

# BUILDER'S MATE

**ISSUE 50**
**| October 2011**


## Update on construction changes

**Some key details and requirements in the widely-used Acceptable Solution for Building Code clause E2 (External Moisture) have changed in the recently-updated version.**

Both old and new versions of E2/AS1 can currently be used, but from the start of February next year, only the new version can be used as one means of compliance. Here are some of the changes:

### ROOFS

- butyl rubber or EPDM underflashing is now required under ridge/hip junctions on metal roofs
- for pipe penetrations through roofs, proprietary boot flashings can now be used for pipes up to 85 mm in diameter (previously 60 mm)
- the minimum slope for flat membrane roofs is now 2° (1:30), up from 1.5°. Butyl rubber or EPDM membranes are still the only ones covered by E2/AS1

- roofing underlay must now be run horizontally on roof slopes below 10°, and horizontally or vertically on slopes above 10° (previously 8°)

### WALLS AND WALL CLADDINGS

- all flush-finished claddings (such as plastered fibre-cement or EIFS claddings) must be fixed over a cavity
- cavities are now required on all parapet walls and walls that enclose a balcony
- all claddings in the new extra high wind zone must be on a cavity >


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## INDUSTRY NEWS

### Key dates coming up

There are two crucial dates early next year:

#### 1 February 2012

From this date, only the new versions of the Acceptable Solutions and Verification Methods for Building Code clauses B1 *Structure* and E2 *External Moisture* can be used.

The key standard NZS 3604 *Timber Framed Buildings* is referenced in these clauses. Only the new version of 3604 (NZS 3604:2011) can be used from the start of February.

#### 1 March 2012

From this date, restricted building work must be carried out or supervised by a Licensed Building Practitioner (but note a Site LBP can't carry out or sign off work).

For a house, restricted building work will typically include the design and construction of foundations, framing, roofing and cladding, to ensure the house is structurally sound and weathertight.

DIYers planning to do this type of work can apply to their building consent authority for an exemption.

## HAMMER 'N' NAILS



➤ Continued from previous page

- extra high wind zones require a rigid wall underlay (such as plywood or fibre-cement) that must also be overlaid with a flexible wall underlay (unless a proprietary rigid underlay that does not require an additional flexible underlay is being used)
- flashings in extra high wind zones require hems and hooks, or an increased height in the flashing upstand of 25 mm
- new details are given for wall/soffit junctions, showing the cladding/flashing/soffit construction sequence

- there is a change to parapet/wall junctions. You can't continue a wall along the same plane to be a parapet or enclosed balcony wall.

## DECKS

- the old version required the interior floor level to be a minimum of 100 mm above the level of the outside deck. The 100 mm measure is still the same, but now it is the top of any door threshold that must be this height above the deck
- the minimum fall for membrane decks is now 1.5° (up from 1°). Butyl rubber and EPDM membranes are still the only ones covered by E2/AS1

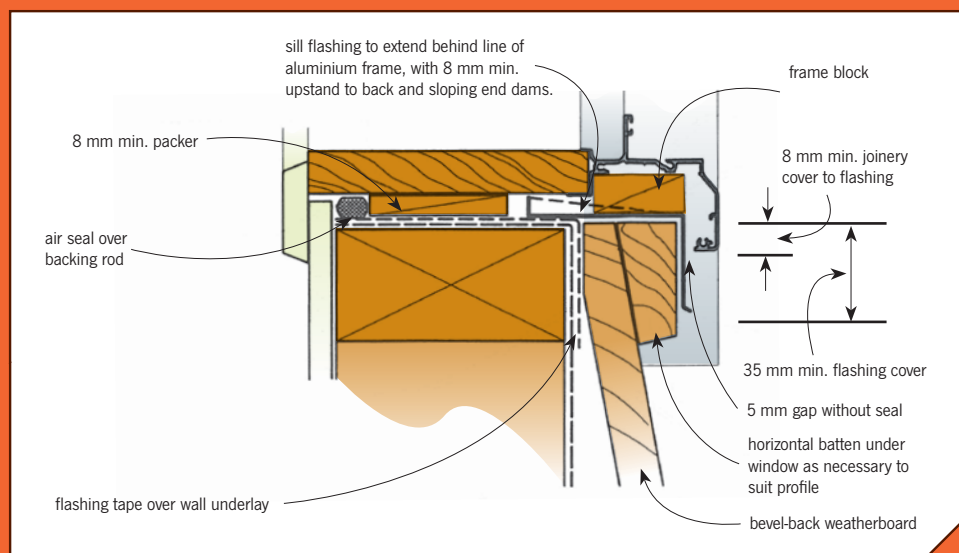


Figure 81(b) from the new E2/AS1, showing the 8 mm packer for direct-fixed cladding.

## WINDOWS AND DOORS

- double glazing units now installed under E2/AS1 with a trim opening wider than 600 mm will require support bars
- window sizes used to be to a maximum of 5 m x 5 m. This remains, but a maximum area of 13.5 m<sup>2</sup> is now set
- for the sills to floor level, windows have a maximum width of 6 m and maximum overall frame area of 16 m<sup>2</sup>
- the Acceptable Solution only covers horizontal window and door heads
- bottom corners of aluminium window and door sills need a corner soaker fitted to the back of the sill/jamb joint. This should be installed where the window is manufactured
- the required fixings to secure aluminium windows in place is now covered
- you may need to allow a bigger opening for windows with direct-fixed claddings. An 8 mm packer is now included in the detail with the sill flashing (see Figure 1)

## GENERAL

- where there is level entry from exterior paving in to a slab floor, the maximum allowable drainage channel length has increased from 2 m to 3.7 m
- brick veneer is now included in E2/AS1.

For all the details, you will need to get hold of your own copy of E2/AS1. BRANZ is giving seminars during November and December covering the changes in detail. Dates and locations are on the BRANZ website.

# Dribblings from the Old Geezer



I've had the good fortune to travel recently and what a treat it was. Second son married his French darling and we all were joyfully summoned to the event. In addition to the wonderful nuptials I got in a couple of motorbike adventures, I saw the Italian MotoGP, rode over the legendary Stelvio Pass and camped in the Pyrenees. At times it was almost a sensory overload.

But in addition to the breathtaking natural wonders and antiquities, I so enjoyed experiencing and observing ordinary French life. When ordinary things differ from what we are familiar with, it is natural to compare and assess against 'our way'. So often you step back and wonder 'why do they do that?' I still wonder why French windows open inwards for instance. It seems to create a lot of weather-proofing issues, not all of which are solved by the shutters. Another oddity is the practice of having small cranes at each building site, even domestic additions, to unload deliveries, instead of having hy-ab trucks do it. Their tools differ as well.

Their ways obviously work for them and I'm not judging them as better or inferior, just different. Vive la difference ... and here is a germ of an idea. What I would love to see, is our young trainees being exposed to these differences through an exchange period. What about a 6 month swap for final year apprentices? It can only benefit them, to be exposed to different ways and cultures. How about it BCITO?

Des Molloy



# ADVISORY HELPLINES

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# Liquefaction – a simple explanation

## During liquefaction, soil suddenly loses strength. Not all soils will liquefy.

Soils more likely to liquefy as the result of an earthquake are sands and silts that are quite loose in the ground. They don't stick together as clay does. And they are below the water table, where all the space between the grains is filled with water.

Earthquake forces cause the sand and silt deposits to contract. When they are saturated with water, pressures develop that can't be sustained under the surface layers. The loose granular soil starts to lose strength and behave like a dense fluid - hence the term 'liquefaction'.

Liquefied soil can't support the weight of whatever is above it – surface layers of soil, or concrete foundations of buildings. The liquefied soil under that weight is forced into any cracks and crevasses it can find, including those in the soil above, or the cracks between concrete slabs or paving. It

flows out onto the surface as boils, and creates sand volcanoes and rivers of silt. In some cases the liquefied soil flowing up a crack can erode and widen the crack to a size big enough to accommodate a car.

Liquefaction can also result in:

- Settlement of the ground surface (and all or part of a building on the surface) due to the compaction of underground soil. Ground lowering may be enough to make the surface close to or below the water table, creating ponds.
- Loss of support to building foundations.
- Floating of manholes, and buried tanks and pipes that are mostly empty.
- Where there are sloping ground surfaces, such as close to streams or rivers, surface soil layers can slide sideways on the liquefied soil. This is called lateral spreading. It typically results in long tears and rips in the ground surface. Lateral spreading can severely damage

buildings if part of a building's foundations are pulled sideways.

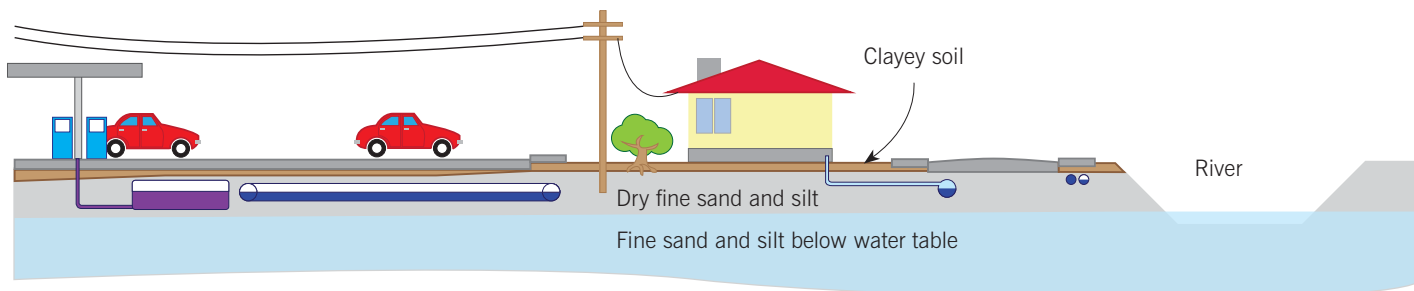
Buried services such as sewer pipes can be damaged as they are twisted or moved by lateral spreading, ground settlement or flotation.

Liquefied soils that are not ejected onto the ground surface re-densify and regain strength. In some cases, re-densified soil may be stronger than before the earthquake. Careful engineering evaluation is required to determine whether ground that has suffered liquefaction can be redeveloped.

*Information in this article has been drawn from a fact sheet issued by IPENZ, the Institution of Professional Engineers New Zealand, that was prepared with the assistance of Members of the New Zealand Geotechnical Society. This and other factsheets can be downloaded from the websites [www.ipenz.org.nz](http://www.ipenz.org.nz) and [www.branz.co.nz](http://www.branz.co.nz).*

## Before the earthquake

Areas of flat, low lying land with groundwater only a few metres below the surface, can support buildings and roads, buried pipes, cables and tanks under normal conditions



## During and after the earthquake

During the earthquake fine sand, silt and water moves up under pressure through cracks and other weak spots to erupt onto the ground surface. Near rivers the pressure is relieved to the side as the ground moves sideways into the river channels.

### Sand boils (Sand volcanoes)

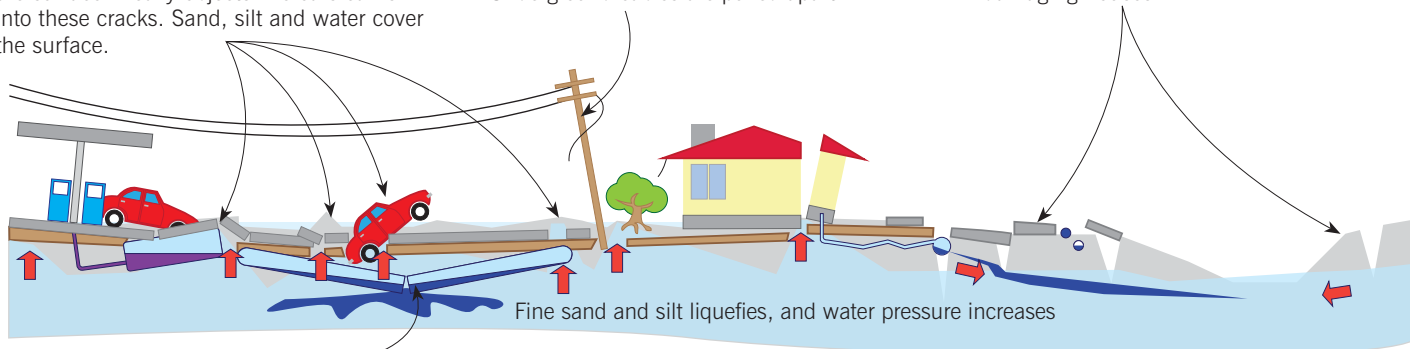
Sand, silt and water erupts upward under pressure through cracks and flows out onto the surface. Heavy objects like cars can sink into these cracks. Sand, silt and water cover the surface.

### Power poles

Power poles are pulled over by their wires as they can't be supported in liquefied ground. Underground cables are pulled apart

### Lateral spreading

River banks move toward each other. Cracking can extend back into properties, damaging houses.



Tanks, pipe and manholes float up in the liquefied ground and break through the surface. Pipes break, water and sewage leaks into the ground



# COMPETITION Win!



## A DeWalt 18V XR Li-Ion Compact Drill/Driver Worth \$299!

This great tool has 2 speeds, 0-600/0-2000RPM, 13mm chuck, single LED with delay, 2 x 1.5Ah Li-Ion batteries, fast charger, belt hook, magnetic bit holder, and comes in a heavy duty case.

The prize is provided courtesy of The Tool Shed.

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](mailto:buildersmate@branz.co.nz). Put "October 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 4 November 2011. 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 December 2011.

### 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 4 November 2011. The prize is not transferable for cash. The judge's decision is final. No correspondence will be entered into.



Here's a tool  
What is it?



## BUILDER'S MATE WINNER

The winner of the BM 49 competition was Mike Broeshart of Whangarei. The mystery tool was a biscuit joiner, and the prize was a Makita 185 mm 1800W circular saw.



PICTURED: Joanne Leask of the Tool Shed in Morrinsville presents an Arges rotary hammer drill to Terry King, winner of the BM 48 competition.

# BLOKES on the job

**PHILLIPE SAMET (AND TOBY)**  
in France



### Favourite tool

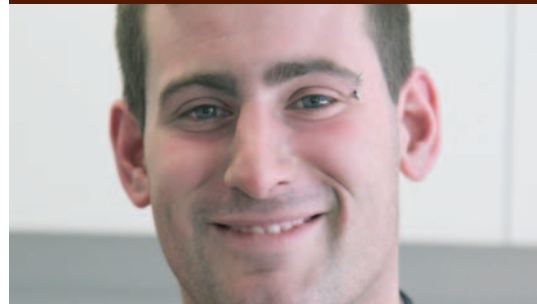
His toolbox. Most of his work is done from it.

### Favourite tip

Make the clients happy and you'll be happy

## DAN TURNER

Working with new stainless steel benches – BRANZ rebuild



### Favourite tool

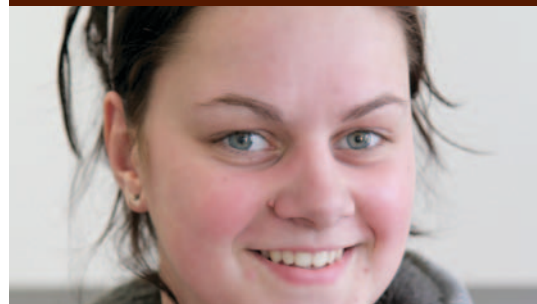
Tig welder.

### Favourite tip

Always be persistent.

## EILISH CHAPMAN

Working with new stainless steel benches – BRANZ rebuild



### Favourite tool

Tig welder.

### Favourite tip

Never listen to the boss.

# renovate the right way

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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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Know someone on the job? Send us details of his or her favourite tip and tool and you could win \$50 worth of BRANZ books.