

Builder's MATE



FREE TO ALL BUILDERS

March 2006
Issue 16

Cosying up to insulation



We insulate our houses to make them more comfortable. This has the added bonus of reducing energy bills, lowering the risk of mould, and improving the durability of internal finishes because our homes are generally drier inside. With new homes and major renovations, the New Zealand Building Code (NZBC) requires minimum levels of insulation, under E3 Internal Moisture (prevention of fungal growth) and H1 Energy Efficiency.

Insulation is achieved by either trapping air in small pockets, or for floors by reducing radiation loss with the use of shiny foils, or by using polystyrene blocks to trap air. All types of insulation perform poorly if they're not installed properly. A 2 mm gap between insulation and framing in a timber framed wall can produce up to a 23% loss in insulation performance!

Our houses use approximately 4-5 m of timber for each m² of wall constructed (slightly less for ceilings). If the timber is 50 mm thick this means 200-250 mm of every linear metre of wall is solid timber that does not insulate as well as a material manufactured for insulation. It is vital that the remaining 75-80% of wall area is insulated correctly and performing to a much higher level.

Over the page, a table from BRANZ Bulletin 357 *Thermal Insulation of Houses* summarises the insulation materials being used and the key installation points. The BRANZ *House Insulation Guide*, updated last year, is another useful reference.

(Continued on p2)



Industry News

A tough start to 2006

The first three weeks of January were tragic with nine people killed in work accidents. Seven of the deaths involved crushing. Chief Advisor for the health and safety section of the Department of Labour, Mike Cosman, said that "A lack of concentration or disregard for basic safety precautions seem to be common factors." Students and young people in holiday jobs were especially vulnerable because they might not have the physical or emotional maturity, skills or experience required to carry out the job safely. Supervision needed to be higher than usual.

The Department of Labour's booklet, *Occupational Health Tools*, can help with safety in the work place. Download from: www.osh.govt.nz/order/catalogue/healthtools.shtml.

HAMMER 'N' NAILS

SORRY NAILS,
THERE'S NO ITO FOR
DOG ASSISTANTS.



Inside: Win! a Bosch GSB18VE2 Cordless Drill worth over \$750!

Use and installation criteria

Insulating material	Key installation points
Applies to all materials	<p>Insulating material must:</p> <ul style="list-style-type: none"> • be installed following the material's health and safety recommendations for handling – this often means wearing protective clothing and a mask • be kept clean and dry • be kept well clear of flues • not be tightly packed around electrical wiring • in ceilings, be kept out of water tank overflow trays • in roofs, have the top of the insulation at least 25 mm below the underside of non-rigid underlays
Glass wool segments	<ul style="list-style-type: none"> • be fitted firmly between the framing without gaps • not have its thickness compressed – this would reduce its R-value • not have tucks or folds • in walls, not be allowed to sag – it should have almost the same thickness as the wall cavity
Macerated paper, glass wool, mineral fibre or sheep wool loose fill	<ul style="list-style-type: none"> • in roof spaces, not be able to be shifted by wind movement through the space • be installed at the design density with extra thickness to allow for settling over time • be maintained at its design (installed) thickness and not be compressed (i.e. items stored on top of it) • not be installed with gaps or voids
Perforated foils	<ul style="list-style-type: none"> • only be used under suspended floors • be used with a sheet lining when the subfloor is not enclosed by a continuous foundation wall • have, when draped over floor joists, a sag at mid span of at least 100 mm • have the flooring laid in a way which prevents the foil being damaged, particularly if timber board floors are being laid • have the foil sealed or stapled to boundary joists, blocking or framing which is at right angles to the draped foil • have ends turned up to prevent any through-flow of air
Polystyrene, polyurethane rigid boards	<ul style="list-style-type: none"> • when part of an exterior cladding system, be over-coated with a protective waterproof skin • when used under a concrete slab-on-ground, be laid over the damp-proofing membrane • be securely fixed in place when fixed over framing, particularly when used as part of or under a cladding
Expanded foams	<ul style="list-style-type: none"> • for domestic installations, be urea formaldehyde (UF) foam • after installation, have living spaces well ventilated for at least 30 days to remove fumes and moisture given off during curing • not be used in the cavity of masonry veneer construction
Insulating plasters	<ul style="list-style-type: none"> • be applied to the design thickness and plaster mix • for exterior walls, be protected from the weather by a suitable coating system

Need a hand? If you've got a building problem that needs fixing, get on the blower to Eddie Bruce at BRANZ advisory helpline!

Builders call **0800 80 80 85**. Home owners call **0900 5 90 90**

(0900 calls cost \$1.99 per minute, plus GST)

Next issue: In-situ concrete walls.

Builder's Mate 17 out 1 May 2006. Don't miss it!

STEP-BY-STEP

Leading the way

OSH recommends all electrical tools and leads are tested and tagged every three months. Have a look at your gear.



Time to throw away the lead or have it re-ended by an electrician.



Outer protection has gone, throw the lead way.



Insulation tape hides damage, throw it away.



This old way of keeping the leads from parting caused damage. Get the right fitting.



It might be convenient to tie to scaffolding but damage will result. Use a rope tie or similar to achieve the same result.

Cavities

For most claddings, any drained and vented cavity is formed by fixing approximately 20 mm thick battens vertically over the wall underlay to the studs to provide a free draining void or space behind the cladding, (see Figure 1). The only place where full-length horizontal battens are used is at the top of the wall to block the top of the cavity to prevent air flow into the roof space, or at horizontal movement control joints to support the top of the lower sheet,

provided the flashing bridges the cavity. E2/AS1 does show a 5° sloped horizontal batten with 50 mm gaps at each end which can be used on dwangs and also at the bottom of cladding for fixings etc, or where a horizontal flashing does not bridge the cavity. Proprietary perforated metal and plastic closers are available for the bottom of cavities that provide vermin control.

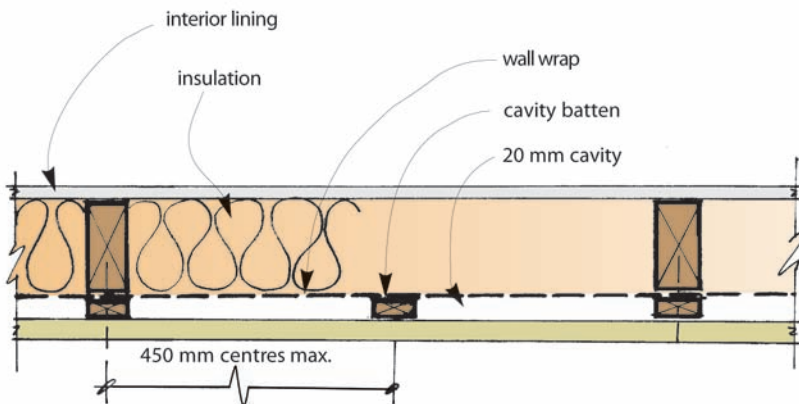


Figure 1: Vertical cavity battens.

Vertical corrugated sheet claddings have gaps behind the cladding that provide significant drainage and ventilation giving benefits similar to a battened cavity. This is why vertical corrugate is able to be direct-fixed. Horizontal profiled metal however must always be fixed over a cavity. If the cavity batten treatment contains copper then the metal cladding must be isolated from it. This can be done adding a layer of paper-based wall underlay or strips of DPC, (see figure 2). Alternatively you could use pre-primed battens (see E2/AS1 9.6.9.2).

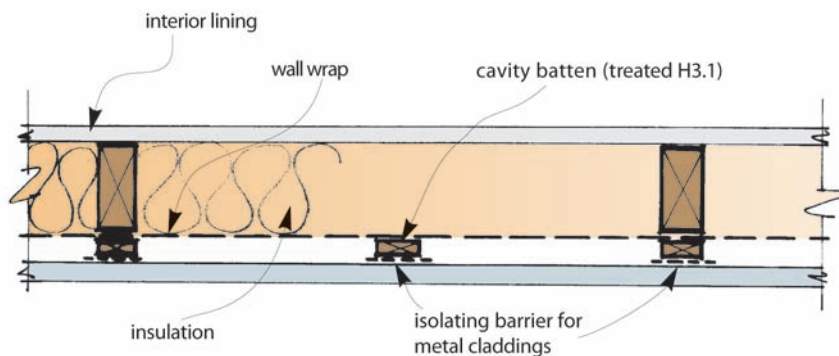


Figure 2: Profiled metal sheet cladding.

It is vital that the wall cladding, the flashings, the cavity battens and the wall underlay are all compatible. Check with the cladding and underlay manufacturers that their requirements have been met. Each part of a system should have the durability which matches the specified intended life of the system.



Dribblings from the old geezer

The Building Act is already starting to show its claws...in a good way. The Act moved a few responsibilities around and now makes it hard to get a building consent with crappy documents. The councils are sending the poor submissions back to the drawing board until they are happy that there is enough detail presented to them that when built, the building will meet the NZBC.

This means better documentation reaches the sites, making it so much easier for the builders...and ain't that great. Already this is being noticed and appreciated by our front-line warriors. They don't have as much to complain about now, so spend the time doing what they do best...building. Doesn't it seem simple...the designers design, the inspectors inspect, and the builders build. If we all do our part, fully and well, the client will get what they have always wanted...the house they have paid for. And best of all, it will meet the building code and get a CCC. The only downside is that if the building official needs to ask for more information then the processing stops until it is provided, extending the time beyond the 20 days laid down in the Act...but they are all working on it. It might not happen overnight but it will happen...ask Rachel.

Des Molloy, BRANZ Ltd Technical Writer and Presenter

Product Information

Weathertight sills

The Silltray System is a modular uPVC system for use as a second line of defence against moisture around aluminium joinery. It provides a direct path for any water passing through the joinery to be directed to the outside of the cladding. The system is customised to suit the cladding and window installation. For more information: www.silltray.co.nz



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win! A Bosch GSB18VE2 Cordless Drill worth over \$750!



Special features includes the new casing which will allow it to be dropped from 2 metres without breaking. A powerful motor measuring 48 mm in diameter with special magnets give it extra Grunt. It comes with Impact for drilling masonry, 2 speed-variable-reverse-torque settings, two 1 hour charge batteries, all in a carry case. Industrial quality.

What is the name of this pictured tool and what is it used for?



Terms and conditions: Entry is open to all New Zealand residents except employees and immediate families of BRANZ Ltd, BRANZ Inc, BRANZ Pty and The Tool Shed shops. The competition will close on Friday 7 April 2006. The prize is not transferable for cash. The judge's decision is final. No correspondence will be entered into. BRANZ Ltd may, from time to time, send you information about our products. You can contact us at any time if you do not wish to receive this information.

The prize is provided courtesy of The Tool Shed.

All you need to win is tell us the name of the mystery tool and what it's used for.

Send us your answer (one entry per entrant please) on the back of an envelope together with your name and address. Post it (you don't need a stamp) to: Builder's Mate 16, Mystery Tool Competition, FREEPOST BRANZ, Private Bag 50908, Porirua City.

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 7 April 2006. 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 May 2006.

Blokes on the job



Colin Ross, on site in Tauranga.

Favourite tool: a doggy bar – a small nail puller.

Favourite tip: don't let go of your hammer on the back swing. Use architrave when horizontally fixing gib - don't use slimline. Don't take short cuts.



Duncan Bell, at Ngunguru, near Whangarei.

Favourite tip: keep a happy site.

Favourite tool: a compass... (he was building a huge house).



Zuyod Niguatav, restoring a mausoleum near Samarkand.

Favourite tip: respect your elders and do your work carefully.

Favourite tool: a wood plane.

Builder's Mate winners!



The winner of the BM 15 competition is Viv Page of Ashburton, who correctly identified the tool as a two-speed breast drill. Viv wins a Dynamic 2.5hp compressor.

Pictured: Winner of the BM 14 competition Alan Macdonald, receiving his Izzy 1200 w inverter from Chris Howarth of The Tool Shed in Hamilton.

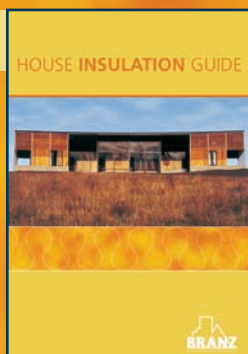
BRANZ HOUSE INSULATION GUIDE

• 2nd edition • bigger • easier to read • reformatted

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Standards referred to can be purchased from Standards New Zealand.
Tel: 04 498 5991 or www.standards.co.nz.

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