
Issue No. 146 ***January 2012***

Hello and welcome to the first edition of 2012. The year looks like another year full of change and new challenges, especially round the licensing of builders restricted building work and amendments to the Building Act.

In this issue we have articles on the following subjects:

- New Zealand Fire Service – Design Review Update
- New Zealand Fire Service – Efficiency at Plastic Skylight Panels as Smoke Vents in the Event of Fire
- IPENZ Practise Note 22 – Guidelines for documenting fire safety designs.
- Guidance on barrier design – from DBH
- Mitek – Information brochures
  - Gable end bracing
  - Gable end raking verge
- Licensing Update Issue 18 – November 2011 from DBH
- BRANZ Guideline November 2011 – Choosing Nails and Screws for Framing and Cladding
- BRANZ Guideline November 2011 – H1 Calculations and Skylights
- Compliance Q's and A's – New Zealand NZS 3604 2011 : Timber Framed Buildings
- Quiz on articles in this news sheet.

The Building Department trust that you have all had a great holiday and are fully refreshed for another year of toil.

**NEW ZEALAND FIRE SERVICE**

**DESIGN REVIEW UPDATE**

**NOVEMBER 2011**

## INTRODUCTION

Much has been happening in the fire engineering field and with the daily deadlines, it can be a challenge to keep up. To assist you we want to discuss a few of these changes.

## ELECTRONIC MEDIA

The NZFS is moving to an integrated information technology system to assist us to maintain our records and meet regulatory timelines. We are pleased to report nearly all S46 building consent applications are now sent to us in electronic medium and all of our responses are returned electronically. Feedback from the BCAs across the country has been positive on this change.

To assist with this process we request wherever possible consent documentation is forwarded to us in the original searchable and subdivided electronic format supplied by the applicant, together with an email address to allow timely response.

Please submit your applications to: DRU@fire.org.nz
(You should receive a confirmation of receipt response within 48 hours, if not, please contact us)

**Note: This is for a BCA as they send the application to the NZFS design review unit.**

## GUIDELINES FOR DOCUMENTING FIRE SAFETY DESIGNS

The Department of Building and Housing have published, as Section 174 advice, the above document. This has been endorsed by IPENZ as a Practice Note, Number 22.

This document is available at:

Guidance information published under Section 175 of the Building – Department of Building and Housing

The New Zealand Fire Service will refer to this document in all their memorandums provided under Section 46 in the new year. We will be providing more detail on this later.

## EFFECTIVE VENTING

Some confusion appears to exist over the use of clear plastic roofing material as a means of providing effective venting.

The use of plastic roofing material has been the subject of two determinations. The Department of Building and Housing has made the following ruling:

*"In Determination 2010/105, I evaluated the arguments of the parties and came to a view as follows:*

> *… I am of the view that the evidence and information provided to me about the rationale and means of effective fire venting through using the BRP roof panels is not sufficient to demonstrate Building Code compliance. Therefore, due to the lack of scientific evidence available at this time, I conclude there is insufficient information to demonstrate that [the fire design], in respect of the GRP roof panels, meets the performance requirements of Building Code Clause C4.3.1."*

In the light of these determinations it would appear that the continuing acceptance of the use of any plastic roofing material (GRP or polycarbonate) by a BCA fails to meet the test specified in S49 of the Building Act.

A BCA must be reasonably satisfied that the provisions of the building code would be met if the building work was completed in accordance with the plans and specifications accompanying the application.

This matter was covered in detail in the February 2008 issue of Codewords.

DBH Codewords

To date the New Zealand Fire Service has only received a range of opinions from fire designers regarding the use of plastic roofing material. Opinion does not constitute technical or scientific evidence.

A report by Gaskin indicates polycarbonate material is unpredictable in a fire situation and also raises serious health and safety concerns for the NZFS.

University of Canterbury, Gaskin et al

We have placed the use of this materials on our watch list and will continue to investigate the subsequent performance of these materials post fire as part of our fire investigation work. A summary of some recent plastic panel venting fire investigations can be found here.

For your information we publish our post fire investigations on our website:

New Zealand Fire Service – Fire Investigation

**TITLE:** The Efficiency of Plastic Skylight Panels as Smoke Vents in the Event of Fire
**AUTHORS:** Gaskin, Jeremy Mervyn
**KEYWORDS:** smoke vents plastic skylights
**ISSUE DATE:** 2010
**ABSTRACT:** Concerns have been raised over the use of plastic skylights as smoke vents in large single storey buildings. The plastic skylights provide natural light to the building. There has been an assumption that these plastic panels will melt and provide smoke and heat venting during a fire. The plastics commonly used in New Zealand, polyvinyl chloride (PVC), polycarbonate, acrylic and glass fibre-reinforced polyester (GRP) have been tested in small scale experiments to further the understanding of the behaviour of the materials at elevated temperatures. The behaviour of particular interest is the effectiveness of the skylight as a vent for hot buoyant gases. Small scale experiments have been conducted to find the mass flow rate of an unobstructed vent. Experiments have then been carried out on samples of the four skylight materials for a range of exposure temperatures and times. The mass flow has been measured for the deformed sample and compared to the unobstructed flow. The results of the small scale experiments have been analysed and an empirical relationship has been developed for the PVC and polycarbonate materials. The acrylic behaviour does not provide enough data to include it in the empirical relationship. The GRP failed to melt and was therefore also excluded from the empirical relationship. A model has been developed to demonstrate the use of the empirical relationship. The model compares four cases, the vents always open, the vents always closed, the vents opening at a single value and the area when calculated using the empirical relationship.
**PUBLISHER:** University of Canterbury. Civil and Natural Resources Engineering
**DEGREE:** Master of Engineering in Fire Engineering

**IPENZ PRACTICE NOTE 22 – GUIDELINES FOR DOCUMENTING FIRE SAFETY DESIGNS – VERSION 1 – SEPTEMBER 2011**

Sections of this document have been produced for your guidance.

The full document is available form the DBH website www.dbh.govt.nz

The document is 36 pages and is free to download from the IPENZ or DBH websites.

# 1. Forward

This document is published as Practice Note 22 by the Institution of Professional Engineers New Zealand.

This Practice Note is also published by the Department of Building and Housing as guidance under section 175 of the Building Act 2004. It is not a substitute for professional or legal advice and should not be relief on as establishing compliance with the building code. It is not an "acceptable solution´ in terms of the Building Act and may be updated from time to time.

# 2. Introduction

One of the significant concerns with fire design practice in New Zealand has been poor fire design documentation. This has led to uncertainty about how to incorporate fire design into **plans and specifications**, and how the designs have been justified. This problem was identified by the Fire Engineering Task Force in 2007 and noted in the "Hot Topics" report on its findings and recommendations.

Fire safety design must be properly communicated and incorporated into a building's final **design documentation**. The documentation must describe and justify the fire safety design to enable a **building consent** to be issued.

**Design documentation** submitted for consent must describe the building's **intended use** and provide the detail from which the **building work** can be completed. It must also justify, if necessary, the fire design's adequacy and advise proposals, if any, for checking on-site construction. Finally, if **specified systems** are involved the **design documentation** must nominate the necessary ongoing maintenance and inspection requirements to keep those systems functional after the **building work** has been completed.

This Practice Note provides guidelines for **fire designers**, other design professionals, **Building Consent Authorities (BCAs)** and the New Zealand Fire Service. It is important to note that the New Zealand fire engineering profession and the Department of Building and Housing (DBH) regard these guidelines as the minimum level of documentation necessary.

The Practice Note outlines the documentation required to adequately describe a building project's fire engineering design solution, and how to record it for **building consent**. It also describes the type and extent of information required to record fire design requirements, how to communicate these to other members of the design team and the type and extent of information required to support applications for **building consent**.
In addition, this Practice Note specifies the information (summarised in the table on pages 11 to 18) that:

- A BCA could reasonably require with a **building consent** application
- Is expected to be provided by good designers.

Besides the aspects mentioned above, this Practice Note describes how **fire designers** should clearly communicate with other design professionals about features and systems that impact on fire safety. This will enable the **fire designer's** design intent to be accurately incorporated into the finished building.

This Practice Note provides guidance about the form of **design documentation**. There is considerable emphasis on graphical communication, rather than traditional text-based reports. It also lists expectations of the designers and their responsibilities for producing **plans and specifications** for construction.

The Practice Note does not offer guidance in relation to the fire safety solution's specific content, nor does it put forward advice about the design methodology or content of the calculations and justification that produced the solution. The scope and responsibilities for the parties who prepare various parts of **design documentation** is covered elsewhere, for example in the CIC *Design Documentation Guidelines*.

All fire safety design stakeholders are encouraged to insist on these guidelines being incorporated into the **fire designers'** and building design team's daily practice. This will improve the quality of fire **design documentation**.
Regular reviews and updates of this Practice Note are proposed. The input and assistance given by many **fire designers** and others to develop this Practice Note is acknowledged. This Practice Note has been developed with input from various workshops held around the country, attended by designers, representatives from BCAs, the Fire Service and the DBH.

# 3. Purpose of this Practice Note

This Practice Note:

- Provides guidance to **fire designers** by describing how design information should be recorded and communicated to the other design professionals
- Provides guidance on documenting the evidence which verifies that the fire design has been properly carried out and is accurately reflected in the construction documents; this justification is principally for the benefit of regulatory authorities
- Provides guidance to **BCAs** about where and how the final detail of the fire safety design should be documented and describes the information to be submitted with a **building consent** application
- Encourages a consistent level of documentation from **fire designers** regardless of the design methodology they use.

Although this Practice Note applies to designs that follow a prescriptive approach (using an **acceptable solution**) and to those using **specific fire engineering design**, the level of verification detail the designs require may differ. The Practice Note applies to new work and alterations to existing buildings.

This Practice Note does not describe the design process. It complements the *IPENZ Fire Engineering Taskforce Report*, the Construction Industry Council (CIC) *Design Documentation Guidelines*, the Society of Fire Protection Engineers *(SFPE) Engineering Guide to Performance Based Fire Protection* and the *International Fire Engineering Guidelines*, which address various aspects of fire engineering design. The latter two documents each describe a process for carrying out **specific fire engineering design** to meet general performance based objectives, although they do not detail exactly what should be included in **design documentation**. The SFPE *Code Officials Guide to Performance Based Design Review* also provides guidance on reviewing **specific fire engineering designs** and the documentation that should be produced.

Good-quality **design documentation** makes it easier for **BCAs** to process **building consent** applications. Applicants also benefit by having their applications processed in a smooth and timely manner.

Recommendations in this Practice Note are for typical minimum requirements for **building consent** approval. However they can also apply to documentation prepared when a building owner or occupier has objectives exceeding minimum **building code** requirements (e.g. for property protection). When a building owner or occupier has objectives exceeding the minimum **building code** requirements for fire safety (eg. property protection) the **design documentation** will record and reflect the client's brief. In most cases, documentation which is more comprehensive than the minimum recommendations provides a clearer understanding of the design intent and therefore provides a more reliable basis for future alterations to the building.

**Design documentation** also provides a record of the built environment, which is useful when building alterations are being planned. Access to the building's original design details – including the methodologies used, assumptions made, and the design limitations – is very important for assessing the impact of proposed changes.

Appendix A gives the definitions of the terms that appear in **bold** in this document. Relevant sections of the Building Act 2004 (Building Act) are given in Appendix B.

# 7. Other Building Act considerations

## 7.1 ALTERATIONS TO, CHANGING THE USE OF, AND SUB-DIVIDING EXISTING BUILDINGS

Where a building is altered, sub-divided or the use changes the building may need to be upgraded to comply with the current **building code**.

Where an existing building is being altered, the applicant must satisfy the **BCA** that after the alteration, the building will comply as nearly as reasonably practicable with the provisions of the **building code** relating to means of escape from fire (see section 112 of the Building Act 2004). Similarly, before changing a building's use, the owner must obtain written notice from the territorial authority that the building, in its new use, will comply as nearly as reasonably practicable with the provisions relating to means of escape from fire, protection of other property and fire rating performance (see section 115 of the Building Act 2004).

If applying for a subdivision that affects a building or part of a building, an owner must satisfy the territorial authority on reasonable grounds that the building, will comply as nearly as reasonably practicable with the provisions relating to means of escape from fire and protection of other property (see Building Act section 116A).

The **design documentation** submitted for a sub division or **building consent** for alterations and/or a change of use needs to detail and justify how the design will meet the Building Act and **building code** requirements.

## 7.2 VARIATIONS TO A BUILDING CONSENT

If there are any proposed changes to a **building consent**, the **BCA** needs to be given the details and justifications so they can consider and approve the change. Depending on the nature of the proposed change, getting the **BCA**'s approval can range from a simple phone call to a formal application for an amendment to the **building consent**. The important point is that in all cases, the **BCA**'s approval is needed before any work is carried out that differs from what was originally approved.

For more information, see the Department of Building and Housing's guidance document on **building consent** amendments at: www.dbh.govt.nz/publications-about-the-building-act-2004

## 7.3 APPLICATION TO WAIVE COMPLIANCE WITH A REQUIREMENT OF THE BUILDING CODE

If **building work** cannot, for a particular reason, comply with a **building code** requirement a **BCA**, which is a territorial authority, can waive the requirement to comply if it considers this is reasonable in the circumstances. The building owner must provide evidence to justify why the work does not need to meet the requirement, including any mitigating factors that may be relevant.

## GUIDANCE ON BARRIER DESIGN FROM DEPARTMENT OF BUILDING AND HOUSING

The Department has published Guidance on Barrier Design that covers a range of materials now being used for the construction of barriers. It provides a clear guide on how to achieve the relevant Building Code performance criteria for barriers.

**In line with latest Standards and building practice**

The guidance aligns barrier design with the current Standards, by incorporating loadings from AS/NZS 1170, Structural Design Actions. It also responds to current building practice – most barriers currently being built are of materials other than timber, such as glass, metal and concrete.

**B1/AS2 is no longer an Acceptable Solution from 1 February 2012**

The Acceptable Solution B1/AS2 covers only timber barriers and is being withdrawn. This means B1/AS2 will no longer apply as an Acceptable Solution from 1 February 2012. B1/AS2 is based on loadings specified in the superseded NZS 4203:1992.

The Guidance on barrier design addresses a range of areas including barrier geometry, loadings, deflection limits and testing procedures to provide a design's performance. It provides information for barriers constructed of timber, glass, concrete and metals and includes a useful checklist for building consent application checking at the end of the document.

**Guidance developed by industry specialists**

The guidance has been developed by a working group of structural engineers and specialists from the design, manufacturing and construction industries, in consultation with a number of industry participants.

**Become familiar with the Guidance**

We encourage building consent authorities and designers to become familiar with the Guidance on Barrier Design.

The Barrier Guidance is a 75 page document that is available to download from the Department of Building and Housing website, www.dbh.govt.nz

The Scope and Definitions Section 1.0 and 1.2 and Figure 1.1 and 3.1 Barrier Design Procedure have been reproduced for your information.

If you are involved in designing or construction barriers, please download the full document.

A copy of this document will be available for viewing at the Building Consents counter at the Invercargill City Council building.

# 1.0 Scope and Definitions

## 1.1 Scope

This document brings together relevant information required for designers, manufacturers and installers of barriers. It explains ways to design and install New Zealand Building Code (NZBC) compliant barriers and is issued under section 175 of the Building Act 2004. It provides recommendations for the design and construction of permanent barriers that are required in and around buildings.

**This guide is applicable to:**

- barriers to decks, stairs and landings,
- walls, glazing (including screens and full-height glazing), fences and other elements of buildings where these elements prevent a fall of one metre or more.

It is advisable to apply the recommendations included in this guide to all building elements protecting a fall, although the NZBC does not require a barrier where the fall is less than one metre. Where barriers are installed in instances where the fall is less than one metre, certain NZBC requirements will still apply, e.g. Clause F2 Hazardous Building Materials.

**This guide is not applicable to:**

- barriers intended to stop or divert moving vehicles,
- barriers used in building work and construction,
- swimming pool fences safeguarding against a fall of less than one metre,
- barriers on walking tracks and bridges on walking tracks etc.

While this document is intended primarily for use by designers, sections on maintenance contain information beneficial to owners.

## 1.2 Definitions

For the purposes of this guide the following definitions apply. See also Figure 1.1.

**Baluster** Vertical members at close centres acting as the infill to a barrier.

***Note:*** *Balusters should not be confused with Structural Posts which are used in post and rail barrier systems.*

**Balustrade** A balustrade is a row of balusters or other infill.

***Note:*** *A 'balustrade' is the commonly used term for a barrier.*

**Barrier** Any building element intended to prevent a person from falling and to retain, stop or guide a person.

**Boundary joist or joists** A joist running along the outer ends of the floor joists.

**Decking** The material forming the walking surface of a floor or deck supported by joists.

**Edge joist or joists** A member or members at the perimeter (end) of a floor or deck running parallel to other joists.

**Handrail** A rail to provide support to, or assist with, the movement of a person.

***Note:*** *Where the handrail is used in an accessible route refer to paragraph 6.0 of Acceptable Solution D1/AS1.*

**Infill** The building element (e.g. wires, rail, mesh, safety glass or other solid panel, louvres, balusters) spanning between supporting structure, posts or rails.

**Rail** A member used as a handrail, top rail, bottom rail or top edge capping in a barrier system.

**bottom rail** The lower rail supporting the barrier infill.

**interlinking rail** A rail (normally used with glass barriers) that is connected to each glass pane and/or to a structural post or other building element.

**load-supporting rail** A rail that is mechanically fixed to the structure, structural posts, or infill, that supports the applied design loads.

***Note:*** *Load-supporting rails are normally interlinking.*

**non-load-supporting rail** A rail (normally used with glass barriers on the top edge of the glass) that does not carry the design loads alone, but relies on the glass to support the design loads.

***Note:*** *Non-load-supporting rails may be interlinking.*

**top rail** The upper rail supporting the barrier infill which may also act as a handrail.

**Safety glazing material** Any material complying with Appendix 3A NZS 4223: Part 3:1999 Human Impact Safety Requirements.

**Structural post** A building element providing support for combinations of handrail, top and bottom rails and infill of a barrier.

**Figure 1.1 Barrier elements**

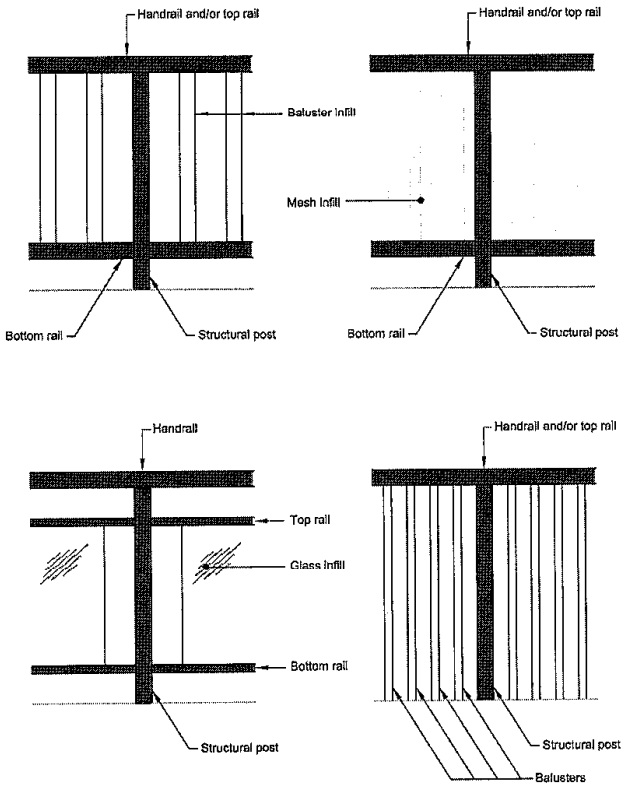



**Figure 1.2 Handrail/top rail for timber barriers**

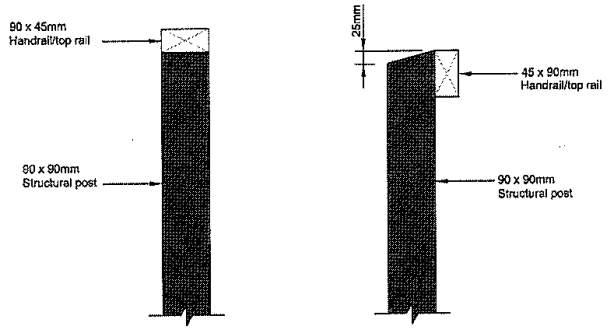
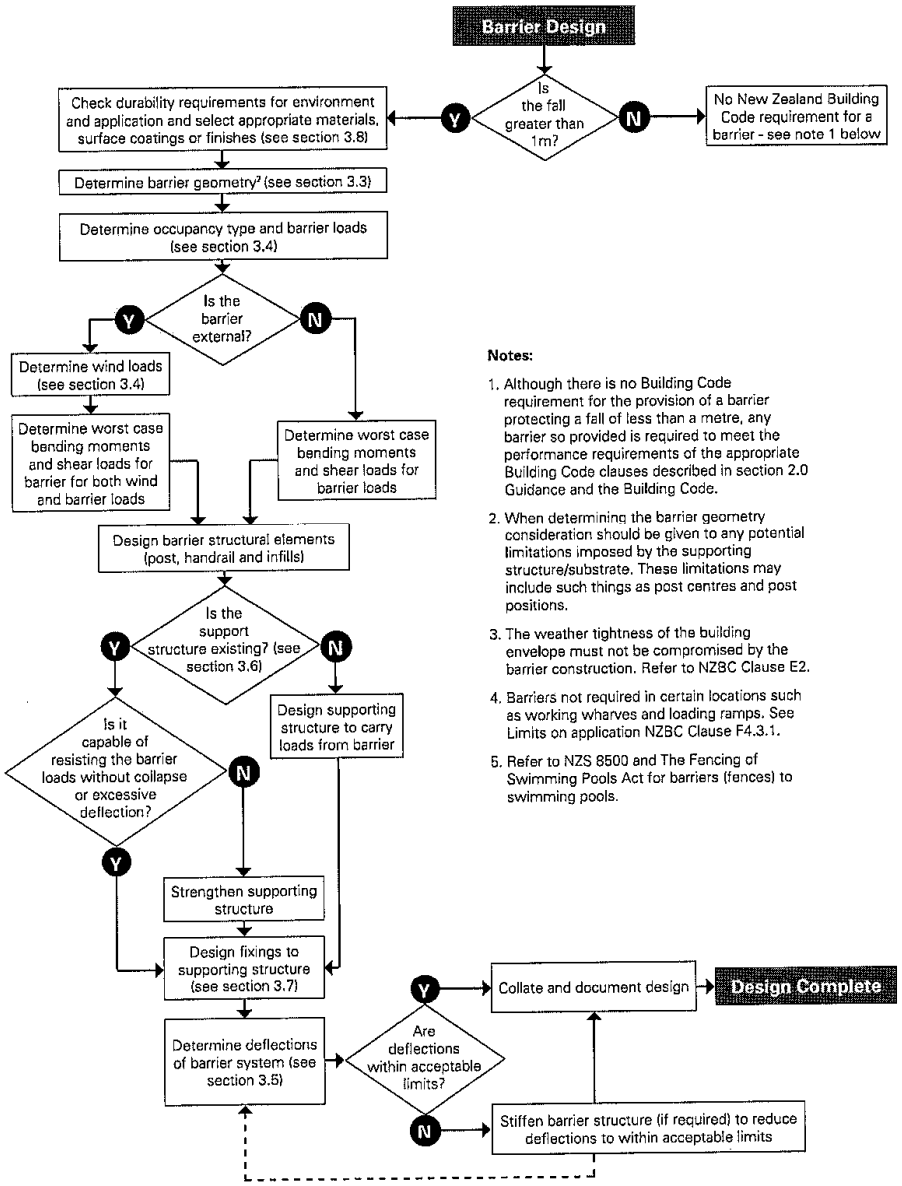


**Figure 3.1 Barrier design procedure**



09/2011

# GABLE END BRACING
## OVER ROOF SECTION OF END WALLS

- ★ Covers bracing of the roof section on gable end construction.
- ★ Includes bracing on extra high gables.
- ★ All timber to be minimum grade SG8 as defined in NZS 3604:2011 apart from gable end webs which are either SG6 or SG8 (see Tables 1A & 1B).
- ★ Tables cover gable end truss installed as single component 45mm thick, double component 90mm thick, 45x70mm or 45x90mm webs on flat.
- ★ Design assumes restraints are provided at the ceiling and roof lines.
- ★ Bracing covers loading conditions as per NZS 3604:2011 up to Extra High wind and includes full height brick veneer gables.

## TABLE 1A - STRONGBACK LOCATION FOR WEBS @ 600MM CRS.

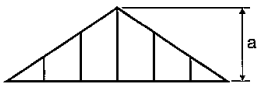
| WIND ZONE | MAXIMUM STRONGBACK HEIGHT (h) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 70x45 Web | | 90x45 Web | | Double Component Gable End Webs 2/ 70x45 | | Double Component Gable End Webs 2/ 90x45 | | 45x70 on flat | | 45x90 on flat | |
| | SG6 | SG8 | SG6 | SG8 | SG6 | SG8 | SG6 | SG8 | SG6 | SG8 | SG6 | SG8 |
| LOW | 1800 | 2000 | 2000 | 2200 | 2300 | 2550 | 2500 | 2750 | 2450 | 2700 | 3150 | 3450 |
| MEDIUM | 1650 | 1800 | 1800 | 2000 | 2100 | 2300 | 2250 | 2500 | 2150 | 2450 | 2800 | 3150 |
| HIGH | 1450 | 1600 | 1600 | 1750 | 1850 | 2050 | 2000 | 2200 | 1800 | 2150 | 2350 | 2800 |
| VERY HIGH | 1300 | 1500 | 1450 | 1600 | 1700 | 1850 | 1850 | 2050 | 1600 | 1900 | 2050 | 2450 |
| EXTRA HIGH | 1150 | 1350 | 1300 | 1500 | 1600* | 1750* | 1750* | 1900* | 1450 | 1700 | 1850* | 2200* |

## TABLE 1B - STRONGBACK LOCATION FOR WEBS @ 400MM CRS.

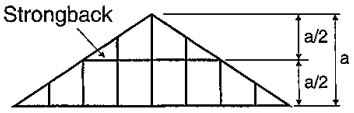
| WIND ZONE | MAXIMUM STRONGBACK HEIGHT (h) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 70x45 Web | | 90x45 Web | | Double Component Gable End Webs 2/ 70x45 | | Double Component Gable End Webs 2/ 90x45 | | 45x70 on flat | | 45x90 on flat | |
| | SG6 | SG8 | SG6 | SG8 | SG6 | SG8 | SG6 | SG8 | SG6 | SG8 | SG6 | SG8 |
| LOW | 2100 | 2300 | 2250 | 2500 | 2650 | 2900 | 2850 | 3150 | 2800 | 3100 | 3600 | 3900 |
| MEDIUM | 1900 | 2100 | 2050 | 2250 | 2400 | 2650 | 2600 | 2850 | 2550 | 2800 | 3300 | 3600 |
| HIGH | 1700 | 1850 | 1850 | 2000 | 2100 | 2350 | 2300 | 2550 | 2250 | 2500 | 2850 | 3200 |
| VERY HIGH | 1550 | 1700 | 1700 | 1850 | 1950 | 2150 | 2100 | 2350 | 1950 | 2300 | 2550 | 2950 |
| EXTRA HIGH | 1400 | 1600 | 1550 | 1750 | 1850* | 2000* | 2000* | 2200* | 1800 | 2100 | 2300* | 2700* |

*Use these values for full height brick veneer attached to gable end.
Please note that the maximum height of brick veneer on a gable end wall is 5.5m.

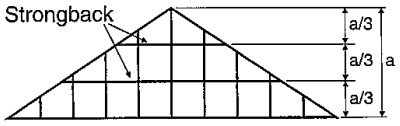
## SELECTION PROCESS




- Where (a) is less than or equal to (h) - no strongback required.

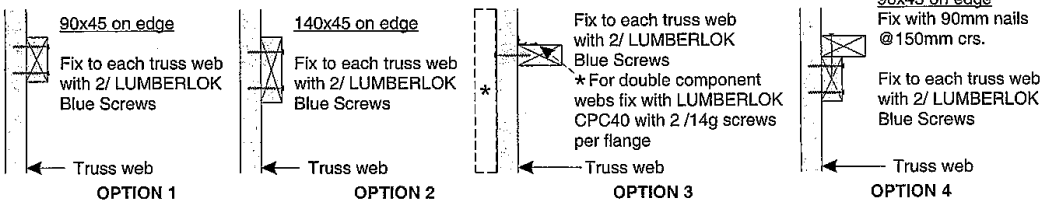



- Where (a) is greater than (h) but less than 2(h) - lower strongback is required.
- Locate the strongback at height of (a/2).



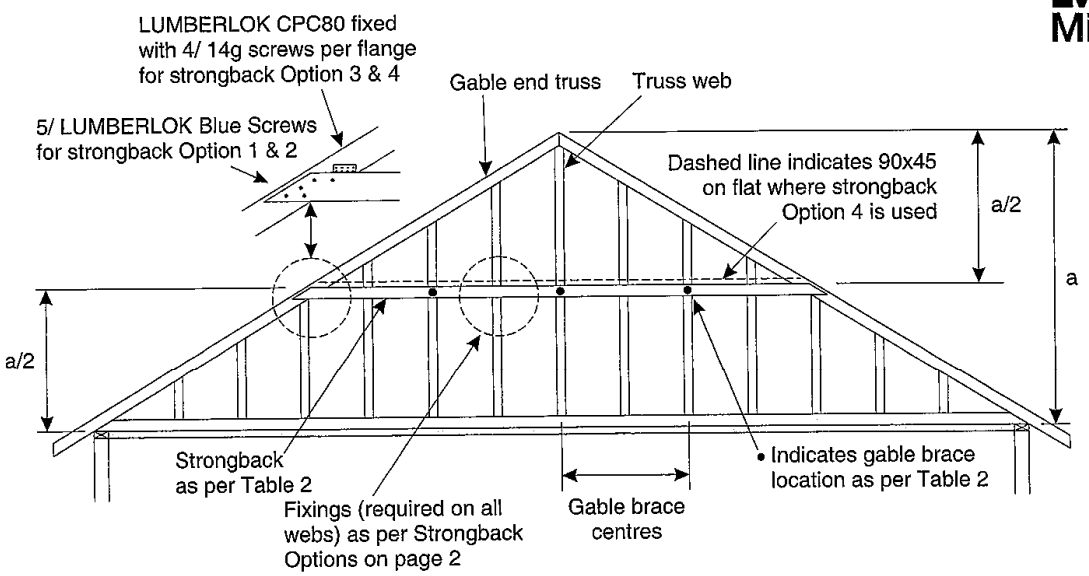

- Where (a) is greater than 2(h) but less than 3(h) - lower and upper strongbacks are required.
- Locate strongbacks at height increments of (a/3).

## STRONGBACK OPTIONS

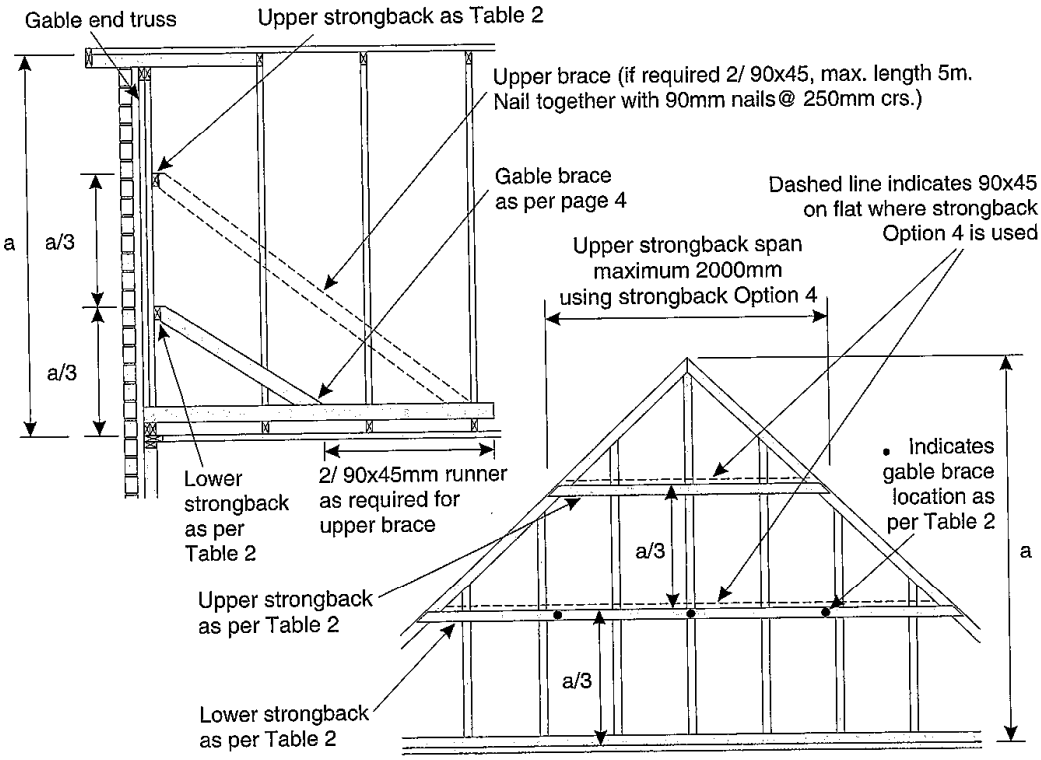



## TABLE 2 - STRONGBACK SPAN AND GABLE BRACE LOCATION

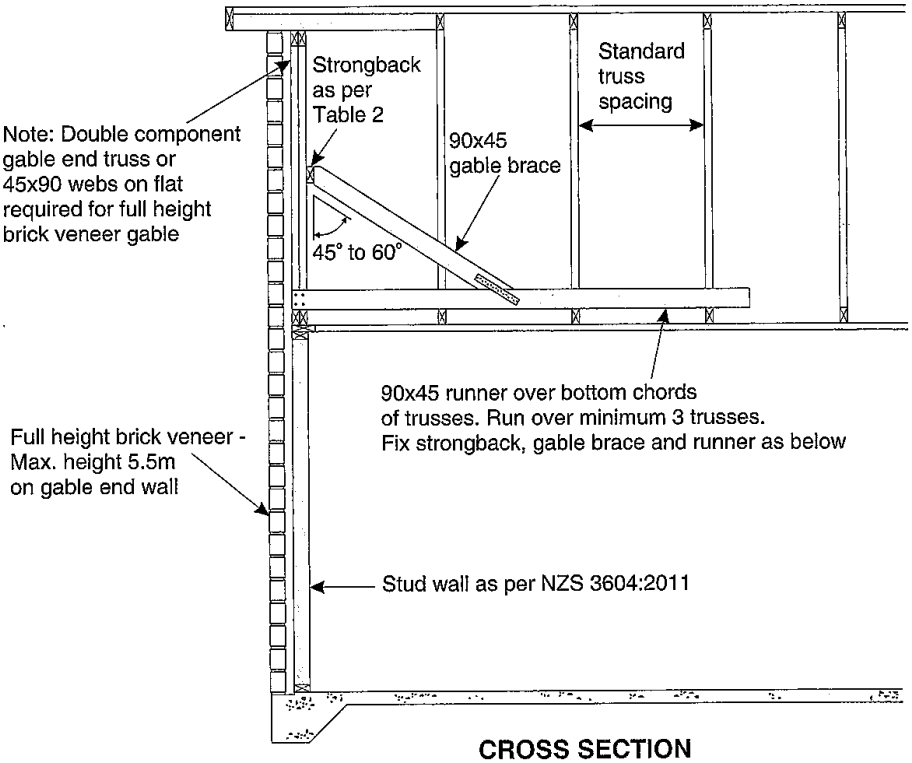
| OPTION 1 | OPTION 2 | OPTION 3 | OPTION 4 |
|---|---|---|---|
| 90x45 on edge | 140x45 on edge | 90x45 on flat | 90x45 on flat plus 90x45 on edge |
| Max. span and/or gable brace location 1200mm | Max. span and/or gable brace location 1400mm | Max. span and/or gable brace location 1600mm | Max. span and/or gable brace location 2000mm |



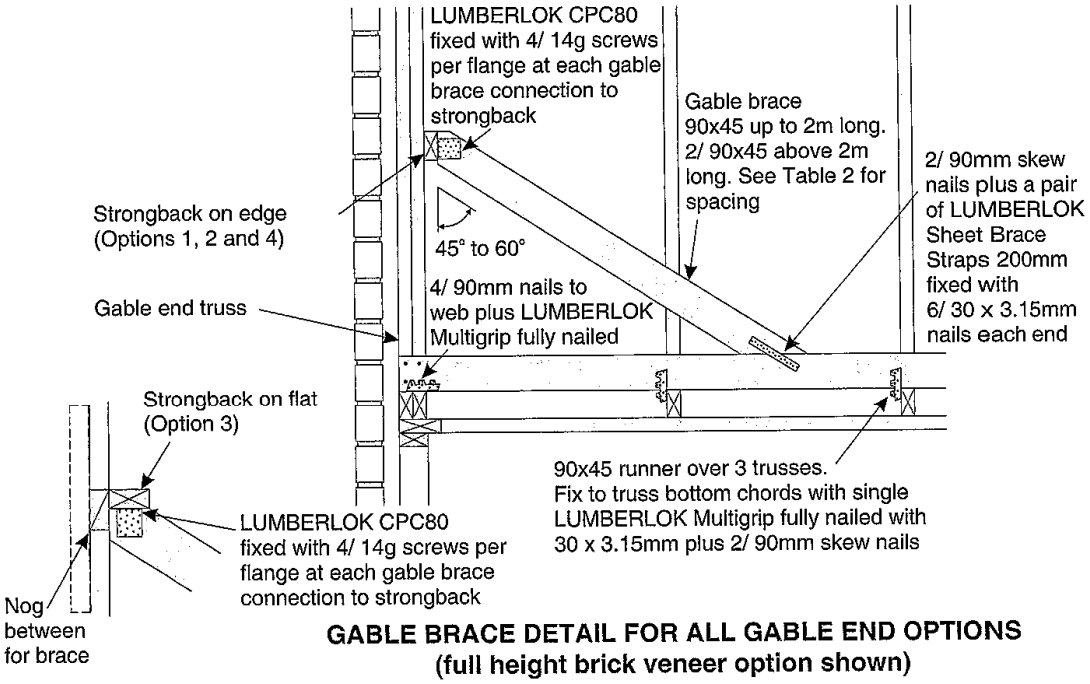

**SINGLE STRONGBACK DETAILS**




**DOUBLE STRONGBACK DETAILS FOR ALL GABLE END OPTIONS**
**(full height brick veneer option shown)**




**CROSS SECTION**
**(full height brick veneer option shown)**




**GABLE BRACE DETAIL FOR ALL GABLE END OPTIONS**
**(full height brick veneer option shown)**

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www.miteknz.co.nz

MiTek™

06/2011

# GABLE END RAKING VERGE
## OVERHANG OPTIONS

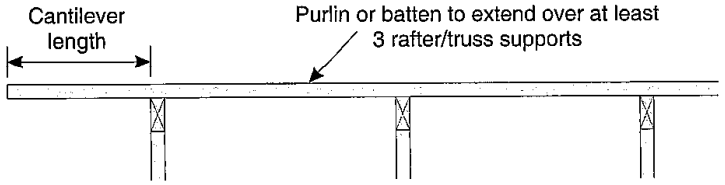
★ Covers raking verge using standard purlin overhang options.
★ Covers up to 750mm overhang using standard verge outriggers.
★ Covers up to 1200mm overhang using verge outrigger/purlin combination.

MiTek New Zealand Limited

# OVERHANG OPTIONS

- **All gable end loading parameters are based on the design considerations used in NZS 3604:2011 and covers heavy roof weight, extra high wind load and snow load Sg of up to 1.0 kPa.**
- **All live load considerations as per AS/NZS 1170.**
- **All timber to be minimum grade SG8 as defined in NZS 3604:2011.**

## CANTILEVER PURLIN OPTION




## TABLE 1

| PURLIN SIZE & ORIENTATION | MAX. CANTILEVER LENGTH (mm) | PURLIN CENTRES (mm) |
|---|---|---|
| 45x45 ⊠ | 200 | 400 |
| 70x45 ⊠ | 300 | 900 |
| 90x45 ⊠ | 450 | 900 |

## CANTILEVER OUTRIGGER OPTION

(Note: Maximum sidewall overhang of 750mm)

(See details on page 3)

## TABLE 2

| MAX. CANTILEVER LENGTH 750mm | OUTRIGGER SIZE & ORIENTATION | MAX. CANTILEVER LENGTH (mm) | OUTRIGGER CENTRES (mm) |
|---|---|---|---|
| | 70x45 ⊠ | 750 | 600 |
| | | 600 | 900 |
| | 90x45 ⊠ | 750 | 900 |
| | | 600 | 1200 |
| | 90x45 ⊠ | 750 | 400 |
| | | 600 | 600 |

## CANTILEVER OUTRIGGER/PURLIN COMBINATION OPTION

(Note: Maximum sidewall overhang of 1200mm)

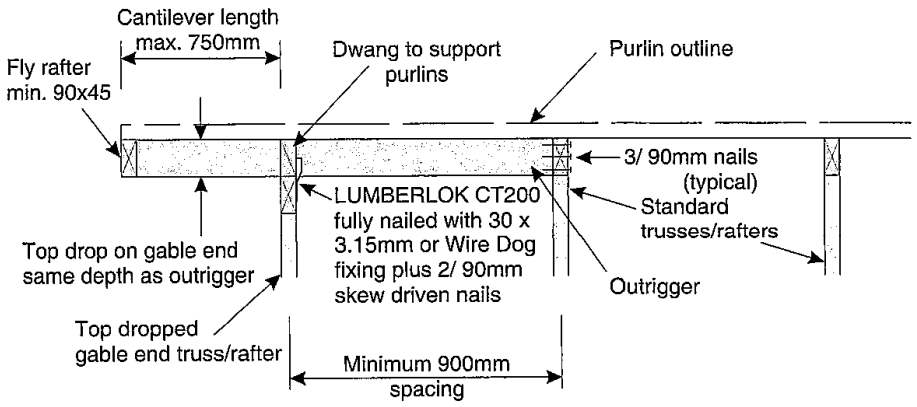
(See details on page 4)

## TABLE 3

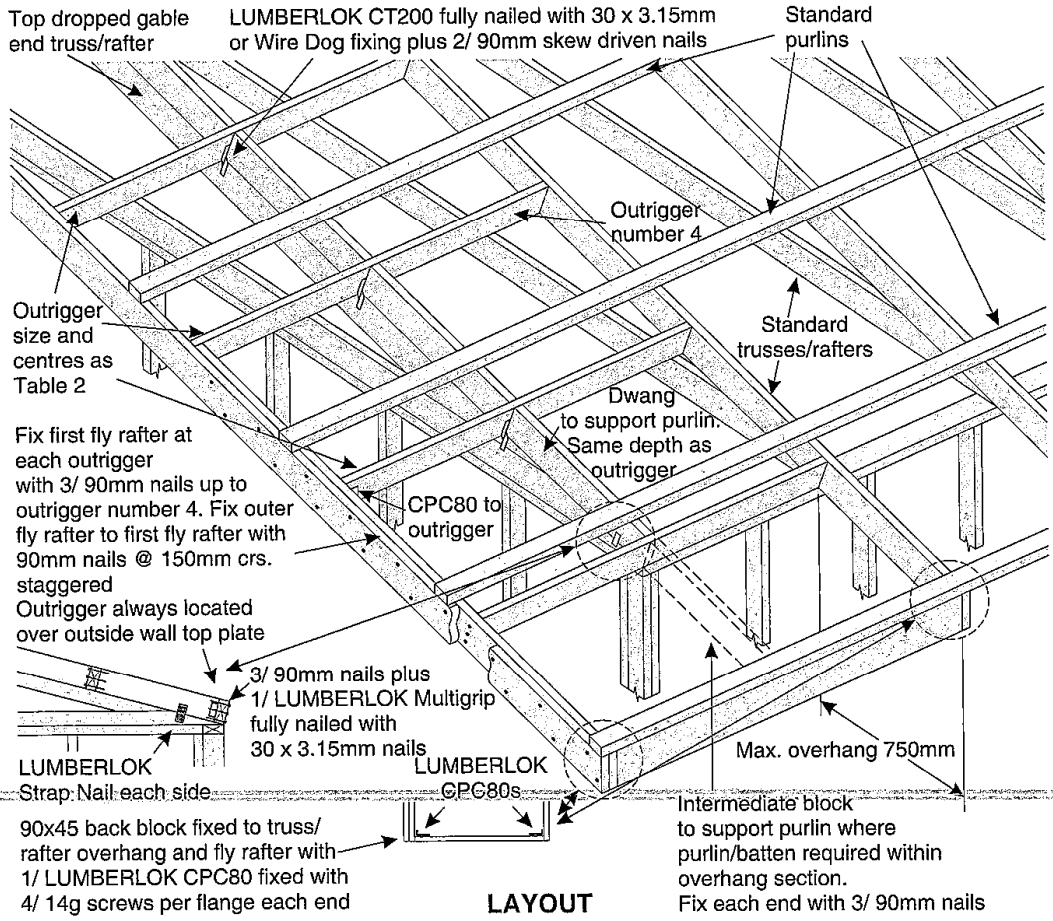
| MAX. CANTILEVER LENGTH 1200mm | OUTRIGGER SIZE & ORIENTATION | MAX. CANTILEVER LENGTH (mm) | OUTRIGGER CENTRES (mm) |
|---|---|---|---|
| | 45x45 Purlin ⊠ 90x45 Outrigger ⊠ | 1200 | 450 |
| | 70x45 Purlin ⊠ 90x45 Outrigger ⊠ | 1200 | 700 |
| | 90x45 Purlin ⊠ 90x45 Outrigger ⊠ | 1200 | 900 |

# CONSTRUCTION DETAILS FOR CANTILEVER OUTRIGGER OPTION

**(SPANS & CENTRES AS TABLE 2 ON PAGE 2)**




**CROSS SECTION**

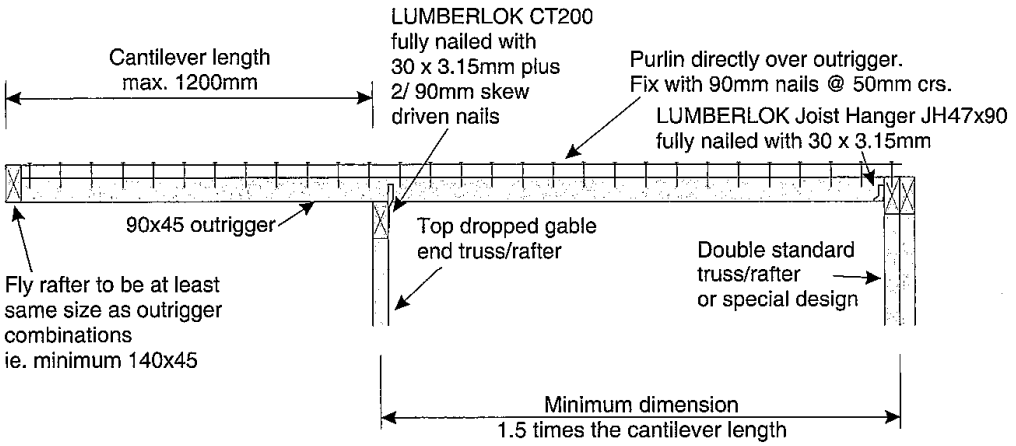



**LAYOUT**

**MiTek New Zealand Limited**

# CONSTRUCTION DETAILS FOR OUTRIGGER/PURLIN COMBINATION

**(SPANS & CENTRES AS TABLE 3 ON PAGE 2)**

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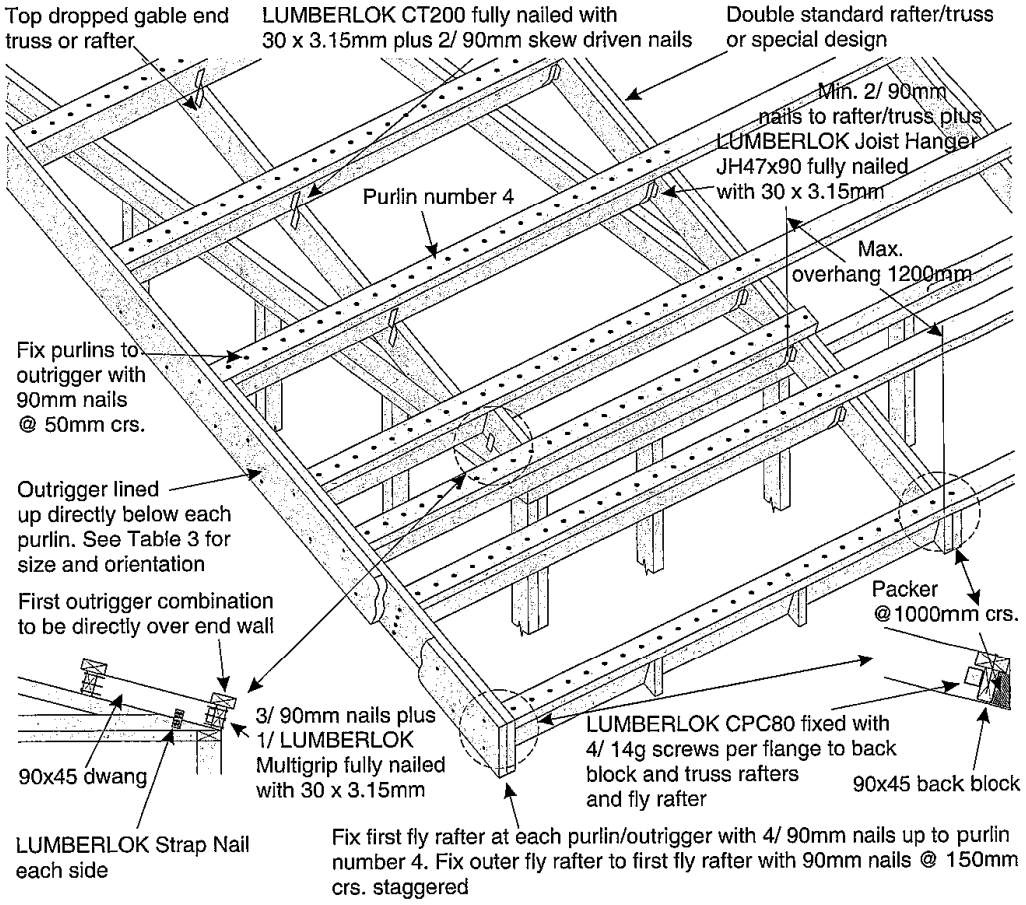


**LAYOUT**


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# *Licensing update*
# Issue 18 - November 2011

Licensed Building Practitioners (LBP) scheme newsletter

In this issue we cover:

- Licensing scheme update
- Restricted Building Work
- Licence Renewal
- Skills maintenance

If you have any questions about the scheme, please email licensing@dbh.govt.nz

## Licensing scheme update

Over 13,000 licenses have now been issued. It is currently taking between 4-6 weeks for a completed application to be processed and assessed – this timeframe may change depending on application volumes.

Building practitioners are being asked to check the licensing status of their specialised subcontractors such as brick and block layers; external plasterers and specialised roofers.

## Restricted Building Work

Restricted Building Work (RBW) is coming, making it even more essential to be a Licensed Building Practitioner and to keep up to date with information relevant to your sector.

From 1 March 2012, any structural and/or weathertight renovations to residential houses or new builds can only be carried out or supervised by a Licensed Building Practitioner.

RBW only relates to residential construction, alterations and design of houses and small-to-medium sized apartment buildings. It doesn't apply to any ancillary buildings such garages or garden sheds or to commercial property.

The type of work which will be restricted includes the design and construction of: Foundation and sub-floor framing, floors, walls, roof, columns and beams, bracing, damp-proofing, roof and wall cladding, water proofing as well as the design of fire safety systems for small to medium apartments.

The Department is currently developing information detailing how RBW will affect each licence class, and we will let you know through further licensing updates when this is available.

RBW is part of a number of changes to the Building Act 2004 following a review of the legislation which governs the building and construction sector in New Zealand.

The changes aimed at lifting productivity, improving quality standards and offering better protection to both consumers and tradespeople.

## Licence Renewal

The Licensed Building Practitioner Registrar is required to contact all Licensed Building Practitioners each year to ensure they wish to remain licensed under the scheme and the information the department has is correct.

It is easy to renew your licence online by going to www.dbh.govt.nz/lbp-login. Just follow the step-by-step process to register your details with us.

Once you have complete online registration, you can renew you licence, update your skills maintenance diary and change in personal details at any time.

If you have any questions or comments about how to use online services, please email licensing@dbh.govt.nz

# Skills maintenance

Whether you have just taken the step of getting your LBP licence or have been licensed for a while, you need to be on the look out for opportunities to improve your skills and knowledge. Your licence brings many business and marketing advantages but it also means staying on top of your game by keeping up-to-date with new and improved ways of working. This is called skills maintenance.

LBPs must earn skills maintenance points and submit a record to the Registrar at least every two years. And if you submit your points yearly, you get a bonus point. You will need between 24 and 36 points over two years, depending on your licence class.

### One hour of skills maintenance equals one point

You can choose the activities that best suit your needs and the requirements of your licence class. Your activities need to inform you about things such as changes to the Building Code, building materials, design technologies and good design and building practices. You will probably find you do many of these activities anyway.

Some examples of this are:

Seminars; workshops; conferences; trade events, reading publications, newsletters, magazines, journals; site training and inductions.

### Activities approved by the Registrar

To help with getting points, some activities, such as some courses and workshops, are pre-approved by the Registrar. Approved activities are not capped - meaning there's no limit to the points you can claim, as long as the activities are relevant to your licence class.

We do recommend attending courses and workshops that have been approved by the Registrar and remind you to ensure that you retain evidence of your attendance.

### Keep a record of your points

You can update your skill maintenance online via www.dbh.govt.nz/lbp-login or you can keep a diary or electronic spreadsheet to record your points. Update it as you accumulate points. We can ask to see evidence of your skills maintenance, so keep your records, diary, receipts and other evidence that shows what you did.
If you use your personal records or diary to record your skill maintenance points you will also need to update your Record of skills maintenance form. It is a good idea to keep this form as up-to-date as possible, as not only do you get an extra point for doing so, it will save you time later on when you Skills Maintenance diary is due.

# More about the LBP scheme

More information about the LBP scheme is available online or contact us on 0800 60 60 50 or info@dbh.govt.nz

# BRANZ Guideline November 2011 – choosing nails and screws for framing and cladding

**Issue 34 – December 2011**

BRANZ has had a few calls about Note 5 in Tables 4.1 and 4.3 of NZS 3604:2011. Note 5 refers you to clause 4.4.4, which states that, for fastenings in contact with timber treated to H3.2 or higher with copper preservatives, use Tables 4.1 and 4.3 for your choice. This is because the clause sets a minimum type of fixing (304 stainless steel) for H3.2 or higher when the timber is treated with copper azole (CuAz) or alkaline copper quaternary (ACQ). So the choice it is directing you to is this:

- if the H3.2 treatment is CCA (copper chrome arsenate – hazard class 01 or 02), go back and make your choice from Table 4.1 or 4.3
- If the H3.2 treatment is CuAz (hazard class 58) or ACQ (hazard class 90), the default for fixings is 304 stainless steel in exposed or sheltered areas and hot-dip galvanised in all other locations.

For more information on cladding fixings, refer to Building Code compliance document E2/AS1 Tables 20 and 24.

*Summarised from BRANZ Guideline November 2011.*

***Related Standard***

- NZS 3604:2011 *Timber-framed buildings*

# BRANZ Guideline November 2011 – H1 calculations and skylights

Issue 34 – December 2011

BRANZ has received a question about using the NZS 4218:2009 calculator (available on the BRANZ website) where skylights are used but the skylight doesn't show up in the summary sheet for the reference building.

The rules in NZS 4218:2009 when using the calculation method require that the reference building roof calculation is roof area plus skylight area. This gives a total roof area, which is divided by the required construction R-value (R2.9 in Zones 1 and 2 and R3.3 in Zone 3) to obtain a reference building heat loss for the total roof area.

Because the reference building calculates the whole roof area (including the skylight area) at the same R-value, the skylight area is not separated out. In the proposed building, the calculations are separated into the roof area divided by the proposed construction R-value of the designer's choice to obtain a heat loss, then the skylight area is divided by the skylight R-value to give the heat loss for the skylight. The combined total of the heat losses of the proposed roof and skylight are added together to give the heat loss of the total roof area in the proposed building. The proposed building must not have a greater heat loss than the reference building.

To compensate for the additional heat loss through the skylight, which will always be lower than the R-value required for the roof, the roof, walls or floor R-value will need to be increased to compensate for the lower R-value of the skylight.

There is no maximum area for skylights in the calculation method. In the schedule method, there is a maximum of 1.5 $m^2$ or 1.5% of the roof area (whichever is the greater) and a minimum R-value set.

*Summarised from BRANZ Guideline November 2011.*

***Related Standard***

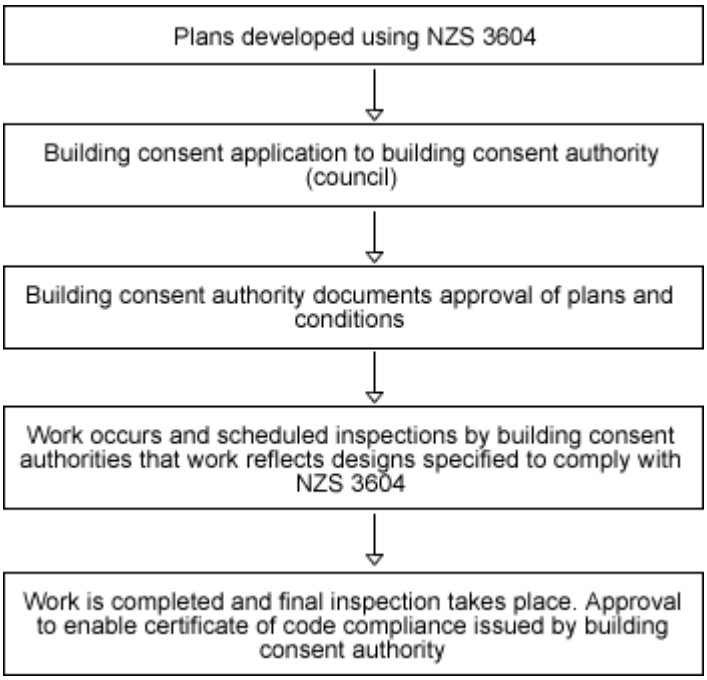
- NZS 4218:2009 *Thermal insulation – Housing and small buildings*

# Compliance Q's and A's – New Zealand

## NZS 3604:2011 *Timber-framed buildings* Standard

### How does NZS 3604 relate to the Building Act 2004 and the New Zealand Building Code?

NZS 3604 is incorporated by reference as an Acceptable Solution under the New Zealand Building Code (NZBC). By meeting the requirements of the NZBC, this supports the objectives set out by the Building Act 2004.




### Has NZS 3604:2011 been referenced as an Acceptable Solution by DBH? (Updated)

Yes. On 1 August 2011, the Department of Building and Housing announced changes to Structure and External Moisture Building Code documents in Building Controls Update No. 116.

The Building Controls announcement includes information regarding the referencing of NZS 3604:2011 as an acceptable solution under B1/AS1.

This and other changes announced by the Department take effect from 1 August 2011 with a transition period through to 31 January 2012.

During the transition period, there will be two Acceptable Solutions or Verification Methods – the old document (NZS 3604:1999) and the revised document (NZS 3604:2011).

You can read Building Controls Update Bulletin 116 and the department's questions and answers on these changes here http://www.dbh.govt.nz/bc-update-116

*(Updated 3 August 2011)*

### Why is there an Advisory Note for NZS 3604:2011? (New)

Standards New Zealand has issued an Advisory Note to help ensure users of NZS 3604:2011 *Timber-framed buildings* and SNZ HB 3604:2011 *Timber-framed building: Selected extracts from NZS 3604:2011* are aware of recent information issued by the Department of Building and Housing

**I am not clear how to apply Table 7.1 in Section 7 (Updated)** The 1.5kPa floors are based on dry timber properties for internal use and include vibration as a criterion. The 2kPa floors are based on green properties or wet timber for external use such as decks, and do not allow for vibration. For some sizes of timber this can result in an apparent anomaly as is the case with 90 x 45 and 140 x 35 SG 8 timber. *(Updated 7 December 2011)*

**Is interpolation allowable in NZS 3604? for example, footing sizes from table 6.1**

'Extrapolation' is defined as extending (a graph) by inferring unknown values in trends in the known data. 'Interpolation' is defined as inserting mathematically (an intermediate term) into a series by estimating or calculating it from known data. Extrapolation is not allowable under NZS 3604. See 1.2.2. '*Use only the values set out in NZS 3604 clauses, figures and tables; do not extrapolate the values*'. Interpolation has not been explicitly considered by the committee, so it is not identified as being specifically within the scope of NZS 3604:2011. It would be advisable to discuss the use of interpolation with the local territorial/building consent authority at the design planning stage and it may need to be considered as an alternative solution.
*(25 March 2011)*

**Why do the exposure zone maps in section 4 refer to some towns rather than nearby major cities such as Taradale and not 'NAPIER'**

The locations listed on the maps are selected to show places close to the border of zones. As such, on occasion towns have been listed as opposed to nearby cities. For example, Napier is in Zone D (within 500 m of the coastline) whereas Taradale is in Zone C.
*(25 March 2011)*

**Are elements of standards such as NZS 3604:2011 able to be retrofitted to existing buildings built to a previous version of the Standard, particularly bracing and strengthening specifications?**

Houses that are designed and built to a previous version of NZS 3604 can be retrofitted to the current version. This is often done during renovations and can often be a requirement for building consents. For example, a house that was built to NZS 3604:1999 that is undergoing renovation may be required to have the bracing requirements brought up to the standard aligning with NZS 3604:2011.
*(25 March 2011)*

**Have overhangs been considered in the loaded dimension calculations in figure 1.3.**

The overhangs have been allowed for in all the selection tables. For example, the verandah beam tables 10.8, and A10.8 all allow for overhangs in their calculations.

## QUIZ ON ARTICLES IN THIS NEWS SHEET

1. The design review unit is part of which organisation?
   (a) Department of Building and Housing
   (b) Local Council
   (c) New Zealand Fire Service

2. Section 175 of the Building Act 2004 deals with _____.
   (a) Only fire design information
   (b) Only accessible design information
   (c) Guidance information from the DBH Chief Executive

3. The NZFS post fire investigations on their website.
   (a) True
   (b) False

4. Plastic roofing materials appears to be _____ in a fire situation.
   (a) Predictable
   (b) Unpredictable

5. Who has produced the document entitled, “Guidance for documentations fire safety designs”?
   (a) DBH and IPENZ
   (b) IPENZ
   (c) NZFS

6. If specified systems are involved in a fire design the documentation must also provide the necessary ongoing maintenance and inspection requirements to keep their systems functional during their life.
   (a) True
   (b) False

7. The acceptable solution B1/AS2 is being withdrawn from _____.
   (a) 1 January 2012
   (b) 1 February 2012
   (c) 1 April 2012

8. The new guidance on barrier design incorporates loadings from which standard?
   (a) NZS 4121
   (b) NZS 3604
   (c) AS/NZS 1170

9. A baluster is a _____.
   (a) Vertical member at close centres meeting on the infill to a barrier.
   (b) Structural port
   (c) Horizontal member

10. A balustrade is:
   (a) A single baluster
   (b) A row of balusters or other infill

11. A barrier is required where the fall from part of a building is greater than:
   (a) 0.9m
   (b) 1.0 m
   (c) 1.1 m

The following questions are based on Mitek’s gable end bracing brochure.

12. All timber is to be a minimum grade SG8 apart from gable end webs which can be either SG6 or SG8.
   (a) True
   (b) False

13. A 90x45 strongback on edge has a maximum span and/or gable brace location of _____.
   (a) 1000mm
   (b) 1200mm
   (c) 2000mm

14. A 90x45 strongback on flat has a maximum span and/or gable brace location of _____.
   (a) 1000mm
   (b) 1600mm
   (c) 2000mm

15. The maximum height of brickwork on a gable end is _____.
   (a) 3.5m
   (b) 5.5m
   (c) 7.5m

16. A gable brace 90x45mm can span up to _____m?
    (a) 1.0m
    (b) 1.5m
    (c) 2.0m

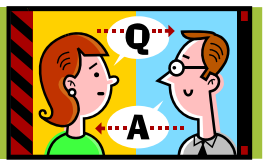
17. A gable brace 2/ 90x45 can span up to ____m?
    (a) 2.0m
    (b) 4.0m
    (c) 5.0m

18. A gable brace 2/ 90x45 is required to be nailed together with 90mm nails @ ____ mm centres?
    (a) 100
    (b) 250
    (c) 400

19. A 90x45 runner over bottom chords of trusses has to run over how many trusses minimum?
    (a) One
    (b) Two
    (c) Three

20. A 90x45 runner is required to be fixed to the bottom chords of the trusses with _____?
    (a) Lumberlock multi-grip fully nailed with 30 x 3.15mm plus 2/ 90mm skew nails
    (b) 2/ 90 mm skew nails to each chord
    (c) 4/90 mm skew nails to each chord

## ANSWERS TO QUIZ




| | | | |
|---|---|---|---|
| 1. | c | 11. | b |
| 2. | c | 12. | a |
| 3. | a | 13. | b |
| 4. | b | 14. | b |
| 5. | a | 15. | b |
| 6. | a | 16. | c |
| 7. | b | 17. | c |
| 8. | c | 18. | b |
| 9. | a | 19. | c |
| 10. | b | 20. | a |