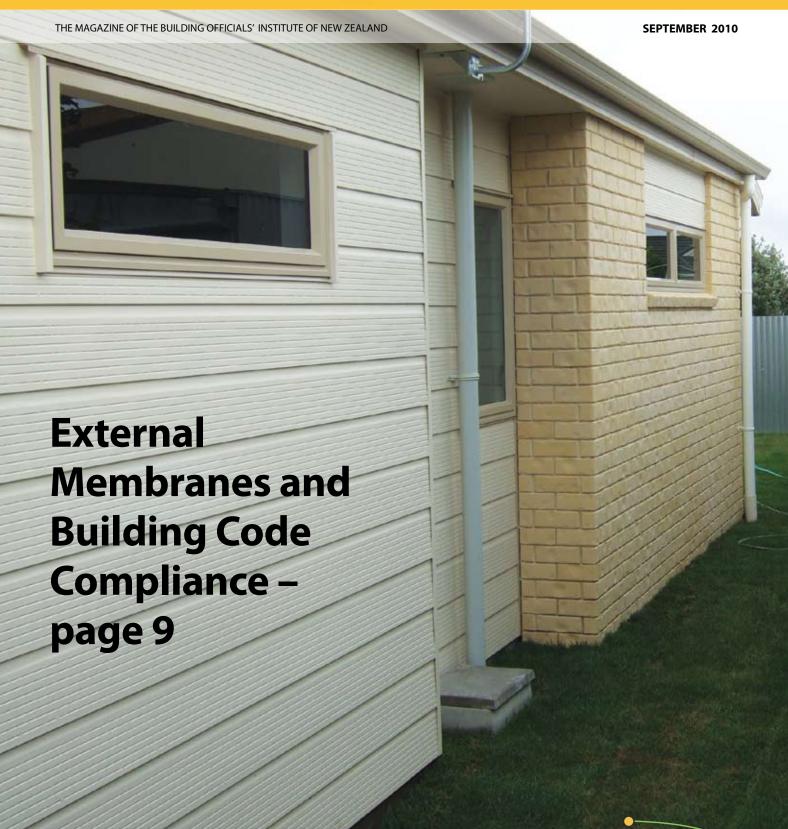
straight up





Pacific Coilcoaters New BOINZ CPD Provider

Pacific Coilcoaters, manufacturer and marketer of the ColorCote® range of pre-painted roofing and cladding systems, is now an approved BOINZ CPD provider.

Rob Armstrong, Architectural Manager for PCC has developed an interesting and entertaining presentation which encourages audience participation.

The hour long event attracts 0.5 BOINZ CPD points and covers:

A short history of Pacific CoilCoaters and its position in the New Zealand market, the ColorCote® product range: and

AS/NZS 2728:2007 and the use of ColorCote® products within the code.

The majority of the presentation covers common faults and design issues.

A certificate of attendance will be issued to all attendees for their record of learning.

Rob Armstrong's background in the construction industry includes a number of years as a builder and nearly a decade in both metal and membrane roofing.

Rob is available to do his presentation at a time convenient to BOINZ members - during or after normal work hours.

Contact Rob at:

Email: rob.armstrong@colorcote.co.nz

Phone: 09 579 9199

Mobile: 021 927313

Toll Free: 0800 ARX ZRX



www.colorcote.co.nz

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straight up

IN THIS ISSUE

President's Desk	2
Board Matters	3
Home Warranty Insurance	4

Developing Nationally	
Consistent Practices	6

GIB Technical Bulletin	8
------------------------	---

External Membranes and	
Building Code Compliance	9

Applying waviers and	
modifications under the act	12

Building Consent Stats	14
bullating Conscint Stats	17

Calendar of events	16
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President's Desk

At the recent Senior Building Consents Officers Forum I announced we were still to make a CEO appointment.

I am pleased to announce that we appointed Nick Hill to this position early in September.

Since then Nick has been busy getting to grips with the office arrangements and issues crossing his desk. Some of you, I know have already made contact. Nick's contact details are nickhill@boinz.org.nz.

So ... it is business as usual at the Institute's office and the Training Academy's programmes are proving very popular. Louise Townsend can answer all queries on the Academy's training calendar and provide quotes to councils and other bodies for any specific training needs. Give Louise a call on 04 473 6003 or email training@boinz.org.nz.

In July the Board gathered in Taupo for their regular meeting, followed by a combined Board meeting/training day with as many of the North Island branch secretaries and chairpeople that were available to attend. Those in attendance, both Board and branch officers, found the meeting very useful, informative and stimulating and the Board's November meeting will be held in Christchurch where the South Island branch secretaries and chairpeople will be invited to attend the same type of session.

The purpose of the meeting was to enhance the branch officers' knowledge and understanding of the Institute's structure, modus operandi; to enhance their skill and understanding of the Institute's business model, operation, structure and to answer questions including risk and financial modelling

and carry out a SWOT survey; to give a detailed synopsis of products and services; discuss the Institute's strategic and business plans; have general discussions on membership and the membership survey; indulge in some future thinking of the building control sector and to share ideas.

The meeting was also a valuable opportunity to reinforce the role of the branch officers and provide encouragement to them as they organise meetings and training days in their region. The core role of the officers is to organise and run branch meetings and activities; to introduce new members; to provide information and support to each other; to encourage leadership in others to ensure continuity in the branch management, to ensure that incoming officers are well briefed on the 'guidelines' for branch operation and to encourage participation of all national initiatives and growth in the membership of the Institute.

Branch meetings have low attendance compared to the number of members in the region and less than an average of 15% of the region's members regularly attend meetings. The branch officers were encouraged to provide interesting meetings with good quality presentations, on a regular basis that members will not want to miss and to make sure that every member in their region had the opportunity to attend.

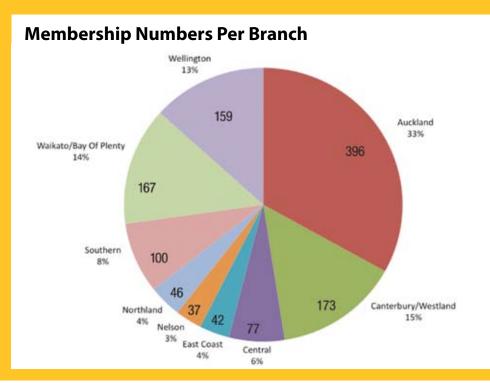
Succession planning is important for both the branches and the leadership of the

Institute (the Board), and should not be left to chance. The current board is the first to comprise of members elected by all the membership of the Institute and not by individual branches. Because the branches no longer have their own elected Board representative, individual Board members have been allocated two branches so that they can keep in touch with members through branch meetings. To date most of the Board have attended both Branch meetings although some branches have yet to hold any meeting since the Board election in April 2010. This issue was also addressed at the meeting in Taupo.

The board engages with the CEO and provides insight, advice and support on key decisions. It also accepts responsibility for overseeing the operation of the organization including the Training Academy which is providing solid and dependable training to the industry. I encourage all members to continue to support the Academy training courses. If we don't we will lose this valuable service.

As we move forward to a new CEO and, obviously, some changes for the Institute, I look forward to updating you all on these. I am available if any member wishes to contact me and correspondence etc. should be directed through the Institute's office in the first instance.

Phil Saunders
President



Reporting to the recent Senior BCO Forum, Board member Stu Geddes, who has achieved his Diplomas through the pilot programme APL process, outlined what had occurred with the pilot scheme.

It had taken a long time but one thing that was learnt from it was that those who had put themselves forward had not completed the work in the allotted timeframe. There were 108 applications from the North Island but only 8 were successful for the programme. Less put themselves forward in the South Island where again there were only 8 successful for the programme.

The final meeting on the process was held in early August 2010.

There were people on the pilot scheme who did just processing or inspections and it has been suggested that the qualifications may need to be split in the future as not every inspector has undertaken both roles in the working life. The two diplomas were registered with NZQA, though, and will not be changed for at least four years.

Now that the pilot scheme is finished the question remains of who will pick up the rest of the work involved in the qualifications i.e. who will train, who will assess etc. The Training Academy has put forward a proposal to the board as it is the only training organization in the country with the right people on board to undertake the training. The TA is in negotiations with Otago Polytechnic so that the Academy could be the training organisation delivering the mechanism for the unit standards.

The qualifications can be delivered by a polytechnic - that is a pathway. Academia would then have the say in what is in the curriculum, in consultation with the sector. They often do not have workplace experience though and don't have practical knowledge. Their training would also be expensive and lengthy. However no polytechnic will invest in the qualifications training if Regulation 18 is dropped. As everyone in this sector knows, Regulation 18 compels local authorities to have qualified staff (or staff currently undergoing training) undertaking inspections etc. by 2013.

Another alternative is that, if the Training Academy went through the process of becoming a PTE (private training enterprise), it could deliver the qualifications on that basis. This would also be an expensive and lengthy process.

What the Institute's Academy would prefer is to be a training contractor under a polytechnic and provide good quality unit standard training from the industry for the industry. This training would be delivered around the country by the same qualified trainer – not a series of different trainers, delivering different training around the country.

Through the assessment of prior learning process (APL) statistics show that approximately 10% of building officials will be able to pass their qualification through this process, 30% would need some training in order to pass, and the remaining 60% would need to undertake a fair amount of training in order to pass.

Because of the advent of the national competency system and the Institute's

current licensing process, the Institute believes that an APL would be less expensive and onerous because building officials will have already proven competency against both these measures. This could be a good pathway of least resistance and highlight the deficiencies in training far more easily and expeditiously.

It is believed that support for the qualification is there, and everyone is waiting for it to be offered and delivered. The pilot programme has dragged on far too long which has been disappointing. However it is now exciting to see that the qualification is now out there. The main sticking point now is the cost of developing the appropriate training programmes for delivery to building officials so that those who do not pass their Diploma qualification via the APL process can undertake further training. The Institute has some ideas on how this might be achieved and is working with the Senior Building Consent Officers to solve this.

3



Insurer's perspective of home warranty insurance

John Lucas, Insurance Council of NZ

The Insurance Council has become more involved in the building industry issues over the last few years due to two issues:

Compliance of our own industry for the Building Code framework for insurance repairs to buildings; and

Proposals from the Government for insurers to provide Home Warranty Insurance

Back in April the Insurance Council ran a building consents and compliance workshop covering commercial and residential insurance reinstatements, for insurance assessors, loss adjusters and insurers' building service providers.

The workshop follows about 18 months of work with the seven building authorities in Auckland and a number of key people within the insurance council's membership.

They want to extend this to other councils around NZ later in the year starting with Christchurch etc.

Building Warranty Insurance

A couple of years ago the Department of Building and Housing approached the Insurance Council and its members on the proposal for providing Home Warranty insurance.

At that time, insurers had a lot to consider, as at no time in the past has Home Warranty insurance been provided on any large scale by any insurer in this country. At the time the Insurance Council did not give the Department any yes or no answer and said they were willing to work with the Department to explore Home Warranty insurance options.

With the leaky building problems of the past, insurers are naturally going to be very cautious. The problem that insurers face now is that there is no real form of independent quality control on building work. Unless there is the ability for independent quality control to be available in the future, insurers would have a real problem measuring the risk the government may like them to insure.

The Insurance Council is aware there are only a limited number of compulsory home warranty schemes operating in the western world today. One of them is France and the other is the Australian state of Queensland

A number of Australian states, New South Wales, Victoria and South Australia, have compulsory death, disappearance and insolvency schemes, which guarantee the completion of a property but do not guarantee that the builder will be around to rectify any building defects following completion. The insurance scheme only pays out money if the builder disappears, dies, or becomes insolvent; otherwise it is up to the builder to be around to repair any faulty workmanship.

In Queensland, the State Government Building Services Authority operates a compulsory home warranty scheme that is capped at \$200,000 for any one property and is compulsory on all new residential houses and is tied into builder licensing.

If a builder builds a house that has defects, the builder is given notice by the Queensland Building Services Authority to rectify the defects within a certain period of time; otherwise that builder's licence will be suspended. If the builder fails to rectify the defects within a required timeframe, the builder will have his building licence cancelled and the Queensland Building Services Authority insurance scheme will then pay someone to undertake the repairs. So if the insurer pays out, then the builder loses his building licence and will not be able to run a building company. Instead that person could only work for someone else who has a building licence. In Queensland this acts as an incentive for ensuring quality workmanship. The Queensland Building Services Authority is the insurer.

Any form of Home Warranty insurance in New Zealand would face if they were considering home warranty insurance is that the Building Act is performance based, rather than prescriptive. For insurers it would be a lot easier to measure risk against a set of prescribed methods on how you would build a house rather than on objectives that exist presently. The 1991 and 2004 Building Acts allow you to do almost anything to achieve a particular building objective.

Another issue that insurers could face with the Home Warranty insurance proposal is the need for independent building site inspections, to ensure compliance with insurers Home Warranty insurance terms and conditions.

In the UK a private insurer, Aviva, participates in a successful voluntary home building warranty scheme known as the National House Building Council (NHBC). The NHBC has been running for over 40 years and is backed

by an extensive knowledge base, a register of approved NHBC builders and a research division similar to our New Zealand BRANZ that develops best practice and product approvals. The NHBC building warranties run for 10 years. 80% of new homes built in the UK each year have the NHBC 10 year home warranty. NHBC requires very detailed approvals and inspections. Firstly, the engineering and architectural work needs to be approved by NHBC as well as the building company. The building land has to be approved and possibly tested for subsidence risk. Every significant building stage is inspected by

NHBC's own building inspectors. This is all

Consent Authorities.

done independently of local council Building

The UK NHBC scheme gives us some idea of how a successful home building warranty scheme could work in New Zealand. The only issue is that we would need to be prepared to pay this extra cost. Premiums are worked out on how a building company's home warranty claims record compares with the national average loss ratio. Premiums are unknown, but would be significant compared to what our building Minister may be thinking. The NHBC scheme embraces the important controls insurers would need by instituting detailed building progress inspections. These inspections will not be cheap, but are important in allowing insurers to control their claims risk. It would be difficult for any insurer to envisage any form of Home Warranty scheme operating in New Zealand without some sort of detailed NHBC styled inspection system that is independent of local

A voluntary Home Warranty scheme in New Zealand may not attract critical market size to be viable so it would need to be compulsory.

On 29 March the Australian Victorian government announced that it would have to take over the domestic and building insurance scheme run in Victoria, which is essentially death, disappearance and insolvency cover, not building defects insurance, because the last two insurers, CGU and Lumleys, had decided to exit the scheme. The scheme has not been profitable for those insurers. It is quite likely that the Victorian State governmentfunded scheme from July 2010 could be more expensive to insure with.

The Department of Building and Housing's February 2010 Building Act Review discussion document looks at a slightly different proposal for providing Home Warranty insurance. This is covered in Section 3 – Building and Consumer Confidence – on page 30 of the February discussion document.

In reality, building consent authorities do not really want to be liable for building failures. They would like to see the risk passed on elsewhere.

Under the proposals, builders would have to enter into approved contracts with principals, and make required disclosures on trade qualifications, experience, and dispute resolution and warranty obligations.

Section 3.3 talks about developing more effective warranties. In short the Department is considering that the builder will provide the household owner with warranty cover for either six or ten years (6 under the Statute of Limitations, or 10 years longstop under the current Building Act) for defects causing structural stability or weathertightness; or for non-critical elements such as interior fittings this could be between 2 and 3 years. This would become a Statutory Warranty which is assigned to the actual property. The Statutory Warranty would have a cap of \$500,000 for new builds, and the cover would apply for any

residential building work where the contract work is for \$15,000 or over. (These are only discussion ideas at this stage.)

The Warranty would also include loss of deposits and non-completion of contracted building work within a reasonable time. So the Warranty is really asking to cover financial default and non-performance. This appears to place a lot more risk on builders than there is currently.

The discussion document includes options to transfer that risk in the form of a surety to a financial entity, such as an insurance company, a bank or other solvent party. The surety will act as a backstop for warranties.

Currently the Registered Master Builders
Federation and the Certified Builders
Association of New Zealand provide some
form of surety for their members that provide
guaranteed workmanship. The idea of the
surety will be providing consumers with added
certainty that problems will be fixed even if
the builder is no longer around; for example,
has become insolvent, has died or has gone
out of business; or simply refuses to fix the
defects.

Surety provisions appear to be optional, and it will be left to the market to choose which builder is preferable. No doubt ones with a surety will be the most preferred.

If financial institutions such as banks or insurance companies got involved in providing sureties it would be normal that a counterguarantee would be required from the builder in other words against the builder's assets.

In many of the Australian states builders

In many of the Australian states builders resisted providing counter-guarantees.

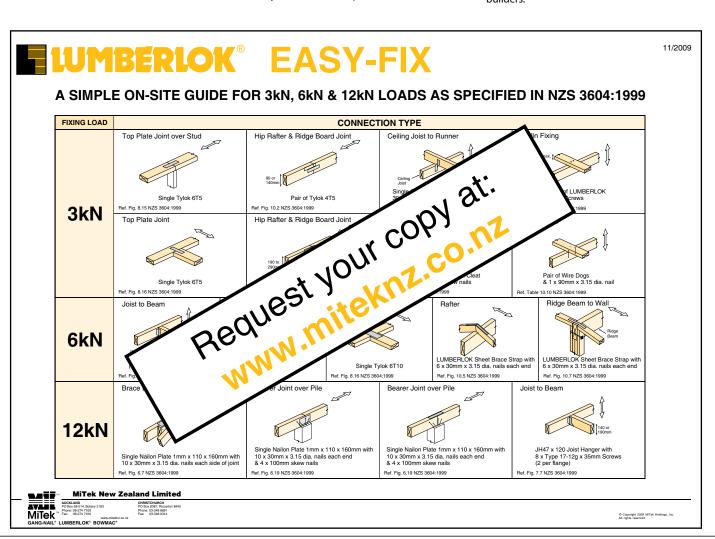
I am not sure insurers will get involved in providing sureties for builders Home Warranty at this stage. Time will tell. Right now insurers will be very cautious entering into any new business ventures where past claims histories are not good and where large amounts of capital are needed.

Higher risk houses/more expensive houses would cost more to insure for a home warranty or surety. A home warranty scheme would also not cover larger Council type residential housing schemes.

The discussion document from the Department was a consultation document and it has now come back in and gone to cabinet. An announcement is expected from the Minister on Thursday this week. In all likelihood it will mean further work for the Department to look into more options.

French insurers have been involved in the market for a long time. The insurance is compulsory and is linked to licensing of builders.

5



Implementation of the new national competency framework

John Lawrence, Auckland City Council

The competency framework has been initiated by the Department of Building and Housing. Many types of council operate with a different system and transferring staff are unable to be assessed for competency because of this. The Auckland Council has adopted this new formula for going forward.

The framework is based on six levels, three of which are residential and three are commercial. These can run concurrently and there is no need to move progressively through all the levels.

Residential 1 is single storey stand alone buildings/dwellings.
Residential 2 is a detached dwelling up to 2 stories and a risk matrix of no more than 12. Residential 3 is up to three stories and a risk matrix of

Residential 1-3 Commercial 1-3

Competency Levels
Residential 1-3 Commercial 1-3

Performance Indicators For Each Competency Level

Candidate Evidence
Template
(Inspection & Processing)

Categorisation Flowcharts

Categorisation Flowcharts

TOOLS

over 12. Vertical fire separation may also occur in this category.

Commercial 1 is buildings equal to or less than two stories with less than 100 occupants. Commercial 2 are non-residential buildings of no more than 3 stories and less than 200 occupants. Commercial 3 is buildings above this height and number of occupants.

Staff competency levels are processing, inspections and certification but there is no provisional level. The staff member is either competent or developing competency. A staff member could be limited in each consent type according to their competency.

In processing the new levels were mapped and completed at the end of July 2010 by matching consent types to the new levels. Mapping for Auckland City Council was also matched by inspection type to the new three group system.

Consent types - level R.3

3	R3	RAD	Res Addition
3	R3	RAL	Res Alterations
4	R3	RD3	New Dwelling 3 storey and
	R3	RMU	Res Multi unit
	R3	RRC	Res Reclad

Consent types - level C.1

	C1	BRG	Utility works Bridges	
1	C1	BUS	Bus Shelters	
3	C1	CDB	Comm Demolish Building	
4	CI	CMV	Comm Minor Work	
4	Ct	CNS	Comm New Single-Storey	
4	C1	COF	Comm Shop or Office Fitouts	
	Ct	CRW	Comm Retaining wall	
4	C1	FAS	Fire Alarm System Install	
1	C1	MOT	Marquee or tent	
	C1	OBP	Utility works Observatory platform	
	C1	ОТН	Utility works Other	
	C1	PBT	Utility works Public WC block	
	C1	PFB	Utility works Public footbridge	
2	C1	PLE	Playground equipment	
	C1	RCC	Res Cable car	
1	C1	SHG	Scaffolding Hoarding Gantries	
2	C1	SIG	Sign Structure	

Consent types - level R.1

1	R1	AAD	Antenna or Satellite Dish
2	R1	CON	Conservatory Building
	R1	DBA	Res Demolish building
1	R1	DRS	Drainage Separation
	R1	FMS	Farm structures
1	R1	REA	Removal Application
2	R1	REB	Reposition Building
3	R1	REW	Res Retaining Wall
2	R1	RGC	Garage or Carport
2	R1	RMW	Res Minor work
2	R1	RRL	Repile Reblock Lifting
1	R1	SFH	Solid Fuel Heater
	R1	SWH	Solar water heating

Consent types - level R.2

	R2	RFR	Res Fire reinstatement
3	R2	RND	RES New Dwelling 1 or 2 Storey
2	R2	SSP	Swimming and Spa Pools

Consent types - level C.2

5	C2	CAD	Comm Addition
5	C2	CAL	Comm Alteration
	C2	CFR	Comm Fire reinstatement
	C2	CMU	Comm Mulli unit
	C2	CRC	Comm Reclad
5	C2	CRM	Commercial and Residential

Consent types - level C.3

	СЗ	CDM	Comm Dam
6	СЗ	CMS	Comm New Multi Storey
6	СЗ	cow	Comm Wharf
6	СЗ	RMS	Res Multi Storey
	СЗ	TUN	Utility works Tunnels

Transition steps for existing staff were:

- · Compare existing to new levels
- Map existing BCA categories to new levels
- Map individuals to new national levels
- During annual review any changes will be identified since the last review

There is currently 75 staff in Auckland City Council and this will be 200-300 in the new system. Of this only 25 assessment have been completed so far, with another 10 pre-assessments having been carried out to date.

The assessment process is a five step exercise:

- · Assessment planning and agreement
- · Evidence obtained by candidate
- · Assessment undertaken
- Assessment decisions made
- Assessor records the outcomes

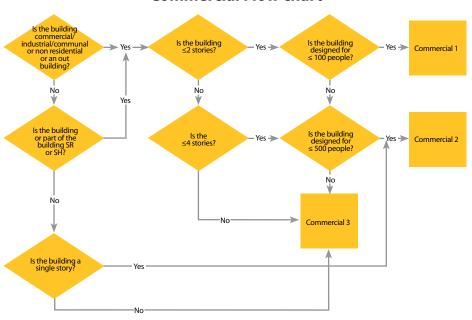
There is a cost to this exercise and this is mainly in time – assessment planning and agreement takes 1-2 hours, meeting with the officer lasts 1 hour, the officer gets his evidence which can range from 4-5 hours up to 12-14 hours. The more information provided then the less time is taken up in the final assessment which should take no more than 1 hour but, if information is incomplete, this can take up to 3 hours. Recording the information afterwards and reporting is a further 1 hour.

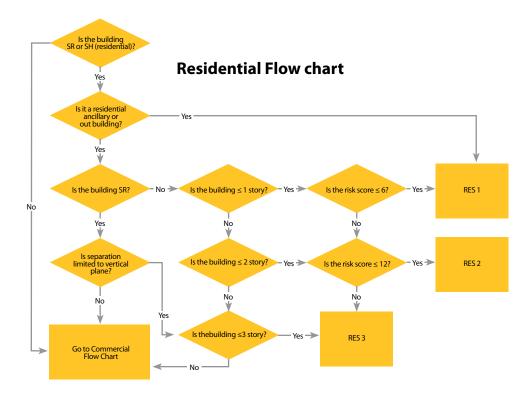
Results are then written into an assessment skills matrix chart.

Assessment skills matrix

			,				
		Res 1	Res 2	Res 3	Com 1	Com 2	6 (C3)
Processing	Developing	×	x x		09/03/2010		
Processing	Competent	09/03/2010	09/03/2010	09/03/2010	×		
Inspection	Developing	×	×	×	×		
nispection	Competent	09/03/2010	09/03/2010	09/03/2010	09/03/2010		
Certification	Developing	×	×	×	×		
Certification	Competent	09/03/2010	09/03/2010	09/03/2010	09/03/2010		

Commercial Flow chart





straight up September 2010 7

Lodgement

• Implementation on 2 August

	ment type Building o		AUCKLAND City Council							
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Buildi	ng compete		D-4.2-PROC, and (please circle		for a building conser R2 R3 C1 C2 C					
Conse	nt no:									
Existin	g PIM no:				Or new PIM no:					
Project	t address:									
Tick if reg'd	Inputs		Pre-check		Information required	Ap	Approvals			
		Date	Print name	Initial	Reason for decision	Date	Print name	Initial		

The assessor specifications are

- Appropriate experience in building control
- Current and comprehensive technical and legislative knowledge and understanding
- Credibility and experience in undertaking assessment
- · Excellent communication skills

One of the biggest difficulties found to date is in making the decision on competency and conveying this to the officer concerned. It is important to know what the officer doesn't know so that a training plan can be mapped out for them. A question put to John was whether there would be an incentive for officials to increase their level of competency. Training would be provided for staff to move them forward in their competency.

GIB TECHNICAL BULLETIN

Ceiling batten centres for Gypsum Plasterboard

AS/NZS 2589:2007

Australian/New Zealand Standard™ AS/NZS 2589:2007 "Gypsum linings – Application and finishing" states;

3.5.2.1 Framing spacing

The spacing of framing members directly supporting gypsum linings shall be not greater than 600 mm for all thicknesses of gypsum linings. In the case of ceilings, spacing of framing members for 10 mm standard grade gypsum plasterboard shall not exceed 450 mm.

AS/NZS 2589:2007 is an industry Standard that;

- is agreed and promoted by responsible gypsum plasterboard manufacturers and users.
- serves to provide consistent plasterboard application and finishing
- includes recommendations for Levels of Finish and best practice construction to ensure finish expectations are achieved.
- aims to protect the building owner and occupant against disappointment associated with finish blemishes.

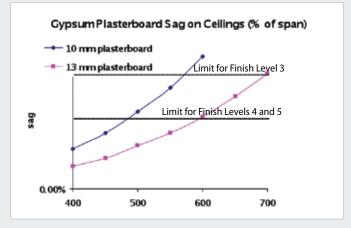
Although the Standard is not mandatory Winstone Wallboards and leading Australian plasterboard brands strongly support its adoption and use.

The effect of span

Deflection does not increase in direct proportion to span. For any gypsum plasterboard the sag for a 600 mm span is more than 3 times the sag for a 450 mm span.

Temperature and humidity at the time of lining can also significantly affect the stiffness of gypsum plasterboard and how it deflects under self-weight along with any additional weights such as imposed by services, insulation, down-lights, etc.

The following graph shows how sag increases exponentially as framing centres get wider.



The 2 horizontal lines represent the suggested limits for Levels of Finish 3, 4 and 5.

Winstone Wallboards recommends

Quality of finish expectations are continually evolving as customers, such as home owners, are becoming more discerning and are demanding superior quality for their investment. To go outside the recommendation of AS/NZS 2589:2007 for the sake of saving the cost of a few ceiling battens or thicker plasterboard is potentially placing the customer at risk of disappointment.

In accordance with industry Standard AS/NZS 2589:2007 Winstone Wallboards recommends ceiling framing support centres no greater than 450 mm for 10 mm gypsum plasterboard and no greater than 600 mm centres for other board thicknesses.

Best practice for ceilings is to:

- use 13 mm GIB® plasterboard at 600 mm centres for residential ceilings.
- use GIB® metal ceiling battens on clips to minimise aesthetic issues relating to timber movement.
- Back-block all sheet end joints. Longitudinal joints must also be back-blocked as described in the GIB® Site Guide.

See the GIB® Site Guide for further detail or call our GIB® Helpline on

External Membranes and Building Code Compliance

By Paul Hobbs, Advisor Dept of Building & Housing

This article provides guidance on establishing compliance with Clause E2, External Moisture, of the Building Code. Specifically, the guidance covers compliance matters associated with external membranes for roofs and decks specified in building consent applications. More generally, it also highlights the different ways of demonstrating compliance with Clause E2 that consent applicants/designers most commonly use:

- following an Acceptable Solution in a compliance Document; or
- proposing and justifying an alternative solution to a building consent authority (BCA).

Guidance developed after queries from the sector

This guidance has been developed after the Department received a number of queries from the design sector about the processes that a BCA was using to check the compliance of designs for external membranes for roofs and decks included in building consent applications.

The queries related to the content of one of the BCA's practice notes it had developed to highlight some of the critical factors to be considered when making compliance decisions about external membranes, and deciding whether to grant or refuse building consent applications.

In recent years, some BCAs have proactively developed tools as working instructions, guidance, or practice notes to work from when undertaking their compliance-checking role. Often BCAs make these documents publicly available on their websites to help guide and advise their building control staff, as well as local designers, consent applicants, and any other interested parties who are involved in the building consenting process.

The BCA produced this material as a tool to assist establishing building compliance and to help address the incidence of deck and roof membrane failures occurring. It had found this to be a factor contributing to weathertightness problems with a number of buildings in its area. In particular, the BCA

found a high occurrence of membrane failure where these surfaces are constructed with very minimal falls/slopes, where tiles have been directly fixed to membranes, or where membranes have failed due to the age and/ or movement in their substrate – that is, the deflection or give in the supporting framing or substrate.

The Department fully supports all BCAs proactively developing such material and making it publicly available for their customers. This is one way for BCAs to clearly communicate their best practice advice to both their staff and the sector in a way that is open and helpful. It also helps to educate the wider sector and to achieve a greater level of consistency and efficiency.

However, it is important that all parties appreciate that such documents are only tools to help achieve building compliance – they cannot be used to set different requirements to those provided for under the building consenting framework established by the Building Act 2004.

Some designers were concerned that the BCA may have been using some of the technical details in one of its practice notes to try and set a 'blanket approval requirement' for a minimum degree of fall for all external membranes specified in building consent applications. It was also suggested that, in some cases, this could have the effect of setting a higher level of compliance than the Building Act, the Building Code and a nominated Compliance Document actually required.

There was also some uncertainty about whether the practice note in question was intended to guide the BCA's decision-making around external membranes for all building consent applications (including those that followed the Department's published Acceptable Solution Compliance Document for external moisture, E2/AS1). Or, alternatively, whether it was only supposed to apply to building consent applications that contained a proposed alternative solution in relation to the external membrane specified in the building design (ie, design solutions outside the scope of E2/AS1).

Guidance from the Department

The Department considered the issues involved, had discussions with relevant parties, and developed the following guidance around assessing external membranes in the wider context of making sound compliance decisions around clause E2, External Moisture, of the Building Code. As a result, the BCA revised its practice note to incorporate the Department's guidance. The guidance contains some important messages for all BCAs, the wider design and construction sector, and building consent applicants.

Relevant Building Act 2004 requirements

Some key requirements in the Act include:

- Section 17 requires building work to comply with the Building Code
- Section 18 specifies that building work does not have to achieve performance criteria additional to or more restrictive than the Building Code
- Section 19 specifies a number of ways that compliance with the Building Code can be established. Examples include:
- complying with a Compliance Document published by the Department; or
- complying with a determination issued by the Department.

Means of compliance

Compliance Documents provide details for construction that, if followed correctly, will result in compliance with the Building Code. A design in a building consent application that complies with a Compliance Document must be accepted by a BCA as complying with the Code. Each Compliance Document contains at least one of the following:

- a Verification Method (test or calculation methods that prescribe one way to comply with the Building Code); and/or
- an Acceptable Solution (step-by-step instructions that show one way to comply with the Building Code).

Building Code Clause E2, External Moisture, has one Verification Method and one

9

Acceptable Solution. The Acceptable Solution for clause E2 is known as E2/AS1.

It is important to note that compliance with the Building Code can also be demonstrated by way of an alternative solution. This means a solution that is compliant with the Building Code but is not part of a Compliance Document. One benefit of having a performance-based Building Code is that designers have the scope to be innovative and imaginative, push design boundaries, and design different types of buildings. However, in doing so, design professionals must still provide evidence to the BCA that compliance with the Building Code will still be achieved.

E2/AS1 - External Moisture

E2/AS1 is the Acceptable Solution that covers external membranes for certain buildings. Importantly, however, E2/AS1 has a clearly defined and relatively narrow scope and does not apply to all building designs. Therefore it cannot always be used to demonstrate compliance with clause E2 of the Building Code for every building project. Table 1, summarises the broad scope of E2/AS1. Building consent applications that contain designs that are not covered by this scope cannot rely solely on E2/AS1 to demonstrate compliance with the Building Code. Such designs are referred to as 'alternative solution proposals'. In such cases, the onus is on the building consent applicant/designer to propose another means of complying with Clause E2 of the Building Code and to provide the BCA with the evidence that compliance would be achieved. Once the BCA is satisfied that a proposed design meets the Building Code provisions the design can then be approved as an alternative solution.

If the building consent application fits within the scope of E2/AS1, and E2/AS1 is used as a means of compliance, then the BCA will need to assess the application against the requirements of E2/AS1.

The purpose of this article is not to explain every component of E2/AS1, but is focused on those parts which specifically relate to membrane roof and decks. E2/AS1 also has a specific set of limitations in relation to membrane roofs and decks, and these are summarised in table 2.

Building consent applications that contain design components excluded by these limitations cannot rely solely on E2/AS1 to demonstrate compliance with the Building Code. Again, the onus will be on the consent applicant/designer to propose another means of complying with Clause E2 of the Building Code.

Table 1: Scope of E2/AS1

CONSTRUCTION INCLUDED

E2/AS1 includes:

- Materials, products, and processes contained in E2/AS1 for buildings within the scope of clause 1.1.2 of NZS 3604 Timber Framed buildings (1999) and:
- Buildings up to 3 storeys of timber framing, with a maximum height from ground to eaves of 10 metres; and
- Buildings with a floor plan area limited only by seismic and structural control ioints.

Additionally, some of the specific inclusions covered in clause 1.1.2 of NZ3604 are as follows:

- Buildings should be founded on good ground (see section 1.3, definitions, of NZS 3604).
- Buildings that fall within the building wind zones as described in NZS 3604 and are low, medium, high or very high.
- The floor and roof live loadings applicable to domestic, residential, institutional, and educational buildings fall within the scope of NZ3604 (provided that the floor loading shall not exceed 1.5 kPa for the uppermost floor of 3 storey buildings)

Note: The plan floor area can be unlimited for 1 or 2 storey buildings where all storeys are of timber frame.

CONSTRUCTION EXCLUDED

E2/AS1 does not cover buildings over 3 storeys, (with a maximum height from ground to eaves of 10 metres).

E2/AS1 also specifically excludes:

- Outbuildings (such as garages and other unlined structures).
- Buildings with drained cavities and spread of flame requirements as specified in NZBC C3.3.
- Buildings with drained cavities and acoustic requirements as specified within NZBC G6.

Buildings not founded on good ground, as defined within section 1.3 NZS3604 are not covered. NZS 3604 also specifically excludes:

 Buildings above very high wind zones as described in NZS 3604 (specific engineering design, SED, is required here).

Table 2: Limitations of E2/AS1 in relation to membranes roofs and decks

CONSTRUCTION INCLUDED

Membranes composed of butyl or EPDM installed over plywood substrates for:

- Roofs with a minimum fall of 1.5 degrees (1:40).
- Decks with a minimum fall of 1 degree (1:60)
- Decks with and a maximum area of 40 square metres.
- Internal gutters with a minimum fall of 1 in 100 (see also the exclusion opposite).
- Decks with removable raised surfaces to give level access.

CONSTRUCTION EXCLUDED

All membranes other than butyl rubber and EPDM fall outside E2/AS1.

Other building elements not covered include:

- Decks with steps within the same level of the deck area (except into gutters).
- Decks with integral roof gardens.
- Decks with a downpipe directly discharging to the deck.
- Internal gutters with a minimum fall of 1 in 100, with seams in the gutters closer than 1 metre to an outlet.
- The application of directly-applied wearing or decorative surfaces to membranes (eg, tiled surfaces).
- Deck substrates other than plywood (17mm minimum thickness).

Note: for roof and deck areas over 40m², roof vents will be required. Roof vents are not covered by the Acceptable Solution.

NOTE: Tables 1 and 2 are intended to summarise a number of caveats only. Designers/consent applicants should always refer to the full text of E2/AS1 and NZS 3604.

Specific design and alternative solutions

Buildings, components, or junction details outside the scope of E2/AS1, or which are outside the limitations mentioned in Table 2, will require specific design and are considered alternative solutions to the Compliance Document E2/AS1. Details of specific design have to be provided to the BCA for assessment and approval as part of the building consent process. Further guidance on assessing proposed alternative solutions is contained in the Department's publication: *Means of Establishing Compliance: Alternative Solutions*.

Following the Department's further evaluation of the practice notes mentioned at the start of this article, it was evident that some designers may have believed they were designing to acceptable solution E2/AS1, when in fact they had stepped outside of the scope or limitations of it and were actually proposing an alternative solution for consideration by the BCA. This was likely caused in part by designers being unclear as to the actual scope of E2/AS1 and the exclusions and limitations that apply to it.

Sound compliance decision-making around external membranes

Every building consent application should be assessed on its own merits for Building Code compliance. Blanket policies or approaches to assessing compliance are not always appropriate or consistent with the Building Act. The Department considers that BCAs should not only consider the design that is actually being proposed, but also seek to clarify the actual means of compliance that the consent applicant/designer is using to justify that the proposed building work will comply with the Building Code.

In general terms, any given building consent application might seek to demonstrate compliance with clause E2 by either:

- 1. Fully adhering to the requirements of the Compliance Document E2/AS1.
- 2. Partially or substantially complying with the Compliance Document E2/AS1, but also proposing an alternative solution for one or more components of the design. Additional supporting information to help establish compliance will be needed for any such alternative solution component.
- Not referring to Compliance Document E2/AS1 at all, but using a specific design or alternative solution to demonstrate compliance and providing the supporting information to help establish compliance.

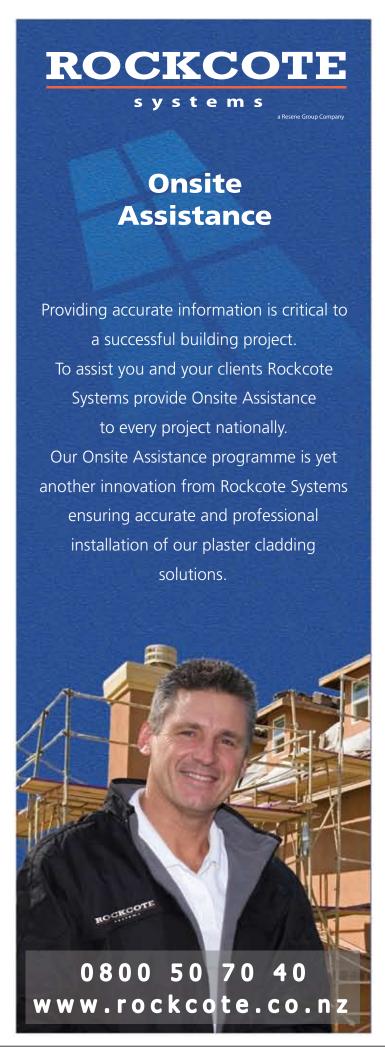
In some cases the particular means of compliance may not be immediately apparent from the plans and specifications provided. It may be worthwhile for BCA staff to check if they are unsure. Designers should also ensure their plans are clear and well detailed on this matter. Doing so will help the BCA make an efficient and informed compliance decision.

The decision-making process then used by BCA staff to check any given building consent application will likely depend upon which compliance pathway the consent applicant/designer is proposing. The flow chart below outlines some key decisions that should be considered when assessing external membranes.

Other information sources specific to external membranes include: BRANZ's Weathertight Solutions Vol. 6: Membrane roofs. This resource can be purchased from BRANZ:

www.branz.co.nz/cms_display.php?sn=70&st=1&pg=2260

The Membrane Group New Zealand Incorporated's Code of Practice (for Torch-on Membrane Systems for Roofs and Decks), available at www.equus.co.nz/tom-cop-301008.pdf





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Applying waviers and modifications under the act

By Inka Gliesche-Humphris, Senior Advisor, Dept of Building & Housing

Waivers and modifications that are provided for under the Building Act 2004 are an opportunity to get good outcomes for all parties in the consent process.

This article offers some guidance on points for building officials in territorial authorities (TAs) to consider when approving building consents subject to a waiver or modification of the Building Code.

Waiver example

A waiver applies when a TA considers and waives the requirement to comply with certain aspects of the Code. For example, an apartment building complex has shared underground car parking, with each car park unit titled to an individual apartment. As separate tenancies, each car park might need to have its own fire wall separating it from adjacent car parks. For practical reasons, and due to the lower risk of spread of fire, the fire design and building consent application proposes a waiver to the requirement under Building Code Clause C3 'Spread of fire' for these unittitled car parks. The TA could, and often does, waive the requirement in these situations.

Modification example

A modification applies when a performance requirement of the Code is modified to meet the functional objectives.

For example, an owner applies for a code compliance certificate (CCC) for a building completed a number of years after the building consent was approved. The performance requirements under Code Clause B2 'Durability' may not be met for the full 15 years from the issue of the CCC, so the TA could agree with the owner to modify this requirement to run from a different date. This way the objective and functional requirements could still be satisfied (recent determinations on weathertightness issues give more detail on how this can work and what is required.)

A waiver or modification of the Building Code may be subject to any conditions that the TA considers appropriate. It is also helpful if the applicant signals early on that they intend to apply for one, so it would be good practice to enable that intention to be flagged early in the process.

While waivers and modifications can sometimes be complicated it is important to get it right as they can contribute to, if used properly, a more sensible application of the rules.

A TA that grants a waiver or modification must notify the Chief Executive of the Department of Building and Housing. This is so the Department can monitor the trends and issues arising over time to determine if the Building Code might need changing in a particular area. Note also that one cannot be granted if it relates to access and facilities for people with disabilities.

For further guidance and advice on waivers and modifications and other Building Act and Regulation issues feel free to call the Department's Consent Authority Capability and Performance Group help-line on 0800 242 243 or email info@dbh.govt.nz, attn: Consent Authority Capability and Performance Group.



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Building consent activity in 2008-2009

By Paul Hobbs, Advisor Dept of Building & Housing

The Department of Building and Housing is continuing to collect, once every four months, information about building consents granted by territorial authorities who are registered building consent authorities (BCAs). This very useful information from the 72 authorities, summarised below for the 2008/09 financial year, confirms the scale and value of ongoing building activity throughout New Zealand.

National building consent numbers for 2008/09 down compared to 2007/08

As shown in the table below, territorial authority BCAs granted almost 86,000 building consents during the year from 1 July 2008 to 30 June 2009. This is an 18 percent drop in numbers compared to the 2007/08 year in which over 104,000 consents were granted. The total combined value of the consented building work during 2008/09 was around \$10.8 billion compared with \$12.8 billion in 2007/08 (representing a drop in value of approximately 15 percent).

Table: Numbers of building consents granted by each registered BCA

Territorial Authority BCA	July 08	Aug-	Sep-	Oct- 08	Nov- 08	Dec- 08	Jan- 09	Feb-	Mar-	Apr-	May-	Jun- 09	Total for 2008/09
Ashburton District	123	84	107	116	68	73	57	68	113	85	72	103	1,069
Auckland City	567	502	521	549	476	234	481	504	611	415	393	415	5,668
Buller District	49	38	29	30	41	34	18	39	41	44	46	57	466
Carterton District	30	30	22	26	39	22	31	26	34	25	23	33	341
Central Hawke's Bay District	46	32	54	44	29	32	8	29	40	54	24	28	420
Central Otago District	77	89	85	64	67	60	40	55	74	62	89	80	842
Christchurch City	545	712	579	519	486	417	320	530	660	547	626	657	6,598
Clutha District	89	62	45	68	55	35	26	37	66	66	69	70	688
Dunedin City	302	300	248	183	173	295	189	176	45	39	79	71	2,100
Far North District	140	105	146	112	108	102	56	85	101	115	134	127	1,331
Franklin District	154	115	103	126	96	116	70	95	122	123	153	125	1,398
Gisborne District	149	97	117	125	71	99	65	62	102	117	153	128	1,285
Gore District	73	37	56	62	35	39	9	37	45	39	79	71	582
Grey District	41	36	74	29	34	78	13	36	37	56	47	54	535
Hamilton City	180	139	161	122	121	154	80	101	128	128	159	153	1,626
Hastings District	161	122	171	134	102	102	99	93	132	137	132	167	1,552
Hauraki District	77	63	42	28	39	37	28	33	34	41	56	38	516
Horowhenua District	105	54	77	37	56	31	29	46	84	68	74	57	718
Hurunui District	50	57	43	19	26	47	16	33	34	36	43	29	433
Invercargill City	188	208	234	230	146	153	118	149	184	148	191	199	2,148
Kaikoura District	16	12	25	15	8	16	9	17	25	9	21	14	187
Kaipara District	73	63	63	74	51	52	32	40	58	74	84	64	728
Kapiti Coast District	132	103	86	78	71	80	63	56	86	86	99	108	1,048
Kawerau District	12	12	8	5	8	8	3	3	10	5	8	11	93
Lower Hutt City	109	93	98	58	95	137	58	60	112	109	120	110	1,159
Mackenzie District	27	18	7	23	31	26	17	21	25	20	16	21	252
Manawatu District	108	51	89	61	48	55	31	47	77	67	109	64	807
Manukau City	276	213	289	260	224	181	151	225	245	181	221	201	2,667
Marlborough District	160	184	201	135	119	139	119	128	167	134	151	172	1,809
Masterton District	61	64	86	77	64	66	42	62	43	57	80	59	761
Matamata-Piako District	102	79	106	78	87	36	57	64	69	81	65	69	893
Napier City	99	104	118	84	83	82	86	71	87	117	104	89	1,124

Nelson City	115	102	112	125	83	115	72	107	145	115	146	153	1,390
New Plymouth District	172	134	151	119	178	160	141	136	180	203	223	214	2,011
North Shore City	251	207	162	235	263	287	183	226	248	258	231	268	2,819
Opotiki District	22	26	22	18	23	14	13	20	17	18	20	12	225
Otorohanga District	48	51	28	38	31	20	30	5	46	29	28	24	378
Palmerston North City	141	121	96	112	101	80	46	93	122	89	112	141	1,254
Papakura District	65	56	53	51	56	52	41	37	20	33	41	34	539
Porirua City	66	71	72	70	61	45	44	45	63	63	73	77	750
Queenstown-Lakes District	125	133	109	125	108	71	88	89	107	106	109	108	1,278
Rangitikei District	45	24	35	30	27	31	26	17	39	33	44	38	389
Rodney District	181	239	165	188	187	146	120	117	152	136	142	170	1,943
Rotorua District	163	138	129	120	92	101	77	130	97	133	116	99	1,395
Ruapehu District	35	32	23	37	28	28	24	22	30	31	23	29	342
Selwyn District	183	176	188	148	154	150	71	108	123	118	159	117	1,695
South Taranaki District	70	66	72	64	45	51	35	32	67	72	96	99	769
South Waikato District	80	60	55	63	77	52	14	40	38	43	52	32	606
South Wairarapa District	52	47	45	33	42	43	32	34	34	48	49	42	501
Southland District	208	158	187	177	164	124	99	103	133	168	152	141	1,814
Stratford District	30	33	25	25	27	23	19	33	36	30	30	33	344
Tararua District	66	60	52	44	50	39	33	44	44	57	63	56	608
Tasman District	134	94	136	135	117	102	82	89	130	133	142	156	1,450
Taupo District	119	115	104	88	89	73	76	95	98	89	116	103	1,165
Tauranga City	217	171	181	178	149	108	113	132	133	167	207	210	1,966
Thames-Coromandel District	116	106	99	126	109	97	48	68	70	73	98	89	1,099
Timaru District	181	137	136	141	147	129	73	111	129	102	151	120	1,557
Upper Hutt City	77	72	63	70	56	36	32	64	71	61	57	56	715
Waikato District	131	100	94	113	87	66	62	64	91	88	101	110	1,107
Waimakariri District	137	117	120	85	104	86	54	95	120	80	98	115	1,211
Waimate District	43	25	28	28	27	23	21	24	25	22	27	24	317
Waipa District	137	145	117	101	111	85	81	71	75	112	113	103	1,251
Wairoa District	23	18	15	16	22	17	9	10	16	11	27	20	204
Waitakere City	137	137	121	126	171	162	159	150	196	171	172	184	1,886
Waitaki District	72	79	60	55	47	48	58	35	68	63	69	77	731
Waitomo District	25	34	19	20	19	18	32	32	30	15	15	14	273
Wanganui District	160	95	101	80	107	101	60	48	108	90	145	98	1,193
Wellington City	287	354	273	220	269	211	162	191	231	269	281	257	3,005
Western Bay of Plenty District	136	125	96	110	105	84	75	71	115	80	118	102	1,217
Westland District	48	27	29	44	44	28	23	23	26	24	42	19	377
Whakatane District	78	51	85	80	52	54	55	69	59	53	78	81	795
Whangarei District	184	106	86	141	186	118	78	110	131	105	114	109	1,468
TOTALS	8,881	7,920	7,834	7,350	6,972	6,316	4,982	6,018	7,354	6,876	7,800	7,578	85,881

Month-by-month figures confirm the national trend downwards in the total number of consents. The majority of BCAs' consent numbers dropped by between 10 and 30 percent. There were 6 BCAs that experienced a drop in numbers greater than 30 percent, with two of those dropping by as much as 42 percent. Four of the 72 BCAs, however, experienced a drop of less than 5 percent and 4 other BCAs actually granted a greater number of consents in 2008/09 than they did in 2007/08.

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