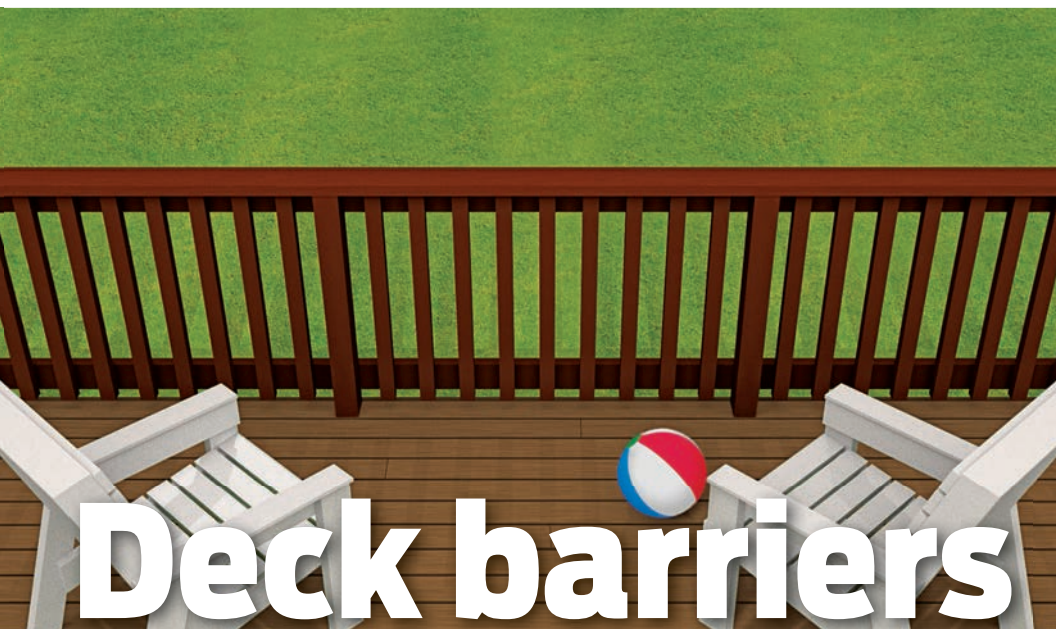


builder's mate



Deck barriers

There are lots of rules to comply with when you build a deck barrier, but help is at hand to make the job easier.

In 2012, the Ministry of Business, Innovation and Employment – Building and Housing Group published *Guidance on barrier design*. A timber barrier that complies with paragraph 4.2.7 of *Guidance on barrier design* meets the requirements of Building Code clauses B2 *Durability* and F4 *Safety from falling*.

Barriers for residential decks must:

- be continuous where the fall height is over 1.0 m
- be at least 1.0 m high
- have openings that prevent a 100 mm diameter sphere passing through
- have no gaps 15 mm or more between horizontal rails
- have the top of the barrier at least 760 mm above a fixed seat
- have no sharp edges or projections.

Durability

Barrier structural components must generally have not less than 50-year durability, but if other barrier

components and fixings can be accessed and replaced without difficulty and failures can be easily detected, the durability may be not less than 15 years.

Barrier materials

Barrier materials for timber decks include timber, glass or metals (aluminium, mild steel and stainless steel).

Timber species and grades for residential deck barriers should be selected in accordance with NZS 3603:1993 *Timber structures standard*. The timber grade must be at least SG8 (wet in service) except infill members, which may be SG6 (wet in service). *Pinus radiata* must be treated to H3.2.

Select metal fixings in accordance with NZS 3604:2011 *Timber-framed buildings* section 4.4 to have the same durability as the components they connect with. The edge, boundary and deck joists must be selected in accordance with NZS 3604 section 7.4.

INDUSTRY NEWS

Costs under scrutiny

The government has begun work on a study of New Zealand's residential construction costs. Prompted by reports of poor productivity, quality issues and costs significantly higher here than in Australia, the market study is aimed at finding ways to enhance New Zealand's market competitiveness and productivity.

The Ministry of Business, Innovation and Employment released an issues paper for industry comment and is now studying the responses it received.

Huge boost in apprentice numbers

The Building and Construction Industry Training Organisation (BCITO) has seen a 22% jump in new building apprenticeships.

Auckland has seen a 42% increase in apprenticeship sign-ups, with a 38% increase in Christchurch.

It is estimated that over 90% of BCITO apprentices who have signed up since 6 March 2013 are eligible for the government's Reboot grant of \$2,000 towards tools and training costs.

Upcoming seminars

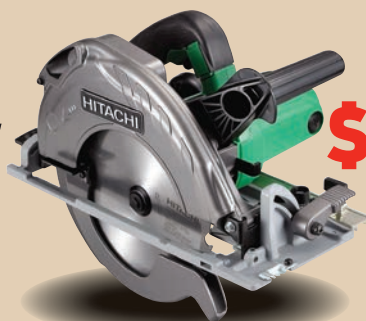
Look out for new BRANZ seminars *Building Seismic Resilience* (26 Aug–5 Sept) and *Fire Zone Modelling* (23–27 Sept). Full details are on the website www.branz.co.nz/seminars

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HAMMER 'N' NAILS



Glass for structural barriers must be grade A toughened safety glass. Infill glass panels that are edge supported must be the same or grade A laminated. There are a variety of support systems for glass barriers.

Aluminium barriers must be designed in accordance with AS/NZS 1664.1 *Aluminium structures* or tested to comply with AS/NZS 1170.0 Appendix B. Aluminium can have either an anodised or a powder-coated finish.

Steel barriers must be in accordance with AS/NZS 3404 *Steel structures standard* or tested to comply with AS/NZS 1170.0 Appendix B. Mild steel has poor corrosion resistance and requires an applied corrosion protection such as hot-dip galvanising.

Stainless steel barriers must be either grade 304 for use in non-corrosive environments or grade 316 for use in corrosive environments. Finishes include satin, brushed and polished.

Stainless steel wire is frequently used for the baluster infill, usually fixed to stainless steel posts and rails, but an aluminium structure may be used. Wires should be multi-stranded grade 316 stainless steel in all situations, although grade 304 is allowed in sheltered situations. Vertical or near vertical wires must be taut so that they cannot be forced apart to create a gap of more than 100 mm between them.

For more information, see *Build 135 Deck barriers* (pages 32–35), *Guidance on barrier design* (MBIE, downloadable from www.dbh.govt.nz/guidance-information/) or *Codewords 54* (MBIE, see www.dbh.govt.nz/codewords-issue-054/).

TABLE 1: RECOMMENDED SIZES FOR TIMBER BARRIER COMPONENTS	
Component	Size (mm) and fixing
Handrail	90 × 45 minimum fixed with 4/100 × 3.75 nails to each structural post
Structural posts	90 × 90 fixed to double end or boundary joists (as per NZS 3604: 7.10(c)) with 2/M12 bolts
Top and bottom rails	90 × 45 minimum fixed with 4/100 × 3.75 nails between or to inner or outer faces of structural posts
Palings	125 × 25 between top and bottom rails fixed with 3/60 × 3.15 nails each end of paling

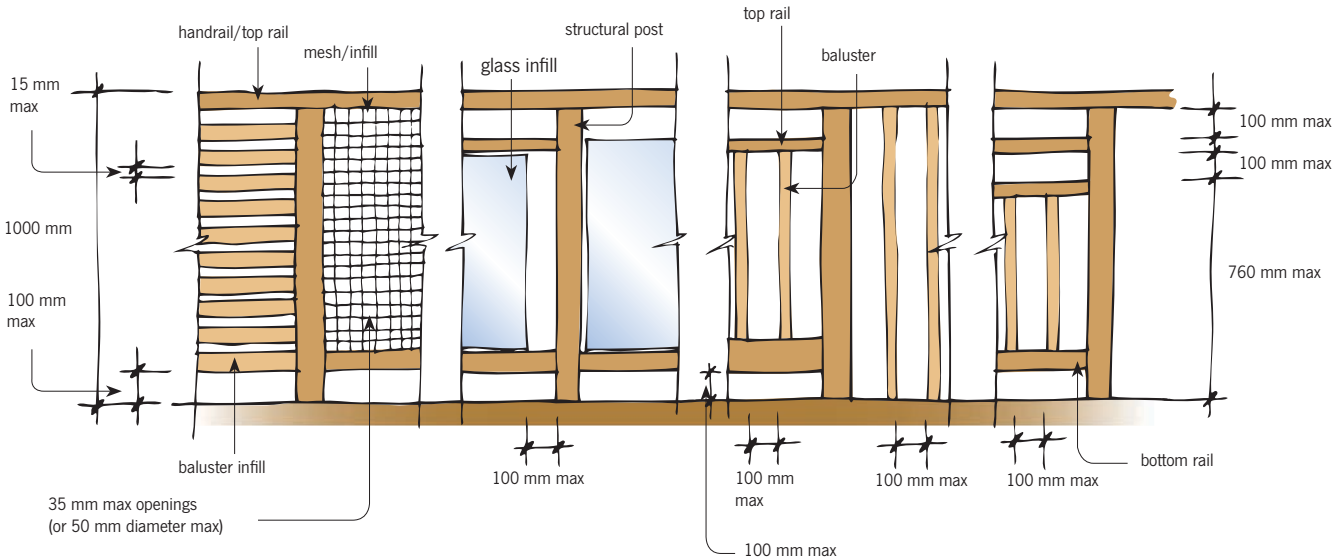


Figure 1. Elements of barriers.



Mouth piece

New Zealand, and especially Auckland, is facing a housing challenge. Not enough housing is being built, there is an insufficient variety of housing types, and homes are priced beyond the means of an increasing number of New Zealanders. Throw in the widely disparate quality of the nation's housing stock and we, as an industry, have our work cut out for us. With residential housing across New Zealand having an estimated value of \$625 billion, it's imperative we come up with some answers, and soon.

New Zealand's housing issues are well documented, and many government agencies are trying to find solutions. Can the problems be solved by releasing more land? Or freeing up the regulatory environment? Or involving government more in the building of houses for New Zealanders? Or moving to modular and prefabricated construction? Or creating new types of housing...?

We're not alone. Architects and communities in cities all around the world are trying to address the

pressing need for good-quality, higher-density housing, and there are lessons New Zealand can learn from overseas exemplars. At the same time, we have to ensure the housing we produce is appropriate for our communities, our climate, our environment and our economy. This is where architects and the building industry can together make a real difference – to the quality of the nation's houses and, therefore, the quality of New Zealanders' lives.

It's critical that design solutions for our housing needs are affordable to build, buy, own, inhabit and maintain. In the construction industry, we're in this together. What we need is significant collaboration, across agencies, councils, professions and trades. Together, we can meet New Zealand's housing challenge.

Teena Hale Pennington
Chief Executive Officer
New Zealand Institute of Architects

Steel straps on timber framing

Do you know the key points on wall and roof framing where 25 × 1 mm galvanised mild steel strapping is required?

Most straps are needed on the roof to resist wind uplift pressure. Where a roof is directly supported over an opening, the load must be transferred around the opening and down to the foundations through the wall and floor framing.

Strapping of roofs is required at these connections:

- Rafter to top plate.
- Truss to top plate (straps and/or wire dogs).
- Over adjacent rafters supported by a ridge beam and when they support the ceiling lining.
- Dummy rafters over sarking or ceiling lining and supporting purlins.
- Timber members connecting a top plate and a parallel floor or roof framing member to provide lateral support.

Wall framing

Wall framing strapping is required:

- at the base of built-up studs supporting a ridge beam (Figure 2)

- at some bracing wall panel ends – follow the panel manufacturer's fixing instructions
- where a lintel supports a rafter or truss (depending on wind zone/lintel span/loaded dimension). Straps secure lintel to trimming stud and trimming stud to floor joist or solid blocking. Straps must be fixed with six 30 × 2.5 mm nails into both lintel and trimming stud.

For a single-storey building or top floor of a building with more than one floor, tying down is also required between:

- top plate and lintel
- top plate and jack studs
- trimming studs and top plate.

Fixing the trimming stud to the floor joist applies to a single-storey building or to upper floor framing to the intermediate floor.

With ground floor framing on a concrete slab, straps are folded under the bottom plate and fixed to each side of the stud with six 30 × 2.5 mm nails.

For more, see *Build* 131 To strap or not to strap (pages 16–17) and NZS 3604:2011 *Timber-framed buildings*.

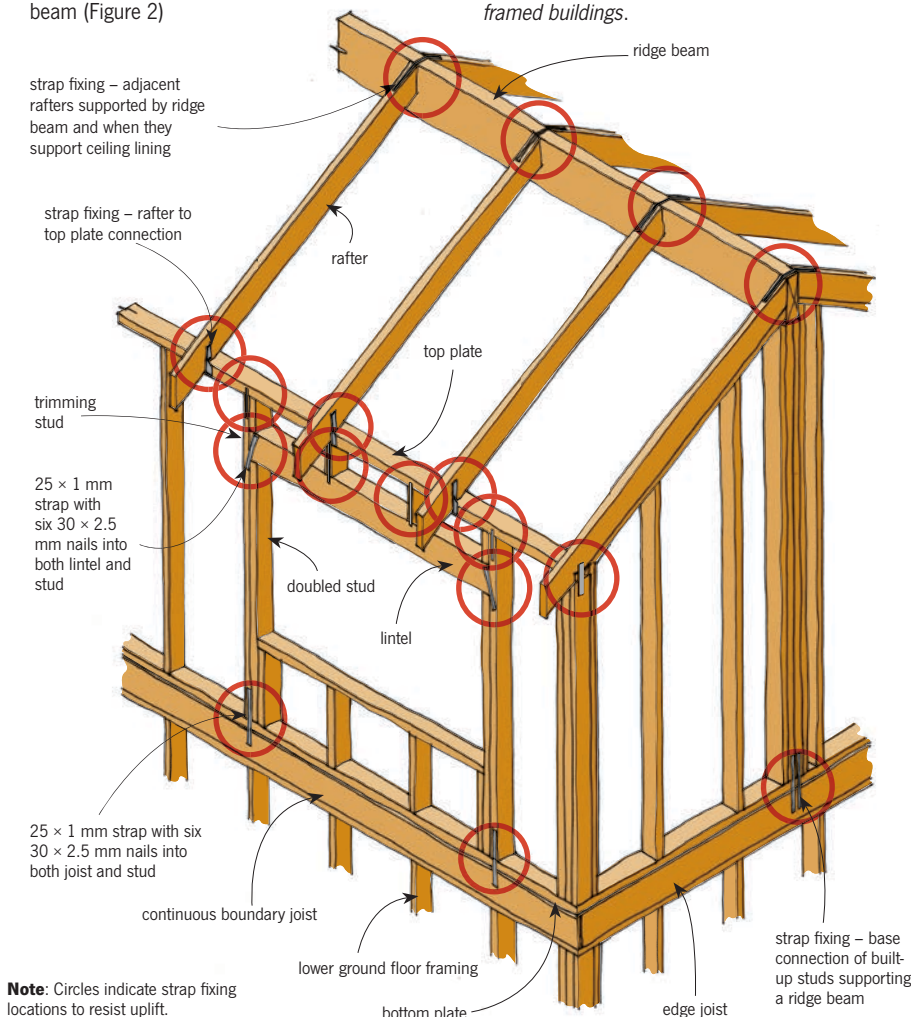


Figure 2. Framing locations requiring strap fixing.

build

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All building contractors who are in the business of building and have paid a Building Research Levy in the current year can receive BRANZ's *Build* magazine for free. This Levy is paid as part of the building consent fee on all construction projects over \$20,000. If you are missing out on your free copy of *Build*, call 0800 80 80 85 (press 2) or email vera.chan@branz.co.nz.



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Competition

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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).

Email your answer to buildersmate@branz.co.nz. Put "August 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 September 2013. 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 October 2013.



Winner of the June competition was Joe Johnston of Hampden. Joe wins a DeWalt router/trimmer worth \$389. The mystery tool was a pipe cutter. Pictured: April winner Matthew Nant receives his prize from Patrick McLennan at the Penrose Toolshed.

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 September 2013. The prize is not transferable for cash. The judge's decision is final. No correspondence will be entered into.

What's wrong in these PICTURES?



1 MASONRY WALL



2 CONCRETE SLAB

2. Trying to float the concrete when it was too wet has resulted in a poor quality surface.

1. A concrete path and steps have removed the required ground clearance at the base of this masonry wall and blocked weepholes.

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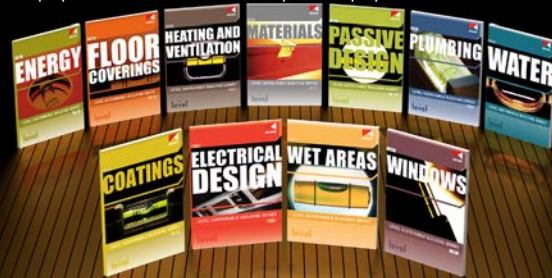
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