource consents has been introduced to Parliament. Changes include giving councils discretion to waive the need for a consent for very minor matters and a 10-day fast-track consent for simple issues.

#### Auckland building work surges

The number of building consents in Auckland is at an 11-year high. The workforce has greatly expanded: the numbers of people employed in Auckland's building industry has grown from 45,000 to 75,000 in 3 years. The National Construction Pipeline Report released mid last year projected that 80,000 new homes will be built in Auckland in the 6 years to the end of 2020 – more than double the 30,000 built over the previous 6 years.

#### Membrane roofing new edition

BRANZ has released a second edition of its Good Practice Guide *Membrane Roofing*. The completely updated new edition includes sections on warm roofs and green roofs for the first time.

### HAMMER 'N' NAILS



**WIN!**

**The Tool Shed**

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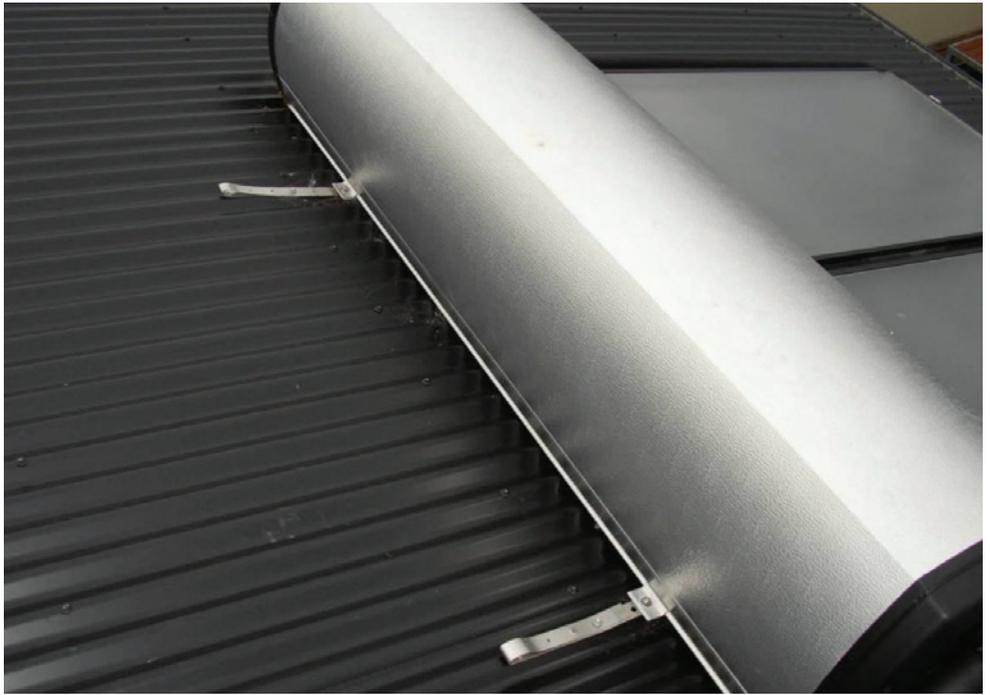
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Tables 21 and 22 do not specifically mention cladding fixings, but they can give guidance on compatibility of fixings with the cladding chosen.

Avoid contact between the following:

- Stainless steel and hot-dip galvanised steel, aluminium alloy/zinc-coated steel or zinc.
- Copper and hot-dip galvanised steel, aluminium alloy/zinc-coated steel or zinc.
- Acidic cladding timbers (redwood and western red cedar) and hot-dip galvanised or zinc-plated steel. (Use stainless steel or silicon bronze fixings.)
- Hot-dip galvanised steel, aluminium alloy/zinc-coated steel, zinc or anodised aluminium and copper azole and copper quaternary timber treatments. (Use stainless steel or silicon bronze fixings – galvanised steel is only suitable in closed situations.)
- Aluminium and stainless steel in exposure zone D except where the stainless steel element is small relative to the aluminium. (Using aluminium with stainless steel is permitted in exposure zones B and C.)

Hot-dip galvanised steel can be used with external CCA-treated timber in exposure zones B and C and in exposure zone D for claddings that have not more than 15-year durability.



**Stainless steel (like these solar water heater straps) should not be in direct contact with zinc/aluminium-coated roofing in exposure zone D or where exposed to salt spray.**

## Compatibility of roofing materials

Rainwater will cause rust on unpainted galvanised steel if it first passes over glass, plastic or a painted surface. Rainwater is slightly acidic, and it contains carbon dioxide, which is mildly reactive to zinc. This isn't a problem until it runs over or through an inert material before hitting the zinc-containing material.

Because most of today's metal roofing is factory-coated aluminium/zinc alloy-coated steel, it doesn't happen often, but it could be a problem in these situations:

- You put a glass skylight or acrylic roofing into an existing unpainted galvanised steel roof.

- You paint part but not all of an old steel roof.
- You replace metal pipes that discharge onto a lower unpainted roof with PVC pipes.

Inert materials include glazed terracotta tiles, glass, fibreglass, plastics, colour-coated steel and painted roofing.

To avoid the problem, ensure that, if you use inert material together with galvanised steel cladding, you run the inert cladding the full length down the roof. Check that rainwater from it runs into plastic or prepainted or coated steel gutters, not galvanised gutters.



# Mouthpiece

## Reminder of LBP skills maintenance changes

Welcome to 2016, which looks set to be another eventful and busy year for the sector!

In the April 2015 edition of *Builder's Mate*, I signalled changes to the way skills maintenance will be undertaken. The new scheme officially kicked off in November 2015, and approximately 3,000 LBPs have

transitioned across to the new model. Over the next 2 years, all LBPs will progressively move over to the new model, which is triggered at the point when they complete their last cycle of skills maintenance in the old scheme. All LBPs will be notified by letter when the new scheme commences for them.

Please refer to the following link for a comprehensive package of guidance material relating to LBP skills maintenance: [www.business.govt.nz/lbp/im-an-lbp/skills-maintenance/skills-maintenance-scheme](http://www.business.govt.nz/lbp/im-an-lbp/skills-maintenance/skills-maintenance-scheme)

At this link, you will find:

- a short video that provides an overview of the new system
- a certificate of learning form (for training providers)
- a record of learning form
- on-the-job learning examples
- guidance about the new scheme for LBPs, training providers and publishers.

In addition to the above changes, record of work and certificate of work forms are now available for LBPs online. These are only available to active LBPs through the LBP portal. The forms are the same as paper forms, but the online forms save time by automatically entering information such as the practitioner's name, LBP number, licence class(es) and contact information.

Initial interest in the new functionality has been solid, and hundreds of LBPs have already used the record of work and certificate of work forms online.

All the very best for the year ahead.

**Paul Hobbs**

Registrar Building Practitioner Licensing

# Framing cut-outs

It is routine for cut-outs or notches to be cut in framing timber during house construction, but too often, the holes are too big. During inspections of 200 new houses under construction, framing cut-outs that were too large were seen in over a third of the houses (see photographs below). The cut-outs, commonly found in top and bottom plates, were generally larger than permitted in NZS 3604:2011 *Timber-framed buildings* and not reinforced. Holes that are too big weaken the structure.

The key rules are set out in NZS 3604:2011 at 7.1.7 (floor joists), 8.5.2 (trimming studs) and 8.7.5 (top and bottom plates).

The limits for top and bottom plates are shown in Figure 1.

Where a hole or notch in a top plate exceeds these dimensions, under NZS 3604:2011, the plate must be strengthened by one of these methods:

- A 70 x 45 x 600 mm long member nailed to the exterior side of the plate with 4/75 x 3.15 mm nails on each side of the hole or notch.
- A 70 x 45 mm eaves runner connected to all studs and no more than 250 mm below the top plate.
- A 70 x 45 mm blocking fitted between ceiling joists or trusses above cut top plates and the steel angle.
- A proprietary steel plate fixed to each side of the framing before the hole is drilled as below.

For bottom plates, where holes or face notches exceed 50% of the width, fix the plate against sideways movement on each side of the hole or notch with one 100 x 3.75 mm nail.

Several different styles of galvanised steel products are available that provide strength and stiffness around holes:

- One type is a formed bracket with a hole in it. The brackets reinforce pine solid timber and LVL floor joists, studs and top plates. They are fitted before the pipe or ducting has been installed.
- Another type looks like an angle bracket and is nailed or screwed to a joist either side of a penetration. These can be fitted after the pipe or ducting has been installed.

If the cut-out or hole you require doesn't comply with NZS 3604:2011, consult an engineer.

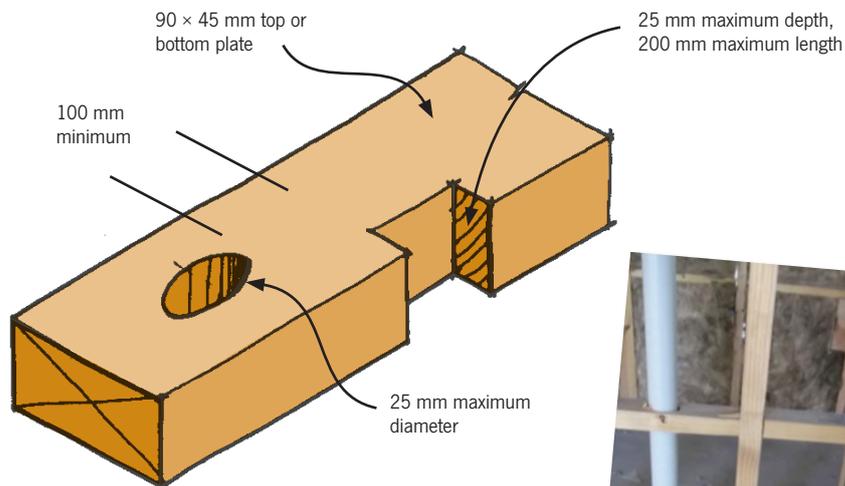


Figure 1: Hole and notch restrictions in 90 x 45 mm top or bottom plates.



Unreinforced top plate cut-out.



A large cut-out that the builder said would be repaired (but repairs are unlikely to be adequate due to the geometry). Appears to be a bracing wall re HD bolts.

# build

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# Competition

Here's a tool



What is it?

**WIN!**

A Milwaukee M12  
FUEL Hammer Drill

worth  
**\$299!**



This 12v brushless hammer drill delivers a whopping 37 Nm of torque. Numerous features include a built-in LED light to illuminate the work surface.

The prize is provided courtesy of The ToolShed.

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

Email your answer to [buildersmate@branz.co.nz](mailto:buildersmate@branz.co.nz). Put "February 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 11 March 2016. Details will be posted on the BRANZ Ltd website ([www.branz.co.nz](http://www.branz.co.nz)) and in the next edition of *Builder's Mate* due out on 1 April 2016.



Jonathan Nicholson from The ToolShed presents a prize (a drill bit sharpener) to October winner Barry Willetts of Henderson. The winner of the *Builder's Mate* 75 competition was Ian Redfern of Whangarei. Ian wins a Hitachi multi-tool. The mystery tool was a lazy tong riveter.

#### Terms and conditions:

Entry is open to all New Zealand residents except employees and immediate families of BRANZ and The ToolShed shops. The competition will close at 9 am on Friday 11 March 2016. The prize is not transferable for cash. The judge's decision is final. No correspondence will be entered into.

## + BUILDERS' APPS

In this series, we'll introduce some great apps and tools for your smartphone. The apps can be found in the iPhone store and/or the Android store. If you know any you'd like to recommend, email us the details at [buildersmate@branz.co.nz](mailto:buildersmate@branz.co.nz).



#### PINTEREST

This free picture bookmarking app lets you save, organise and share all sorts of photographs and drawings. You can save things you have found on your mobile browser.



#### UNIT CONVERTER

There is a wide choice of converter apps. This is one of the free ones and converts units of length, volume, energy, pressure, force, luminance and many more.



## New Good Practice Guide

Membrane Roofing 2nd Edition

Whether you are building or renovating a home, BRANZ can be relied on to have the information you need to get the job done.



The updated Good Practice Guide *Membrane Roofing* 2nd edition describes good practice and incorporates updates to codes and standards to ensure you have the latest information. It is an essential resource for architects, designers, builders, building officials and specifiers.

Packed with easy-to-read design and installation information that is backed by extensive use of photos and drawings.

Published in electronic and hardcopy format, buy this or any of the other 10 titles in the Good Practice Guide series.

Book: \$52 + \$8 p&p

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Standards referred to can be purchased from Standards New Zealand. Tel: 04 498 5991 or [www.standards.co.nz](http://www.standards.co.nz).

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