

# BUILDER'S MATE

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## Concrete formwork for slabs and low walls

**Concrete is heavy stuff – a cubic metre of concrete and reinforcing can weigh almost 2 ½ tonnes – and it exerts a significant force against formwork. So formwork must be strong. It also has to be constructed without gaps so the concrete stays where it should until it hardens.**

Some people use proprietary systems, but if you are making your own with timber and fixings, consider:

- Higher grades of timber are likely to be more 'true' than boxing grade, and can be better to work with
- Plywood used for formwork is stronger if it has the face grain of the outer ply running parallel with the

span of the sheet

- Absorbent surfaces will draw moisture out of the concrete, which you generally don't want.

When you are designing and putting the formwork together:

- Sole plates should be firmly anchored to



## INDUSTRY NEWS

### Revised guidance on Christchurch repairs

In late 2011, the Department of Building and Housing issued updated guidance for repairing and rebuilding Canterbury houses. This supersedes the December 2010 guidance. It includes information on foundations, repairs to house superstructures and chimneys, assessments of retaining walls on hillside properties, and repairs to foundations and new foundations in certain areas.

### Builder licensing

From 1 March, certain types of building work can only be carried out by a licensed building practitioner, or must be supervised by an LBP. See [www.dbh.govt.nz/lbp](http://www.dbh.govt.nz/lbp)

### BRANZ YouTube videos

Get an inside view of the work at BRANZ in our YouTube clips. You'll find the link to them on our home page [www.branz.co.nz](http://www.branz.co.nz). Take a look!

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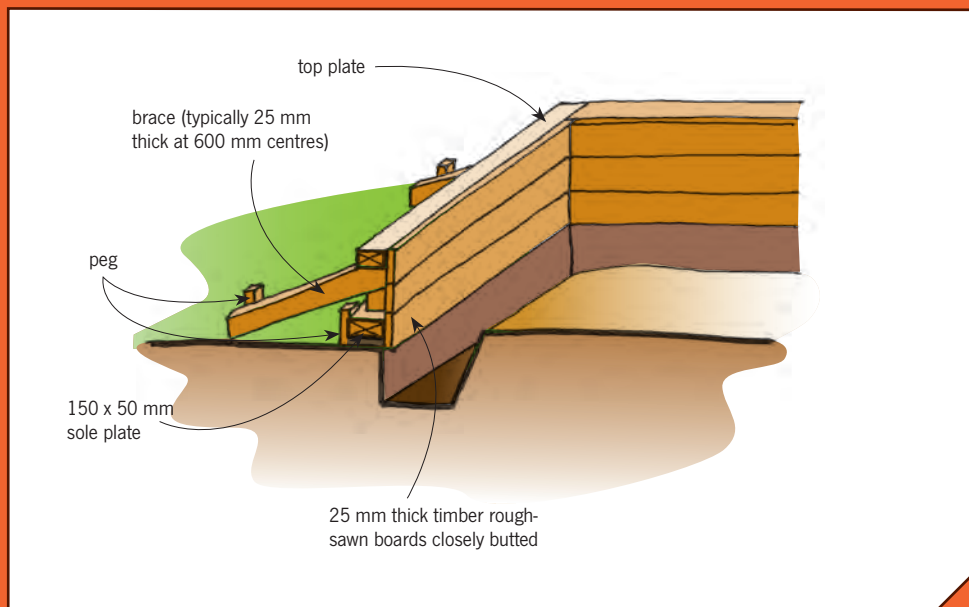


Figure 1 Formwork for thickened edge slab up to 600 mm high.

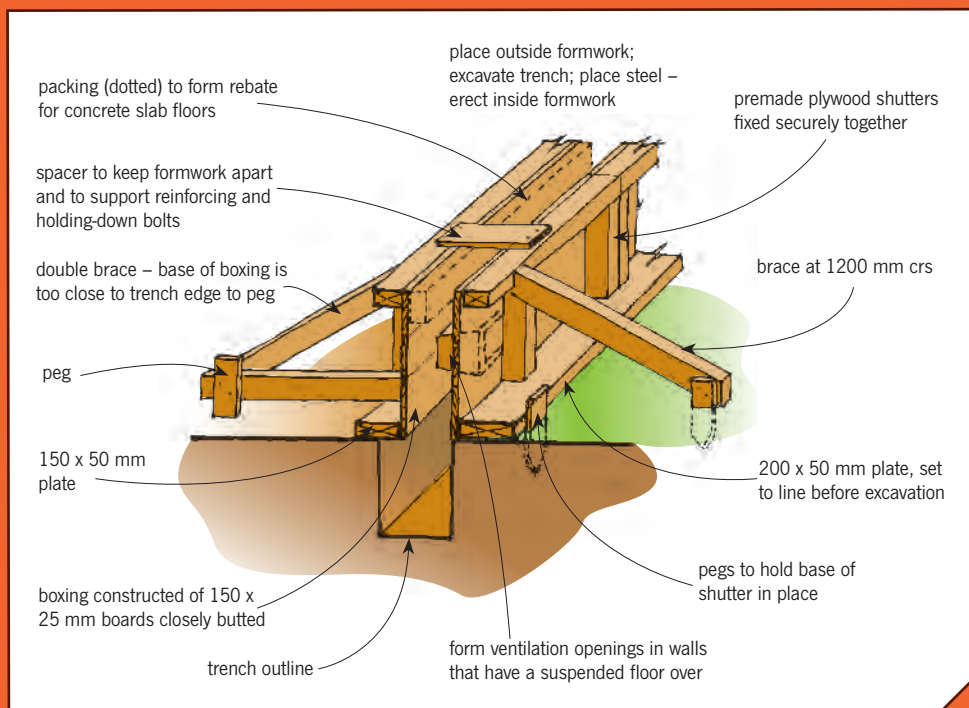


Figure 2 Foundation formwork for low walls.

the ground so they don't move during concrete placement

- Formwork needs to be braced (see drawings) for strength and stability
- Make sure there is reasonable access to pour the concrete and vibrate it
- Work out if you want the top of the formwork to give you a line to let you screed the top of the concrete accurately
- Consider the fixings you will need to hold the formwork together – some may have to remain in the concrete
- Make sure running joints in formwork are tightly butted together. This will minimize the need for additional work after stripping
- Don't allow for any deflection greater than 3 mm, or 1 mm for each 270 mm of the span
- Seal cut edges of coated plywood (formply) to stop them drawing water out of the concrete
- Leave the heads of nails proud of the formwork to allow easy removal, or use screws instead.

Once it is built, give the formwork a good workout by pushing and pulling in all directions to judge its strength – it must be strong.

Don't rush to strip it off once the concrete is hard. Keeping it in place helps to control the release of moisture during the curing process.

Clean formwork straight after you've stripped it off the concrete.



# Dribblings from the Old Geezer

We have three sheep, Hipi, Pipi and Jermaine. They always think the grass is greener on the other side despite me telling them otherwise ... and to stop wrecking the fences. I thought of them after a chat with a Canadian traveller called Chris who stopped with us a while. He lives in remote Yukon, 40 kilometres from the nearest village. Apart from being fascinated by his life in the wilds, I was interested to learn that 'his' village is unincorporated and as such has no Mayor or local authority. The Mounties take care of crime issues, and otherwise everyone is responsible for their own actions and how they treat others and the environment. Very grown-up.

Chris showed me photos of his log cabin and recounted how he and his partner had obtained the land by claiming it and had then built the dwelling themselves. No building consent was needed because no one has authority over them. They are solely responsible for clothing, feeding and housing

themselves without interference. Earnings from the wilderness courses they run accrue income tax but the only other contribution they must make is an annual 'education' fee ... despite having no children.

However, just when I was thinking how like nirvana this would be, he mentioned that there were dick-heads there who didn't respect others or the environment and probably the masses needed rules and ruling. Bugger! Insurance was another problem – you can't have it. Which brought me back to the fact that the RMA and the Building Act and the fact that our system might have its benefits – and our sheep.

**Des Molloy**

## TRADITIONAL SKILLS PART 1

# Fibrous Plaster

To make fibrous plaster today, small strands of glass fibre (called rovings) are sprayed onto gypsum plaster and set in a mould. The technique is most commonly used to produce cornices, ceiling centres and decorations, fireplace surrounds, corbels, battens, wall niches and other decorative building elements.

It is a material with a long history: fibrous plaster was first produced in New Zealand over a century ago, and until the late 1930s it was used for the linings and decorative trims of many houses, including early state houses. A lot of today's fibrous plasterwork goes into repairs and restorations in older houses.

But it is not just a product for renovations. Many products today have clean lines to suit modern buildings. The main change in the materials over time was the move from hemp or sisal to glass fibre rovings, which make today's products lighter and stronger.

The surface of fibrous plaster gives the highest level of finish available for walls and ceilings because the joint finish is the same as the sheet surface. Sheets can be fitted to timber or steel ceiling battens or studs.

Around 10 companies manufacture fibrous plaster products in New Zealand today.

The BCITO offers National Certificates in Fibrous Plaster Manufacture and Fibrous Plaster installation. These are achieved through completing an apprenticeship.



- 1.** A face gauge of plaster is brushed onto the long mould to make a patterned cornice.



- 3.** The rovings are gently pressed into the plaster. The cornice back is formed so that there is a 90° angle where the cornice will meet the wall and ceiling.



- 2.** Once the face gauge has "tacked-up", a small portion of body gauge is applied, followed by the application of glass fibre rovings.



- 4.** The finished cornice is removed from the mould. Above, apprentice Tim Radich with the finished cornice, which will be hung to dry completely before installation.



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# COMPETITION Win!



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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 "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 2 March 2012. 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 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 2 March 2012. 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?



The winner of the BM 51 competition was George Peterson of Glendowie, Auckland. The mystery tool was a holdfast, let into a carpenter's bench for holding sticks of timber while planing etc and the prize was a reciprocating saw.

# What's wrong with these PICTURES?

# 1

**A BOOT FLASHING FOR A PIPE PENETRATION TO A PROFILED METAL ROOF**



# 2

**A WINDOW HEAD FLASHING ON A CAVITY WALL**



1. The flashing has been incorrectly installed flat across the profile of the roofing – it should have been turned 45°. (See the NZ Metal Roofing Manufacturers' Code of Practice for a correct detail.) And the use of the silicon sealant is excessive!

2. There are three problems here: (i) There is insufficient slope on the flashing: it should slope at least 15° from the back to the front; (ii) there is no additional wall underlay taped to the top of the flashing; (iii) there is no stop-end on the flashing. (See Figure 38 in the BRANZ book Building Basics Weatherliness for the correct detail.)

Answers:

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