

## REPAIRING LATH AND PLASTER WALLS & CEILINGS

Supplement to GIB® Site Guide – January 2010

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### SCOPE OF USE

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This information bulletin provides general guidelines for assessing and carrying out remedial work to lath & plaster wall and ceiling surfaces following damage sustained after a severe wind or earthquake event.

The information is aimed at;

- Homeowners
- Trades people
- Architectural designers & engineers
- Building Consent Authorities
- Insurance assessors or loss adjusters



*These guidelines are by necessity of a general nature.*

Prior to carrying out remedial work, buildings must be checked for safe entry and working conditions and structural adequacy. Detailed investigation needs to be carried out to establish the extent of damage to the structure and linings. Buildings must be returned to plumb and level before starting work on internal linings.

The lateral bracing strength and stiffness of the structure may have been compromised. For these older type houses, bracing calculations are often not available. It is recommended that a bracing assessment is carried out prior to deciding and commencing repairs. If bracing is not reinstated then there is high probability that any repaired cracks will reappear even after minor events.

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### SAFETY

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Always ensure personal safety and safety of others. Follow Site Safe practices and your company's safety instructions. Be particularly aware of hazards when entering earthquake damaged structures.

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### INTRODUCTION

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Prior to the introduction of plasterboard into NZ in the 1920's, walls and ceilings in timber framed buildings were commonly lined with 'lath and plaster'. Laths are thin strips of wood, typically 10 mm thick and 20 to 25 mm wide, nailed to supporting timber framing, and separated by small gaps of about 5 mm.

When plastered over, the wet plaster is squeezed through the gaps resulting in 'nibs' that hold the set and dry plaster in position. Generally a three coat plaster system was applied consisting of two coats of sand / cement mix followed by a final coat of gypsum plaster to give a smooth finish for direct painting, overlaying with heavy kraft liner paper for painting, or wallpaper. In some situations the plaster may have contained horse hair as a reinforcement and in these cases damage tends to be less severe than unreinforced plaster.

Over the years due to impact or building movement as a result of wind, traffic, or earthquakes, the plaster nibs can break off and ceilings can start to sag or walls become 'drummy'. It is also possible that the laths become detached from the supporting timbers (usually due to the nails/pins rusting). Lath and plaster walls do not offer significant bracing strength and stiffness; particularly after the plaster nibs are broken.

Working out whether lath and plaster is worth fixing or needs replacing depends on the type and extent of damage and associated repair costs.

If access can be gained to roof voids, the condition of lath and plaster ceilings can be readily inspected.

*Note that some older buildings may be protected for historical reasons. It is important that any work conducted in these buildings is done with prior consultation and consent of appropriate Authorities.*

## REPAIR OPTIONS

The three options for repair of Lath & Plaster are:

1. Minor cracks - rake out and restop
2. Some plaster fallout - patch with new plasterboard and make good
3. Major 'drumminess' or damage to plaster or plaster fallout – remove and reline with plasterboard, stop and paint/wallpaper.

### Repairing Minor Cracks

Many older buildings with lath and plaster will have some internal cracks which tend to run through the full depth of the plaster.

Remove any old wallpaper and loose or flaking paint. Scrape out minor cracks in the plaster to a width of 3-5mm using a triangular shaped scraper. Remove all loose material back to 'solid' plaster. Lightly sand before brushing or vacuuming up loose materials then lightly wet the surfaces of the crack before applying GIB® - Cove® Bond, GIB Maxset® or GIB Tradeset®. The first coat simply fills the gaps but should not extend beyond the edges. Scrape back any ridges after the material has set but is still slightly damp and soft. Using a 100mm broad knife apply a 1-2mm thick coat of setting compound centrally over the filled crack and embed GIB® paper tape followed immediately by a thin coat of compound on top. Feather the edges to minimise build up ensuring that a minimum 0.5mm of compound is under & over the tape.

Leave the first 2 coats to dry thoroughly before applying a third very thin coat of a finishing compound such as GIB Trade Finish® which when dry, can be lightly sanded to give a smooth finish for decorating.

### Replacing with Plasterboard

For wall and ceiling areas that feel 'drummy' or have extensive cracking or loose plaster, full replacement with plasterboard is recommended.

Walls – As necessary, carefully remove trims followed by the plaster. If necessary remove laths, straighten or pack out studs, install nogs/dwangs and then line with plasterboard. If the existing scotias, architraves or skirtings need to be retained in place, framing can be packed with timber up to 20 mm in thickness to bring the new lining out to the same face level as the old wall.

Wall Bracing - If bracing is to be reinstated, then the lath and plaster must be removed. A bracing design must be carried out. Install any supplementary framing and bracing panel hold-down fixings before lining. Fix packing timber with 8g x 45 mm long high thread countersunk wood screws at nominal 300 mm centres to studs and plates. Plasterboard is then installed using fasteners with increased length to accommodate the thickness of the packing.

Ceilings – Remove the plaster and fix battens (as necessary with packing) over the lath and into the underlying framing at appropriate centres (See GIB® Site Guide page 43). Consider using GIB® Rondo® clips and battens to level a ceiling. Winstone does not recommend overlay of damaged lath & plaster ceilings, as loadings on plasterboard, fasteners and adhesive may exceed design capacities. The maximum uniform distributed load capacity on plasterboard ceilings is 3 kg/m<sup>2</sup> (see GIB® Site Guide, page 3).

Other factors that may need consideration are existing cornices, architraves and other plaster finishes. Most old pattern mouldings are still available from members of the NZ Fibrous Plaster Association [www.fibrousplaster.org](http://www.fibrousplaster.org)

Further details relating to fixing and finishing of GIB® plasterboard are published in the current version of the GIB® Site Guide available from your building merchant or electronically by visiting [www.gib.co.nz](http://www.gib.co.nz).

### Further Support

Winstone Wallboards Ltd literature and bulletins are the subject of regular review and thus we recommend that readers check our website for current publications. For any further information regarding remedial work relating to plasterboard, please visit our website [www.gib.co.nz](http://www.gib.co.nz) or contact the GIB® Helpline on 0800 100 442.



Note: This information is provided by Winstone Wallboards Ltd as general guidelines. It does not replace specific technical information provided to the market.