

RE:BUILDING

CANTERBURY CONSTRUCTION NEWSLETTER / MARCH 2013 / ISSUE 3 / FROM WINSTONE WALLBOARDS



RESOURCING UP FOR THE REBUILD

With the summer shutdown complete, all the final work on the Christchurch factory upgrades have now been completed.

This now means that if required the plant can operate to a fully utilised 24/7 operation. This will deliver more than sufficient volume for the forecasted demand needed to cover the rebuild requirements.

Simon Cooper, Christchurch Manufacturing Manager says "As a result of the earthquake rebuild demands, manufacturing capacity has increased by 25 per cent at our Opawa plant. In the last 12 months we have increased our staff numbers by 18 per cent and are looking to add around 20 per cent more over the next year."

Since commencing manufacturing in Christchurch over 50 years ago ongoing developments have occurred in order to service the local market and deliver products designed specifically for New Zealand conditions.

Cooper continues, "Substantial investment in Christchurch continued in 2008 including the construction of a new



warehouse and distribution centre in Opawa. These initiatives in combination with the more recent plant investment show our continuing commitment in Canterbury."

Further investment has also occurred in online assessment tools to calculate bracing performance. These allow users to be onsite, enter information and get suggestions and answers immediately. A repair strategy tool has also been developed for onsite use. Both tools can be downloaded for use with various computer operating systems from www.gib.co.nz/canterburyearthquake.

"These tools will save time, mean less travel between jobs, staff will be more efficient and the whole process will be more productive and allow more customers to be assisted every day," says Hans Gerlich, Technical Manager.

"This will deliver more than sufficient volume for the forecasted demand needed to cover the rebuild requirements."

Given the continuing inquiries for free on-site training, we've committed to having one of our technical team in Christchurch for at least a week every month, and more often if required. This will supplement the in-market work that Hans Gerlich and Richard Hunt will be doing to develop improved repair strategies and building techniques related to earthquake conditions.

For further information relating to the Canterbury earthquakes visit gib.co.nz/canterburyearthquake.

DELIVERED TO SITE (DTS) SERVICE

After many years of experience in the Auckland market the DTS service was successfully introduced into the Christchurch market in November 2011. Month on month growth has resulted in two trucks being added to the fleet.

Our team are highly trained in the handling of GIB® plasterboard. By using this service the building contractor can be assured of product arriving on site, on time, undamaged and placed where

they require it, saving the hassle of doing it themselves.

The Delivered to Site service includes a range of trucks to suit any delivery type. The two main service types are Standard Delivery, which includes a driver and labourer, who will hand-unload the board into the building (up to a maximum of 20 paces from the truck) and a Hiab Service which includes just a driver. Additional labour services are available to carry board further than the 20 paces and for multi storey deliveries, which for some sites can be done in conjunction with the hiab service. Deliveries are scheduled across four delivery rounds a day, with the site contact receiving a text on order placement advising of the delivery window allocated and again on the morning of the delivery.

Should the customer be unsure as to which service type is required, or just wants the site checked for delivery suitability, a free site check service is available with 48-hours notice. As the Christchurch rebuild gains momentum the framework is in place for the site delivery service to grow further as demand dictates.

For further information regarding the Christchurch Delivered to Site service contact your nominated building merchant.



GOVERNMENT PLASTERBOARD TENDER CHRISTCHURCH

In August 2012 the Ministry of Business Innovation and Employment (MBIE) issued a request for proposals for the supply of Plasterboard for the Christchurch Rebuild work for the Earthquake Commission (EQC) and Southern Response Earthquake Services Limited (SRES), the government entity responsible for settling AMI claims.

In January of this year the Economic Development minister announced that Winstone Wallboards was one of the successful tenderers.

Winstone Wallboards is pleased with the outcome of the tender as customers can continue to select and use GIB® plasterboard products and systems, for this EQC and SRES work. GIB® product, for this work, can continue to be sourced in the usual manner through your local merchant.

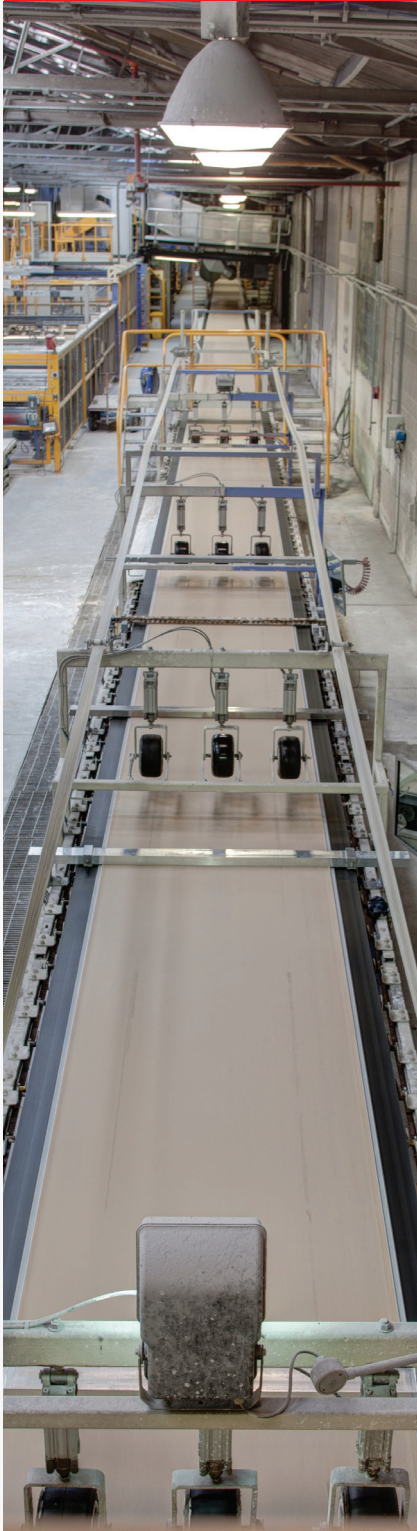
Winstone Wallboards has been heavily involved with the rebuild effort in Christchurch and have worked closely with many industry parties to develop practical solutions and capabilities to address the issues that have arisen. These activities combined with the

development work we have undertaken at our Christchurch manufacturing plant will ensure we will continue to provide service of the highest standard to our customers into the future.

Winstone Wallboards has competed strongly with plasterboard importers in the New Zealand market for years. We continue to be fully committed to retaining our market position through our existing operating model and look forward to working with you to deliver the best result for all concerned.

CHRISTCHURCH TEAM PROFILES

Introducing key members of the Winstone Wallboards team that deliver exceptional service to all our customers in the South Island.



SOUTH ISLAND SALES TEAM.



Richard Scales

Richard Scales has worked within the building industry for the last 30 years. Richard specialized in Fibrous Plaster / GIB® Plasterboard contracting and in the later years was instrumental with the introduction of Rondo® metal ceiling battens & wall partition systems. Richard's role is that of an Area Sales Manager, responsible for the greater Christchurch market, focusing on builders, installers and specifiers.



Bruce Levey

Bruce Levey has been involved in the Canterbury Construction Industry for 45 years. He is an ex builder who specialised in GIB® Plasterboard Fixing and Interior Linings. Bruce has been with Winstone Wallboards for over 10 years and is involved with building merchant and installer relationships in part of Christchurch and the top half of the South Island.



Clara Sumner

Clara brings to the team 20 years of involvement and knowledge in the plasterboard industry with Winstone Wallboards. With a customer base in Canterbury and a wealth of customer service experience Clara looks forward to offering her experience and enthusiasm to the Canterbury market over the exciting years ahead.



Dale Hammett

Dale Hammett is in his eleventh year with Fletcher Building having changed roles 5 years ago joining Winstone Wallboards. Dale is responsible for part of Christchurch and the lower half of the South Island, looking after merchant and builder customers.

TECHNICAL SUPPORT



Hans Gerlich

Hans Gerlich is a Chartered Professional Engineer and Technical Manager for Winstone Wallboards. He has worked in consulting, research and development, product appraisal, local authority building control, and for the last 20+ years in the plasterboard industry with special interest in structural engineering, fire engineering and the regulatory environment. Hans recently supported BRANZ and the University of Canterbury in assessing earthquake damage to interior systems and developing repair strategies for both residential and commercial buildings.



Dr Richard Hunt

Richard Hunt is a structural engineer with a degree in Civil Engineering and a PhD in Engineering. Prior to attending university, Richard worked for a number of years as a draughtsman and assistant engineer. Richard also spent 15 years as a Research Fellow and Senior Lecturer at the University of Auckland. He has had major involvement in the development of many structural timber codes such as NZS3603 and NZS3622. For the past ten years Richard has undertaken a number of roles within Winstone Wallboard. He is presently Technical Manager (Products) and is involved in the development and testing of performance building systems.



Dayle Merson

Dayle Merson, Senior Technical Advisor for Winstone Wallboards, has spent 50 years in the Construction Industry in various roles on commercial and residential projects. He has a firm grounding in the requirements and challenges surrounding a broad range of customers and their individual needs in the New Zealand Building Industry.

CHRISTCHURCH OPERATIONAL TEAM



Rachel Haughton

Rachel Haughton is South Island Distribution Manager, having been involved in logistics for 10 years, and is responsible

for the warehouse and distribution operations on the Christchurch site. She also manages the contracted freight providers for the Freight Into Store and Delivered to Site Service. This role covers the full service from order make up to delivery. Rachel's team totals 20 strong across a two shift operation that services all the South Island.



Simon Cooper

Simon Cooper is the Christchurch Manufacturing Manager for Winstone Wallboards and is responsible for

all production related operations at the Christchurch facility with a team of over 35 full time staff and contractors. Simon has a Bachelor of Mechanical Engineering with First Class Honours and over 17 years experience in New Zealand manufacturing industries including 12 years at Winstone Wallboards where he previously held the position of National Engineering Manager. Simon has had key involvement in all major capital projects for the business over the past decade, most recently leading the capacity growth initiatives at the Christchurch site in support of the earthquake rebuild.



Barbara Tie

Barbara Tie has worked at Winstone Wallboards for 9 years as despatch co-ordinator before

going on maternity leave. Barbara returned recently part-time in a sales administration role, primarily to support the team with sales, event and training coordination, and as an additional point of call for local inquiries.

TECHNICAL HELP; HERE WHEN YOU NEED IT.

With 2013 now well under way and the rebuild kicking on, there is a greater need to get the right information when you need it, so you can do the job right first time. That's why we've invested further to create more resource to help the Canterbury region with the huge task being faced.

We've added an additional technical sales person, Richard Scales, to assist with the end trade interface. He will be supporting Clara Sumner, Bruce Levey and Dale Hammett to continue to deliver the in-market assistance you expect from Winstone Wallboards.

We've also committed Dayle Merson, from our national training team, to be in Christchurch for a minimum of 1 week every month, and more often if required. And we're also adding to our technical team based in Auckland to cater for the projected increase in technical inquiries.

Still maintaining on going additional technical assistance, particularly with the commercial reconstruction, will be Hans Gerlich and Dr Richard Hunt, who will regularly be in Christchurch to assist where they are needed.

Contact the GIB® Helpline during business hours on 0800 100 442

BOOK YOUR TRAINING SESSION NOW



If you'd like to have a FREE on-site GIB® training session simply register your interest in one of the following ways

- Call the GIB® technical Helpline **0800 100 442**
- Register on-line at gib.co.nz/skills-maintenance-request-form/
- Call Barbara Tie **03 337 8302** (Mon, Wed, Thurs)

One of our team will then contact you to arrange a suitable time and discuss topic of interest.



NOVOTEL HOTEL, CATHEDRAL SQUARE, CHRISTCHURCH

Using Control/Relief Joints for
Effective Earthquake Repair.

Project: Novotel Hotel, Christchurch

Architects: Jasmax

Construction Company: Hawkins
Construction

Interior Fitout: Interior Plaster Systems

The first issue of RE:BUILDING included an article looking at low damage solutions for non-structural elements in commercial buildings. The work that Winstone Wallboards and the University of Canterbury had been doing showed that the inclusion of well designed control joints will provide freedom for non-structural elements to accommodate movement of the main structure.

The 13 storey Novotel Hotel in Cathedral Square, Christchurch sustained damage in the 2010 and 2011 earthquakes and presented an opportunity to include control joints effectively in the repair solutions.

Detailed inspections by engineers (Lewis Bradford Consulting Engineers) and architects (Jasmax) revealed the building could be economically repaired and brought up to the required new building standard. The GIB® plasterboard ceilings survived remarkably well given the twisting and shaking the building received. External precast wall panels did not fare so well, necessitating complete replacement including the internal end wall of all bedrooms.



End wall of bedroom showing control/relief joints around perimeter

Damage to the bedrooms consisted of:

- Damage to fixed bedroom joinery due to racking and partition shift.
- Dislodged glass screens due to racking.
- Stress fractured GIB® plasterboard at room corners, with radiating cracks to door, window and a/c register openings.
- Some mid panel and joint cracks where severe movement had occurred. This included the substrate GIB® plasterboard (fire and acoustic rated walls are lined with two layers of GIB® plasterboard)
- Ceiling cracks associated with access panels (bathrooms only)

Following an 'on site' consultation with Hans Gerlich (Winstone Wallboards Ltd) Jasmax recommended a **'future proofing' approach of separating all internal GIB® plasterboard lined planes (walls, ceilings, bulkheads) from the main structure using negative details serving as seismic relief joints.** This is to minimise repairs and ensure rooms can be returned to service quickly should another earthquake event occur.

After discussions with the insurer, the pragmatic approach adopted was simply to seismically isolate the end wall from the inter-bedroom walls, and to disconnect the inter-bedroom walls from the new external precast panels.

Deflection head channels were used to locate wall frame top plates to allow controlled movement in a seismic event. The inter-bedroom walls manage the fire and acoustic performance between bedrooms and have a 25mm seismic gap to the precast external panels. This gap is packed with a compressible fire stop ('Firemaster' Expanding Felt), to manage both the fire and acoustic rating integrity.

The end wall was treated as an independent panel fixed only at floor level and located in a deflection head channel with no connection to the external precast panel or the inter-bedroom walls. Separation from surrounding walls and ceilings, was managed with a shadow bead providing a 10mm seismic joint. Window lining penetrations were similarly provided with a seismic gap concealed with an architrave. All GIB® plasterboard on walls is fixed with a 10mm gap at floor level which is fire stopped with a low modulus fire sealant.

For further information contact the GIB® Technical Helpline 0800 100 442 or visit gib.co.nz/canterburyearthquake-technical and download the bulletin "Gypsum Plasterboard Lined Partitions in Commercial Construction Update".



REPAIRING DAMAGED HOMES: GET THE STRUCTURE FIXED FIRST

Given the wide spread impact of multiple seismic events in the Canterbury region, many initial damage assessments have, by necessity, been brief and often not as thorough as would be desirable.

The sheer volume of damage assessments and the relatively untrained eye of many assessors have meant a focus on cosmetic rather than underlying structural damage.

A more detailed investigation often reveals cosmetic damage to be the consequence and outward sign of underlying structural weaknesses that occurred as a result of the earthquakes. Findings from the post-earthquake damage showed GIB® plasterboard bracing systems performed very

effectively, particularly considering the severity of the earthquakes. However unless structural strength and stiffness are reinstated, cosmetic repairs alone will potentially be susceptible to repeat damage following even relatively minor future events.

There have been reported and anecdotal cases of repairs failing again after subsequent relatively minor earthquakes. Generally in these cases the structure has not been repaired adequately and the damage has either been hidden behind linings, or cracks have been simply filled and painted over. This should not be occurring as the repairs should stand up comfortably if they are carried out in accordance with structural guidelines contained in current codes, industry guidelines and standards.

The illustrations show badly damaged lath and plaster linings which were being repaired by simply hiding the damaged plasterboard.

The correct repair strategy should have consisted of removing the lath and plaster, carrying out bracing calculations, and installing new linings and bracing systems where appropriate.

Winstone Wallboards has guidelines and tools for damage and wall bracing assessment available free of charge at www.gib.co.nz/canterburyearthquake. Tools included are a 'Damage Assessment' App which illustrates different damage types and associated repair strategies, and a 'Wall Bracing' App which permits trained users to quickly carry out a structural assessment to determine appropriate replacement linings and fixing centres.

CHECKLIST FOR REPAIRING GIB® PLASTERBOARD LININGS IN WIND OR EARTHQUAKE DAMAGED PROPERTIES

This checklist will assist trade professionals to reinstate interiors of earthquake or wind damaged residential buildings. Once specific damaged has been identified the following tables give specific recommendations on how to repair.

Failure to adequately reinstate bracing resistance, stiffness and strength is likely to result in cracking or damage of cosmetic repairs following future relatively minor events.

Standard gypsum plasterboard and sometimes special purpose gypsum plasterboard internal linings provide most of the bracing resistance in many light steel and timber framed New Zealand homes. Prior to commencing repairs a bracing assessment of the property must be carried out to determine the location and type of designated bracing elements and the adequacy of bracing resistance. This either involves an assessment of existing bracing plans and calculations or completing a new evaluation (see <http://www.gib.co.nz/bracing>) for bracing design advice and loads). Cosmetic repairs alone may otherwise be vulnerable to damage with any minor future event.

WALLS

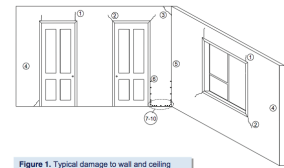


Figure 1. Typical damage to wall and ceiling linings (The numbers shown on Fig. 1 refer to the repair guidelines in the following tables)

Note: The dotted lines indicate where cracking may occur and the dots indicate where fastener stress may occur.

CEILING



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Guidelines to repairing GIB® plasterboard linings (Damage Assessment App)



Repeat damage to cosmetic overlay



GIB® Bracing Calculator

Canterbury Remediation Version

| | |
|----------------------|----------------------|
| Name : | <input type="text"/> |
| Street and Number : | <input type="text"/> |
| Lot and DP Number : | <input type="text"/> |
| City/Town/District : | <input type="text"/> |
| Assessor : | <input type="text"/> |
| Company Name : | <input type="text"/> |
| Date : | <input type="text"/> |

| | |
|--|--|
| Foundation Type : | <input type="text" value="Slab"/> |
| Cladding Weight : | <input type="text" value="Light"/> |
| Roof Weight : | <input type="text" value="Light"/> |
| Room in Roof Space : | <input type="text" value="No"/> |
| Ground Type : | <input type="text" value="Soft Soil"/> |
| Roof Height above Eaves (m) : | <input type="text" value="1.00"/> |
| Building Height to Apex (m) : | <input type="text" value="4.0"/> |
| Ground to Lower Floor (m) : | <input type="text" value="0.2"/> |
| Stud Height (m) : | <input type="text" value="2.7"/> |
| Building Length (m) : | <input type="text" value="8.0"/> |
| Building Width (m) : | <input type="text" value="8.0"/> |
| Building Plan Area (m ²) : | <input type="text" value="60"/> |

Return Period

Earthquake Bracing Demand (BUs) :

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Canterbury GIB® Bracing Calculator App (Wall Bracing App)

