



codewords

First licensed building practitioners ready to go

A major milestone in the introduction of the Licensed Building Practitioners Scheme is set to be reached in early March.

The first builders and designers to be officially registered as licensed building practitioners will be awarded their identification cards.

The Licensed Building Practitioners Scheme aims to raise building standards, boost consumer confidence in the industry and introduce accountability.

Their welcome pack will also include information on keeping their skills up to date and what their responsibilities are now they are licensed.

The first people being licensed is a giant step for the scheme, which was officially launched on 1 November last year, and comes on the back of a huge demand for application packs from throughout the industry.

This is the first time that New Zealand has had a licensing and registration scheme for builders and designers. The scheme aims to ensure that the people in the building industry who are responsible for the work done are competent and accountable, so that homes and buildings are designed and built right the first time.

Once people are licensed, the Department will start to promote the scheme among industry, and to the general public, using the Register of Licensed Practitioners. This register will be available from early March.

Nigel Bickle, the Departmental Deputy Chief Executive, Sector Capability, who has been overseeing the scheme, has encouraged members of the public to seek out licensed practitioners when thinking about getting work done.

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First licensed building practitioners ready to go continued

'Hiring a licensed practitioner will give consumers the assurance that they are hiring someone who has shown they have the skills, knowledge and experience to do the job right. I would encourage everyone to start asking for licensed building practitioners to undertake any work they want done.'

Earlier this year, the Minister for Building and Construction, Shane Jones, said he was impressed by the level of interest in the scheme. He said, 'Such high interest in the Licensed Building Practitioners Scheme is very encouraging. It clearly shows that a real demand exists for an industry-recognised government-backed quality mark. The licensing scheme requires practitioners to show they have the skills and experience to do the job properly. It also gives good builders, who are not paper-qualified, a real opportunity to be recognised for the great work they do.'

Over the next few months the Department will also continue to promote and explain the scheme through a series of workshops around the country.



100% response to request for building consent figures

All 73 territorial authorities responded to a request by the Department of Building and Housing to tell us the number and value of building consents issued in 2006/07.

We're grateful for this excellent response rate and pleased to share the figures we received. The information has already proved valuable for our policy work and has also helped in operational planning –

for example, in implementing the Building Consent Authority Accreditation and Registration Scheme.

The figures show the scale and value of building activity nationwide. As set out below, territorial authorities reported that during 2006/07 they granted more than 113,000 consents for building work with a value of almost \$13 billion.

NUMBER AND VALUE OF BUILDING CONSENTS ISSUED IN 2006/07

TERRITORIAL AUTHORITY	NUMBER OF BUILDING CONSENTS GRANTED IN 2006/07 FINANCIAL YEAR	TOTAL VALUE OF BUILDING WORK (\$)
Ashburton District	1340	115,076,477
Auckland City	7541	1,742,860,000
Buller District	536	48,361,647
Carterton District	485	32,762,749
Central Hawke's Bay District	601	34,713,267
Central Otago District	904	91,069,673
Chatham Islands District	15	665,339
Christchurch City	8907	1,006,480,000
Clutha District	743	32,434,008
Dunedin City	2806	213,980,000
Far North District	1895	248,864,702
Franklin District	2147	256,200,000
Gisborne District	1366	84,609,337
Gore District	632	19,362,211
Grey District	672	51,738,000
Hamilton City	2766	460,842,087
Hastings District	1903	198,470,000
Hauraki District	662	48,892,384
Horowhenua District	1040	68,206,812
Hurunui District	534	47,219,144
Invercargill City	2341	96,795,153
Kaikoura District	240	23,942,103
Kaipara District	906	64,294,628
Kapiti Coast District	1502	132,919,088
Kawerau District	165	14,858,327
Lower Hutt City	1700	139,737,927
Mackenzie District	288	30,585,990

NUMBER AND VALUE OF BUILDING CONSENTS ISSUED IN 2006/07 CONTINUED

TERRITORIAL AUTHORITY	NUMBER OF BUILDING CONSENTS GRANTED IN 2006/07 FINANCIAL YEAR	TOTAL VALUE OF BUILDING WORK (\$)
Manawatu District	1243	82,414,806
Manukau City	4344	920,079,667
Marlborough District	2668	206,040,000
Masterton District	931	50,228,860
Matamata-Piako District	1083	104,020,709
Napier City	1493	149,330,502
Nelson City	1499	147,518,558
New Plymouth District	2257	195,000,000
North Shore City	3114	667,680,000
Opotiki District	286	24,683,753
Otorohanga District	447	28,770,029
Palmerston North City	1853	215,643,208
Papakura District	708	79,200,000
Porirua City	1012	121,426,747
Queenstown-Lakes District	1455	361,195,125
Rangitikei District	521	29,459,449
Rodney District	2498	462,420,000
Rotorua District	1994	134,006,647
Ruapehu District	1034	75,672,774
Selwyn District	1974	263,215,142
South Taranaki District	989	56,075,968
South Waikato District	726	39,082,660
South Wairarapa District	646	34,605,215
Southland District	1578	89,543,499
Stratford District	469	24,326,730
Tararua District	718	28,001,447
Tasman District	1747	128,044,224
Taupo District	1333	157,566,240
Tauranga City	3102	472,890,000
Thames-Coromandel District	1597	180,295,510
Timaru District	1722	93,703,947
Upper Hutt City	1251	97,908,000
Waikato District	1694	180,690,433
Waimakariri District	1548	187,360,701
Waimate District	322	24,943,947
Waipa District	1632	162,878,811
Wairoa District	279	11,683,164
Waitakere City	2600	269,530,000
Waitaki District	875	53,600,000
Waitomo District	282	14,072,547
Wanganui District	1840	110,591,434
Wellington City	3557	437,160,000
Western Bay of Plenty District	2073	162,180,125
Westland District	394	32,384,009
Whakatane District	937	55,410,219
Whangarei District	2286	255,837,685
Total	113,248	12,984,313,544

Upcoming amendments and revisions of existing Standards

Standards New Zealand plan to release the following in the next month or two.

AS/NZS 2041.2: 200X
Buried corrugated metal structures
Part 2: Installation

AS/NZS 2041.6: 200X
Buried corrugated metal structures
Part 6: Bolted plate structures

AS/NZS 2845.1: 1998
Backflow prevention devices –
Dual check valves with atmospheric
port (DCAP)

AS/NZS 2845.1: 1998
Backflow prevention devices –
Single check (SCVT)

AS/NZS 2845.1: 1998
Back flow prevention devices –
Pipe interrupter valve (PIV)

NZS 3404.1 and 2
Steel Structures Standard
Amendment 2

AS/NZS 4455.2
Masonry Units, Pavers, Flags
and Segmental Retaining Wall
Units. Part 2: Segmental pavers
and flags

NZS 4541: 2003
Automatic fire sprinkler systems

Building – including plumbing, gas and building services New publication

AS/NZS 4765: 2007
Modified PVC (PVC-M) pipes
for pressure applications

Hardcopy
\$79.95+GST (Members)
\$99.94+GST (Retail)

PDF
\$71.96+GST (Members)
\$89.95+GST (Retail)

Specifies requirements for pipes,
integral joints and post-formed
bends of PVC-M for the
conveyance of water and
wastewater under pressure.
Supersedes AS/NZS 4765(Int): 2000

Standard withdrawn
AS/NZS 4765(Int): 2000 Modified
PVC (PVC-M) pipes for pressure
applications
Superseded by AS/NZS 4765: 2007

Fire protection

New Zealand draft for comment

Free to download from our website:
www.standards.co.nz

DZ 4510
Fire hydrant systems for buildings
Sets out minimum technical and
performance requirements for
fire hydrant systems installed
in buildings. Hydrant systems
are primarily for Fire Service use
when attending and dealing with
fire emergencies in buildings.

This revision of the 1998 edition
of the Standard proposes the
following changes.

- Aligning the demands for internal hydrant systems for buildings with approved sprinkler systems.
- Aligning the flow rates for sprinklered buildings.
- A new informative appendix providing guidance for the installation of hydrants in low-rise buildings.
- Reducing the arc used to space hydrants from 50 m to 40 m.
- Comment on this draft closed on 26 November 2007.

Building – including plumbing, gas and building services New publications

AS/NZS 2589: 2007 Gypsum linings
– Application and finishing

Hardcopy
\$109.95+GST (Members)
\$137.44+GST (Retail)

PDF
\$98.96+GST (Members)
\$123.70+GST (Retail)

Provides manufacturers and users of gypsum linings with specifications covering the application and finishing of such linings in residential and commercial construction applications. This Standard provides a reference for the building industry and specifiers, and a basic standard for adoption in contracts.

Accreditation numbers set to increase

Supersedes AS/NZS 2589.1: 1997
and AS/NZS 2589.2: 1997

Standards withdrawn
AS/NZS 2589.1: 1997

Gypsum linings in residential and
light commercial construction –
Application and finishing –
Gypsum plasterboard
Superseded by AS/NZS 2589: 2007

AS/NZS 2589.2: 1997

Gypsum linings in residential
and light commercial construction –
Application and finishing –
Fibre reinforced gypsum plaster
Superseded by AS/NZS 2589: 2007

Joint New Zealand/Australian draft
for comment
Free to download from our website:
www.standards.co.nz

DR 07443

Installation of ABS pipe systems
(Revision of AS 3690–1989)

To provide uniform procedures for
the installation of ABS pipe systems
for both above, and below, ground
applications.

Comment on this draft closes
on 28 February 2008.

Representatives from a further
six territorial authorities accredited
as building consent authorities
(BCAs) were presented with
their BCA registration certificates
by the Department of Building
and Housing's Chief Executive,
Katrina Bach, in December.
A total of 17 territorial authorities
and two private organisations
contracting to territorial
authorities are now registered.

The photo shows, from left,
Alison Geddes (North Shore
City Council), Jamie Dale
(Taupo District Council),
Mike Avery (Stratford District
Council), Merv Balloch
(Waikato District Council),
Ms Bach, Bob de Leur
(Auckland City Council)
and Ray Applegarth (Clutha
District Council).

The number of territorial
authorities accredited and
registered as BCAs will increase

quickly over the next few
months as the accreditation
process picks up after the
holiday season.

More than 30 territorial
authorities have completed
their full on-site assessment
by International Accreditation
New Zealand (IANZ) and are
either addressing corrective
actions or going through IANZ's
final accreditation approval
processes.

All local authorities must
be accredited and registered
as BCAs by 30 June 2008,
or have transferred their
statutory building control
functions to an accredited
and registered BCA.
Eight regional authorities
and one territorial authority
currently intend transferring
those functions. Others are
expected to consider this option.



Register available to help assess engi

The Chartered Professional Engineers register is a useful way for building consent authorities to help determine the competence of professional engineers who have signed producer statements or are reviewing engineering work for them.

Using the register can help building consent authorities (BCAs) manage producer statement acceptance processes and decisions. This is particularly useful, given that most BCAs do not have the in-house capability to make their own assessments of professional engineering competence. BCAs are also reminded that acceptance of producer statements is discretionary. Each BCA must decide whether to accept them and decide how much weight, if any, a producer statement will be given in their certification process.

The title Chartered Professional Engineer (CPEng) is the only statutory-backed quality mark of current competence for professional engineers in New Zealand, and only engineers on the CPEng register can use the title 'CPEng'.

The Chartered Professional Engineers of New Zealand Act 2002 (CPEng Act) appointed the Institution of Professional Engineers (IPENZ) as the registration authority with exclusive responsibilities for administering the register.

IPENZ is legally required to assess competence across all fields of professional engineering and to operate a complaints and disciplinary system. The way the registration authority carries out these functions is governed by regulations (referred to as the CPEng Rules). The Act also created the Chartered Professional Engineers Council to monitor the performance of the functions of the registration authority, thereby providing independent confirmation that the Act is being properly administered.

IPENZ is also the professional body representing engineers in New Zealand. The functions of IPENZ as a membership body are distinct from those it undertakes as the registration authority.

CPEng REGISTER ASSESSMENT PROCESS

CPEng registration is based on 'current competence'. Thus, professional engineers are required to be assessed at least every five years to maintain their registration.

The CPEng Rules prescribe the assessment process. Applicants must provide evidence that they are able to undertake each of 12 elements of engineering performance. Evidence is normally taken from recent work samples and from qualifications or other formal learning. A trained panel of professional engineers assesses this evidence. They can interview

the candidate, set written assignments, and request more work samples and referees as they consider necessary. The panel's recommendations are moderated to ensure consistency before a final decision is made. Re-assessment for continued registration follows a similar process.

Engineering bodies from three other countries reviewed New Zealand's competence assessment process in 2006 and confirmed it meets international best practice.

USING THE CPEng REGISTER

BCAs could use the CPEng register to:

- help confirm a professional engineer's current competence and good ethical standing, as determined by the registration authority
- identify an engineer whose registration has been suspended or placed in abeyance
- identify any disciplinary actions taken against an engineer in the last three years
- provide a mechanism to address instances of poor quality work
- access the procedure for handling complaints about a CPEng.

As part of the requirements for accreditation, BCAs must document the processes and procedures they use in performing their building control functions. They could use the following steps as part of the basis for accepting producer statements.

neers' competence

1. Accept producer statements as per the form developed by IPENZ, the Association of Consulting Engineers (ACENZ) and New Zealand Institute of Architects (NZIA). This form requires the submitter to have a sufficient level of professional indemnity cover in support of his/her professional opinion.
2. Note that under the CPEng Rules, CPEng registrants are required to work only within their competence. This means a CPEng's signature on a producer statement is tacit affirmation by that person that they consider themselves competent to make the declaration in the statement (otherwise they would be breaching the code of ethics). To avoid doubt about this, a BCA could request that a producer statement be accompanied by a written declaration that the engineer has the necessary competence
3. Check the CPEng register on the IPENZ website – <http://www.ipenz.co.nz/ipenz/finding/cpeng/> – to confirm the engineer is currently a CPEng. The register has contact details for each CPEng who has agreed to their details being listed, and the year their next competence re-assessment is due.
4. If the work the producer statement relates to is sufficiently complex, request a review by another professional engineer on the CPEng register, noting that the reviewer has the same obligation as the submitter to work within his or her competence.

5. If a professional engineer submitting a producer statement is not a CPEng, the BCA might consider requiring a peer review of the statement by a CPEng.

It is up to individual BCAs to decide how they will use information on the CPEng register and what other supporting information they may also require. Their approach needs to be documented in their processes and procedures for accreditation.

CPEng COMPLAINTS PROCEDURE

If a BCA believes a CPEng registrant has submitted poor quality work (eg, through lack of care or insufficient detail) or has worked outside their technical competence (ie, lacks the necessary knowledge and skills to perform the work) the BCA has two options for ensuring that it has properly performed its functions.

1. For serious matters, use the complaints process (as prescribed in the CPEng Rules).
2. For less serious matters, provide written notice to the CPEng concerned, with a copy to the registration authority, that the BCA considered that the work submitted was not to the quality it might reasonably expect of a competent professional engineer.

IPENZ, as the registration authority, can act in either case. It has powers to suspend or remove registration or, for less serious matters, to order an immediate re-assessment of the registrant. By reporting the matter

to the registration authority the BCA is supporting all other BCAs as well as the national occupational regulatory system as a whole.

When it receives a notice from a BCA, IPENZ will consider whether the matter is an isolated incident, or whether notices have been issued by other BCAs about the same engineer. If the notice suggests a lack of competence, IPENZ will require the engineer to undertake an immediate re-assessment of competence for continued registration. If two notices are received about the same engineer in any 12 months, IPENZ will automatically require them to undertake an early assessment for continued registration.

If there is evidence of a breach of ethical conduct or of negligence or incompetent practice of a serious nature, IPENZ can initiate a complaint of its own and begin disciplinary proceedings against the engineer. This is done in accordance with its complaints procedure, set out in the CPEng Rules. This involves:

- an officer confirming whether the registration authority has jurisdiction over the complaint in accordance with the grounds as prescribed in the CPEng Act. The complaint either proceeds to the next step or is dismissed because it does not meet the grounds for a complaint.

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- an investigating committee being appointed to investigate the complaint under CPEng Rules. The committee decides if there is a prima facie case that should be referred to a disciplinary committee, otherwise it must dismiss the complaint.
- a disciplinary committee being appointed to hear the complaint and to decide whether the matter meets the grounds for discipline (as prescribed in the CPEng Act) and, if so, the appropriate disciplinary penalties (removal, suspension, censure, fine). All disciplinary actions are publicly notified and recorded on the register.

FURTHER INFORMATION

For further information about the CPEng register, contact:

Jeff Wastney, Registrar
Institution of Professional
Engineers New Zealand (IPENZ).

@ jwastney@ipenz.org.nz

📞 (04) 474 8983

Fax: (04) 474 8933

Mobile: (021) 479 858

Effective venting of sing

There has been some discussion recently about firecell floor area limits.

The Compliance Document for Fire Safety limits the floor area of a firecell to restrict the spread of fire and to ensure that the Fire Service is able to fight it.

A firecell is any space, including a group of adjacent spaces, on the same or different levels within a building, which is enclosed by a combination of fire separations, external walls, roofs and floors.

The floor area of a firecell may be unrestricted if it is protected by an automatic fire sprinkler system (designed and installed to the appropriate New Zealand Standard).

A building with only one floor may also be unrestricted in floor area (it may be one firecell) if 15% of the roof area is designed to provide effective fire venting. Therefore, designers who intend to comply with the Building Code by following the Compliance Document have three options for single storey buildings. They may:

- compartment the building into firecells to the maximum allowable area, or
- provide automatic fire sprinklers, or
- provide roof vents.

It is common practice in single storey commercial buildings, like warehouses and large retail stores, to specify glass reinforced plastic (GRP) sheet product. This offers both natural light and the 15% requirement for 'effective roof venting'.

le storey buildings

The Department has been advised that in many cases venting does not, or is not likely to, occur with GRP roofing sheets. Also, the rooflight manufacturers do not guarantee that their product will act as an effective roof vent. People have contacted us with the following questions.

- What is effective fire venting?
- Is 15% the correct proportion of total roof area for effective venting?
- If GRP cannot be used, what is the alternative?

EFFECTIVE FIRE VENTING

In the context of paragraph 4.2.4 of C/AS1 and this explanation, effective venting is via the roof of the building.

The main reasons for providing the roof venting instead of restricting the floor area of the firecell is to restrict the spread of fire and to allow the Fire Service to fight the fire. Effective venting must therefore achieve two things.

1. It allows heated gases and products of combustion, as well as any other fire debris, caught in the rising plume to be vented out of the compartment. This mitigates the spread beneath the roof lining, which, in turn, reduces the mechanisms for spread of fire, as well as generally decreasing the rate of rise of temperature in the compartment.

2. It helps in removing smoke and the products of combustion from the compartment, which increase the time for the compartment to become smoke-logged. This allows people more time to escape from the building, as well as allowing fire fighters greater opportunity to deal with the fire.

WHAT IS THE CORRECT ROOF AREA?

The Compliance Document specifies 15% as an appropriate proportion. BRANZ Ltd is investigating whether this should be amended. When they have completed this research the Department may need to amend the Compliance Document. Designers can opt to provide an alternative based on recognised methodologies or models that are appropriate for large volume spaces. They must show that the proposed area of venting will provide time for escape, restrict spread of fire and allow the Fire Service time to fight the fire.

WHAT IS THE ALTERNATIVE TO USING GRP ROOFLIGHT?

The Compliance Document specifies that 15% of the roof area be designed for effective venting. The Department understands that little or no design activity has occurred and little evidence has been provided that the products/systems proposed will actually provide effective venting.

Applications for consent should therefore be based on well-justified proposals that include sufficient information for the building consent authority to be satisfied on reasonable grounds that the design will provide the required area of effective venting.

This may be any system that the manufacturer offers, with supporting testing and other evidence, as a venting system.

There are products available that provide passive ventilation with louvre venting or melt away/drop out panels that have passed approved testing specified in international standards. It is important to understand that 'make up' inlet air is required to provide effective venting, particularly when that venting is utilising the natural buoyancy of gases produced by a fire.

A mechanical ventilation solution could also be proposed, provided it is fully justified and based on sound evidence.

The final option is to propose an alternative solution that again provides a well-evidenced and fully justified design that shows that smoke and fire products are removed or contained so that the spread of fire is restricted and fire fighters are not faced with a smoke-logged building when they arrive.

Playing it safe with decks and balconies

The Department of Building and Housing is repeating its cautions that decks and balconies supported by untreated, kiln-dried timber may pose a safety risk, particularly where water pools rather than drains away.

Decks and balconies more than a metre above the ground need a building consent. However, even consented balconies could be unsafe. They must also be maintained throughout their life.

Certain types of timber construction are of concern. In particular, there is risk of timber decay where water can be trapped within timber balustrades enclosed by cladding or where the floor is covered with a waterproof surfacing, with or without tiles laid on it.

Unless the deck or balcony has been correctly designed, constructed and, most importantly, properly maintained, water may leak in behind the cladding or through the waterproof surfacing and create conditions that encourage timber to decay and fasteners to corrode.

Owners of properties with a balcony or deck should consider these risk factors.

- Has untreated, kiln-dried timber been used for structural support?
- Is the balustrade clad with lightweight materials with a plaster finish?
- Are there any holes or cuts in the waterproof floor surfacing?

- Is there flat access, with no step, where the deck meets the building doorway?
- Does water pond on the surface?
- Do cantilevered joists (or other joists that penetrate the exterior wall) lack flashings?

Owners should also inspect the barrier or balustrade as there may be further risk if it:

- is clad with lightweight material with a plaster finish
- lacks a waterproof capping
- has a flat top where water sits
- has a railing where water is able to leak down screw holes.

Warning signs of possible danger include:

- balconies and decks that move when walked on
- damp spots or stains where the balcony, balustrade or deck joins the main part of the building
- cracks, particularly near junctions, joints and corners
- balustrades or railings that wobble
- balustrades where damp spots or stains can be seen on the cladding
- interior water damage or any visible change to interior finishings adjacent to or directly beneath the balcony or deck.

Open timber decks constructed with durable, treated timbers are less likely to be of concern, but the following checks should be made.

- Look at where the deck meets the wall of the house. Is there anywhere that water can sit or track into the house? Do the flashings take water away from the house wall and allow it to drain away? If the cladding relies on paint to keep the water out, is that coating continuous or is there any point where water might penetrate?
- Is there any sign of timber beginning to decay? For example, is there any sign of excessive cracking or 'softness'?
- Is there proper waterproofing around the cantilevered joists or around other joists that penetrate the house wall?
- Are the balustrades or posts correctly connected to the deck or balcony structure? They should not wobble.
- Are bolted connections tight, especially on balustrades and handrails?
- Are any galvanised steel connectors corroding?

You can get further information about deck or balcony safety issues from:

- BRANZ Advisory Helpline –
📞 0900 5 90 90
- Institute of Building Surveyors –
📞 0800 113 400
- Your local council.

Glass barriers – care needed to achieve safety and durability

Glass barriers on balconies and stairs have become more popular recently, especially in apartment buildings. This increase in popularity is highlighting potential safety and durability issues. This article looks at some of the things you need to think about in order to achieve Building Code compliance. Particular care is needed for glass barriers cantilevered from the base.

Barriers must comply with Building Code Clauses B1 (Structure), B2 (Durability) and Clause F2 (Hazardous Building Materials), as well as Clause F4 (Safety from Falling). If a barrier on a multi-storey apartment building fails, this is likely to have fatal consequences. Glass is only suitable for barriers if it is correctly used and proper allowances are made for its brittle nature. Toughened glass is usually specified, but laminated glass may be appropriate in some indoor locations. When issuing a building consent, the building consent authority (BCA) must be satisfied that the completed barrier will comply with these four clauses of the Building Code.

Compliance with Clause B1 of the Code is likely to be the most difficult to establish. Like any barrier, the strength of the base fixing and the underlying structure is often the most critical consideration. Imported barrier systems will almost always need to be checked for Code compliance by a suitably qualified local engineer.

Glass barriers cantilevered from the base are not covered in Standards and Compliance Documents, so these designs need to be treated as alternative solution proposals. NZS 4223 provides glass design details for fully and partly framed balustrades. However, the support system for all glass barriers, such as post and rail, needs to be specifically designed. The BCA should therefore take the following actions sufficient to satisfy itself of Code compliance.

- Review structural test data.
- Review structural design calculations (if the BCA does not itself have the expertise to interpret structural calculations, it can have an independent check done by a suitably qualified engineer).
- Obtain a producer statement certifying compliance from a suitably qualified engineer in support of the consent application. IPENZ has a standard form, Producer Statement PS1 Design, for this purpose. Structural design producer statements were discussed in the May/June 2007 of *Codewords*.
- Review the details and context of the proposed barriers:
 - Are the construction details practical?
 - Do the attached documents support the specific design?
 - Is corrosion protection adequate?

Clause B1 requires 'due allowance' to be made for the 'consequences of failure' and therefore provision must be made for the sudden brittle mode of failure of glass. If the glass is backed up or supported by a metal structure, the barrier is likely to have a less brittle failure mode that provides some warning when overloaded. For glass barrier panels cantilevered from the base, an interlinking cap or side rail will transfer load to other glass panels if one should break.

Table 1 of Acceptable Solution B2/AS1 specifies a 50-year minimum life for barrier support posts and a 15-year minimum life for the balustrade or infill components. Achieving a minimum 50-year durability life for post fixings or cantilever base anchorages can be difficult and requires careful detailing. The area around the base is often prone to water entrapment and corrosion. Examples of rusty post bases on older buildings are not hard to find. Aluminium channels used for anchoring cantilever glass barriers can be subject to corrosion from the fixing grout.

Corrosion issues are especially important where there is no ongoing checking of barriers under the building warrant of fitness regime. BCAs should pay special attention to the initial design and construction details for durability, as well as safety.

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Other glass design issues to consider include the following.

- Mounting brackets need to provide for adjustment so that stresses are not set up in the glass by the installation procedure.
- The different temperature expansion coefficients of glass and metal supports also need to be considered and allowed for, as well as differential movement in the building structure. Aluminium expands about three times as much as glass for the same temperature change.
- When panels are unframed, standard toughened glass can sometimes fail spontaneously due to fault inclusions within the glass. The use of 'heat soaked' toughened glass for these applications reduces the chances of spontaneous failure.
- The installation processes itself must not harm the glass by introducing unintended stresses, cracks or chipping the edges of panels.
- Holes in the panels for fixing brackets must be positioned according to the manufacturer's specified spacing and edge distances. Creation of the hole must not introduce local weakness in the glass.
- Gaskets or bushes should be used between fixing brackets and the glass to reduce local stresses in the glass.

Determinations issued

Determinations that have considered the use of macrocarpa or cypress timbers in buildings.

INTRODUCTION

The Department (and its predecessor, the Building Industry Authority (BIA)) has issued six determinations about the use of macrocarpa or cypress timbers in buildings. In all six cases, the question was whether these timbers, as installed, complied with Building Code Clause B2 Durability.

Other factors that were common to all the determinations were that:

- it was accepted that compliance with Clause B1 Structure had been achieved
- the buildings were less than five years old
- the relevant timbers were exposed to the weather.

DETERMINATION NO 2004/10: DURABILITY OF UNTREATED TIMBER VERANDA POSTS

The members in this instance were 125 mm x 125 mm macrocarpa posts that supported a veranda roof, and which were fixed to brackets so they could be readily replaced. No information was supplied to establish whether the posts were heart or sap timber. The BIA found that the posts had to have a durability of at least 50 years according to Clause B2.3.1 (a)(i). It also found that posts exposed to exterior weather conditions and dampness, but not in contact with the ground, must be equivalent to structural-grade radiata pine treated to Hazard Class H3.2. This is the requirement set out in Acceptable Solution B2/AS1. The BIA decided that the posts did not meet either of these criteria, and therefore determined that they did not comply with Building Code Clause B2.

DETERMINATION NO 2004/71: HEART MACROCARPA VERANDA POSTS

This determination concerned 200 mm x 200 mm macrocarpa posts that supported either the balconies or the roofs of five apartment buildings. The posts were of heart timber, were not in contact with the ground, and their cut ends were painted with a copper naphthenate preservative. The BIA commissioned a report from an expert in the preservative treatment of timber on the durability of the posts in question. The report concluded that the posts had the equivalent durability to that conferred to radiata pine by preservative treatment to Hazard Class H3. Accordingly, the BIA determined that the posts complied with Building Code Clause B2.

DETERMINATION NO 2007/97: EXPOSED HEART MACROCARPA POSTS AND BEAMS TO A HOUSE

In this instance, the members in question were posts supporting upper decks, 300 mm x 200 mm primary portal members, and 200 mm x 150 mm portal struts and beams. All the members were heart macrocarpa finished with a clear preservative, and all the exposed end-grains were protected by metal cappings. The Department noted that, while some members were exposed to high winds, this could help in removing debris that would otherwise trap moisture. Considering an expert's report, the timber treatment, the over-sized portal members, and the end-grain protection, the Department determined that the exposed posts and portals complied with Building Code Clause B2.

DETERMINATION NO 2007/99: CODE COMPLIANCE OF MACROCARPA POSTS AND RAFTERS INSTALLED IN A HOUSE

The dressed macrocarpa members in this instance were six oval cross-section 150 mm x 100 mm laminated columns supporting a deck roof, and 185 mm x 45 mm or 185 mm x 70 mm projecting roof members. All the timbers in question were protectively coated. None of the timber elements were in contact with the ground, and the columns could easily be replaced. While it was established that the rafters were constructed in heart timber, no information was provided to show that the columns were also heart macrocarpa. The Department determined that, once the territorial authority was satisfied that the posts and rafters were compliant with Clause B2 (which it was to do by using criteria from Determination 2004/71), the territorial authority should issue a code compliance certificate.

Continued on page 14

**DETERMINATION
NO 2007/129:
THE DURABILITY OF
LAWSON CYPRESS POSTS
AND BEAMS TO A COTTAGE**

This determination related to heart Lawson cypress posts supporting roofs or verandas, together with rafters and roof beams. The posts were secured to metal brackets, and the end grains were protected by copper cappings. It was accepted that heart Lawson cypress timber has similar properties to heart macrocarpa. However, as in this case the timber as installed lacked a surface preservative, it did not meet the durability required by NZS 3602. In addition, there was insufficient drainage at the junctions of the posts and bearers. The Department determined that, once a preservative had been applied to the end-grain and surfaces exposed to the elements, and ventilation between posts and bearer had been improved to the territorial authority's satisfaction, a code compliance certificate could be issued.

**DETERMINATION
NO 2007/129:
HEART MACROCARPA
POSTS AND DECKING
TO A HOUSE**

The building elements that were subject to this determination related to an amended building consent and consisted of Mexican cypress 150 mm x 150 mm deck support posts, 19 mm thick decking, and 100 mm x 100 mm balustrade posts. The decking and posts were easy to replace, but the columns could only be replaced with a moderate amount of difficulty. While the majority of the timber was heart wood, there was evidence of sapwood present in the balustrade posts and decking. The cut ends of the columns and beams were treated with a preservative containing copper naphthenate, and the tops of the columns were fitted with copper caps. It was accepted that heart Mexican cypress timber has similar properties to heart macrocarpa. However, as in this case the balustrade posts lacked a surface preservative or cappings, they did not meet the durability required by Clause B2. In addition, the columns required to be treated with preservative and painted for protection. The Department determined that, while the decking was Code-compliant, both the columns and posts had to be treated as described before they would be Code-compliant.

SUMMARY

The six determinations have established certain criteria to decide whether macrocarpa, or Lawson or Mexican cypress timbers, are Code-compliant when installed to the exterior of buildings. Such timbers are the equivalent to structural-grade radiata pine treated to Hazard Class H3.2, and therefore comply with Clause B2 of the Building Code if:

- they are heart timbers
- they are not in contact with the ground
- they are relatively easy to replace
- their surfaces are treated with an appropriate preservative
- their cut ends are similarly treated or suitably capped
- they have a durability of at least 50 years according to Clause B2.3.1 (a)(i).

**To read all the determinations
in summary or in full, go to:**
 [www.dbh.govt.nz/
determinations](http://www.dbh.govt.nz/determinations)

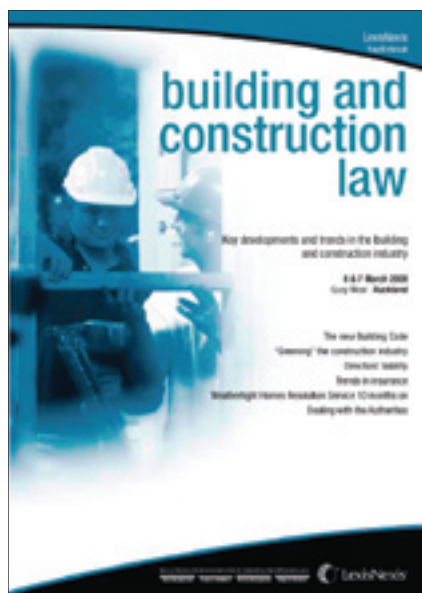
Learning curve

BUILDING AND CONSTRUCTION LAW CONFERENCE

This fourth annual conference run by Lexis Nexis is for property lawyers, building surveyors and inspectors, local government advisors and construction managers and engineers. It will look at key developments and trends in the building and construction industry including:

- the new Building Code
- greening the construction industry
- directors' liability
- trends in insurance
- the Weathertight Homes Resolution Service 10 months on
- dealing with the authorities.

The conference is on 6 and 7 March 2008 in Auckland. More information at: <http://www.lexisnexis.co.nz/conferences/seminars/2008/BuildingandConstructionLaw/default.asp>



BUILDING OFFICIALS INSTITUTE OF NEW ZEALAND CONFERENCE

The Building Officials Institute of New Zealand expo and conference is a key annual event where building professionals can develop a better understanding of their responsibilities and duties under the law. It is also a chance for BOINZ members to meet and share knowledge and ideas about the science of building. Delegates will include building control professionals, surveyors, architects, builders, developers and others interested in this industry.

The conference is on 20–23 April, 2008 at the Aotea Centre in Auckland.

More information at: <http://boinz.org.nz/conference08.htm>



MORE BOINZ EVENTS

BOINZ encourages its members to develop a better understanding of the responsibilities and duties imposed by Acts and regulations. It has a calendar of events on its website at:

<http://www.boinz.org.nz/calendar.htm>.

You can also download a PDF of its Training Academy prospectus 2008 at: http://www.boinz.org.nz/docs/events/Training_Academy_Prospectus_2008.pdf

BOINZ events for March 2008 include:

Date	Event	Area
March 3–7	Water Supply and Sanitary Plumbing – Getting Started in Plumbing Inspection	Wellington
March 10–12	Building Controls – Getting Started in Building Controls	Dunedin
March 11	Skeleton of the House Seminar Series	Wellington
March 13–14	Site Inspection – Getting Started in Building Controls	Dunedin
March 17	Surviving in the Ever Changing Workplace	Hamilton
March 18	Building Consent Vetting	Alexandra
31 March–2 April	Building Controls – Getting Started in Building Controls	Hamilton

Continued on page 16

Learning curve *continued*

SHORTENING THE ODDS – REDUCING YOUR BUILDING RISK

Specifically for builders, and to be held in 22 centres nationwide, the focus of these seminars will be on practical building techniques for achieving weathertight construction and so reducing your risk of liability. Solutions for a number of high risk areas will be covered including decks, parapets and balustrades, windows, penetrations, drained cavities and cladding types. See the BRANZ website (www.branz.co.nz, click on “Seminars”) for further details and to register online for one of the following dates.

Date	Location
Monday 3 March	New Plymouth
Tuesday 4 March	Palmerston North
Wednesday 5 March	Nelson
Thursday 6 March	Greymouth
Monday 10 March	Tauranga
Tuesday 11 March	Rotorua
Wednesday 12 March	Gisborne
Thursday 13 March	Napier

DIPLOMA IN BUILDING SURVEYING

Building Officers (inspectors) of the future will be increasingly expected to help builders ensure buildings are safe, healthy and environmentally sustainable.

The Diploma in Building Surveying for the building industry was developed by Wellington City Council and Wellington Institute of Technology (WelTec) to meet the developmental needs of building officials and ensure graduates have the knowledge and skills required to meet their future expanded role. The diploma has been developed to cross-credit with the proposed new NZQA Diploma in Building Controls. For more information see <http://www.weltec.ac.nz/construction/1building.php>

Important changes to BIA website

The content previously available on the Building Industry Authority website (www.bia.govt.nz) is now located within the Department of Building and Housing website:

 www.dbh.govt.nz

Legality of Department of Building and Housing interpretations

Only the courts can issue binding interpretations of the Building Act 1991 and Building Act 2004 and Regulations. Indications and guidelines issued by the Department of Building and Housing, either in *Codewords* or other communications, are provided with the intention of helping people to understand the legislation. They are, however, offered on a 'no-liability' basis and, in any particular case, those concerned should consult their own legal advisors.

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