GIB®

Tough Systems

Design and Installation Guide

CBI 5113
MAY 2025

NATIONAL SUPPORT

VISIT: Winstone Wallboards Limited
105 Leonard Road, Mt Wellington
Auckland 1060, New Zealand

POST: PO Box 12 256, Penrose,
Auckland 1642, New Zealand

PHONE: +64 9 633 0100

EMAIL: info@gib.co.nz

WEB: gib.co.nz

GIB® HELPLINE

0800 100 442

GIB Toughline® and GIB Toughline® Aqua Substitution Guide

The New Zealand Building Code (NZBC) and architectural requirements can often dictate multiple functionality for a given space. For example, bathroom walls may need wet area linings as well as provide noise and fire separation between tenancies.

GIB Toughline® has been developed to provide not only higher impact performance than GIB® Standard plasterboard, but also fire, noise and bracing resistance, as shown below.

GIB Toughline® Aqua has been specially developed to deliver wet area performance, noise control, as well as impact, fire and bracing resistance.

	GIB® Tough Systems	GIB® Fire Rated Systems	GIB Noise Control® Systems	GIB Ezybrace® Systems	GIB® Wet Area Systems
13mm GIB Toughline® Aqua may substitute for:	13mm GIB Toughline®	13mm GIB Fyreline®	13mm GIB Fyreline®	13mm GIB Braceline®	13mm GIB Aqualine®
13mm GIB Toughline® may substitute for:	13mm GIB Toughline®	13mm GIB Fyreline®	13mm GIB Fyreline®	13mm GIB Braceline®	

Interior finishes that look good for longer

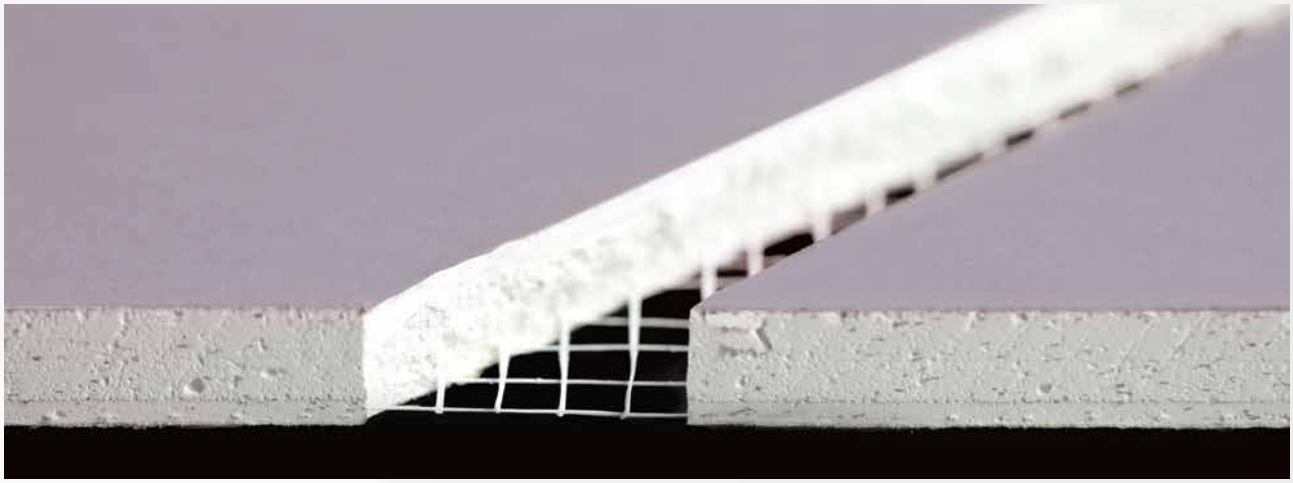
GIB® Tough Systems have been developed to provide improved resistance against accidental impact and wear and tear in internal wall areas subject to medium–high pedestrian traffic or where equipment use is expected. Although significantly reduced costs of repair are anticipated, there is no safeguard against damage from deliberate abuse such as vandalism or attack of interior surfaces with heavy tools or instruments.

GIB® TOUGH SYSTEMS:

- Suitable for residential & non-residential applications
- Provides improved impact resistance in high traffic areas
- Reduces repair costs associated with wear and tear

GIB® TOUGH SYSTEMS PLASTERBOARD

GIB Toughline® and GIB Toughline® Aqua are 13mm thick high density paper-faced plasterboard lining materials. They are significantly denser than GIB® Standard plasterboard. As well as fibreglass fibres contained within the plaster core, both GIB Toughline® and GIB Toughline® Aqua have a reinforcing fibreglass crenette mesh embedded inside the board core. This gives the board increased impact resistance and has the added benefit of simplifying the repair process in the event of damage.



CONTENTS

GIB® TOUGH SYSTEMS

Winstone Wallboards accepts no responsibility if GIB® Tough Systems are not installed in strict accordance with the instructions contained in this publication. Although the product and system specifications offered in this literature do not protect against deliberate abuse or eliminate damage in normal use, they provide improved resistance to wear and tear and accidental impacts.

BEWARE OF SUBSTITUTION

The performance of GIB® Tough Systems is susceptible to design detailing and specification. Where specified, it is important that only GIB® branded products are used in the systems described in this publication. No responsibility will be accepted for alternative manufacturer's product.

CUSTOMISED DESIGN SOLUTIONS

The systems detailed in this publication cover a range of common situations. For projects where specific performance is required please contact our technical team on 0800 100 442.

SURFACE FINISH PROPERTIES

GIB Toughline® and GIB Toughline® Aqua plasterboard sheet materials have been tested in accordance with ISO 5660 reaction to Fire Tests – heat release, smoke production and mass loss rate Parts 1 and 2 and achieve a Group 1-S Classification.

Note that this classification applies to the plasterboard product without paint or wallpaper finish. The supplier or manufacturer of any selected surface finish must be contacted for their particular product classification when applied over the relevant substrate.

USE ONLY THE CURRENT SPECIFICATION

This publication supersedes GIB® Tough Systems November 2014. This publication may be superseded by a new publication at any time. Winstone Wallboards accepts no responsibility for reliance on superseded publications. Call 0800 100 442 or visit gib.co.nz to confirm the currency of this publication.

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Table 1: GIB Toughline® and GIB Toughline® Aqua Sheet Sizes

Product	Thickness (mm)	Width (mm)	2400	2700	3000	3300	3600	4200	4800	6000	Max. kg/m²
GIB Toughline®	13	1200	▨	▨	▨		▨				11.9
GIB Toughline® Aqua	13	1200	▨	▨	▨						11.9

SUGGESTED USES FOR GIB TOUGHLINE® AND GIB TOUGHLINE® AQUA

When installed in accordance with the GIB® Tough Systems specifications, GIB Toughline® and GIB Toughline® Aqua offer increased impact resistance over other paper-faced gypsum plasterboards, resulting in a reduction in maintenance and repair.

This means that GIB Toughline® and GIB Toughline® Aqua are suited to interior high-traffic areas such as commercial hallways, offices, meeting rooms, classrooms, patient rooms and communal areas or residential hallways and garages.

GIB Toughline® and GIB Toughline® Aqua are also commonly used as an interior lining for prisons and mental care facilities.

Whilst a full height installation of 13mm GIB Toughline® or GIB Toughline® Aqua provides optimum impact performance, you may wish to at least consider horizontal installation of 13mm GIB Toughline® or GIB Toughline® Aqua boards for the lower half of a wall (to dado height) with horizontal installation of other 13mm GIB® plasterboards.

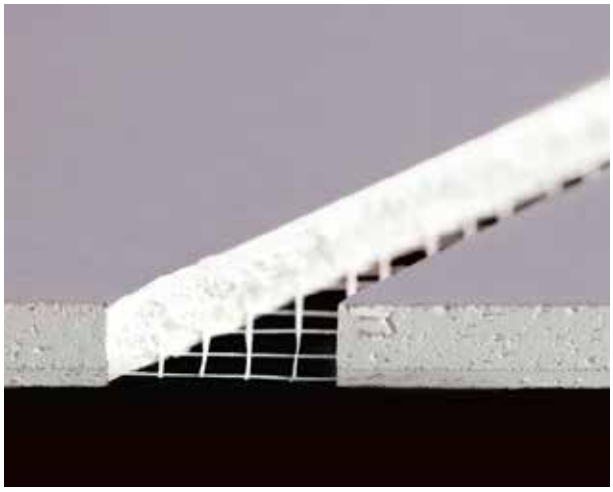


Fig 1: Fibreglass mesh embedded inside the back face of the sheet

GIB® TOUGH SYSTEMS DESIGN CONSIDERATIONS

GIB® TOUGH SYSTEMS PERFORMANCE

To assess the impact resistance of GIB Toughline® and GIB Toughline® Aqua, comparative hard body and soft body impact tests were performed.

HARD BODY IMPACT

Hard body impact tests simulate loads resulting from hard objects, such as sporting equipment (balls and rackets) or trolleys hitting walls.

A standardised hard-body impact test includes a 25mm ball bearing being dropped from a set height on wall lining materials, and results in an impact energy of 2 joules. This simulates an impact greater than that caused by a briefcase corner hitting a wall at walking pace.

When this test was undertaken on GIB Toughline® and GIB Toughline® Aqua the resulting indentation was only approximately 0.4mm. When this test was repeated with GIB® Standard the indentation was approximately 1mm.

SOFT BODY IMPACT

Tests representing soft human body impact are based on the ISO Standard 7892:1988 test using a large 50 kg leather bag filled with glass beads. The bag is allowed to swing like a pendulum and by varying the drop height, different impact energies are simulated. The test is continued until the lining is penetrated.

In real life situations, a hard kick to a wall imparts 60 joules of energy and a male shoulder impacting a wall imparts 120 joules.

When this test was undertaken on GIB Toughline® and GIB Toughline® Aqua it took approximately 250 joules to break through. When this test was repeated with GIB® Standard plasterboard it required approximately 100 joules for complete penetration.

DURABILITY

When installed and maintained in normal conditions of dry internal use GIB Toughline® and GIB Toughline® Aqua have a serviceable life in excess of 50 years.

HAZARDOUS BUILDING MATERIALS

At no stage during handling, installation, or service life does GIB Toughline® or GIB Toughline® Aqua constitute a health hazard. Dust resulting from sanding of stopping compounds may be a respiratory irritant and the use of a suitable face mask is required.

AIRBORNE AND IMPACT SOUND

GIB Toughline® and GIB Toughline® Aqua can be used to provide Sound Transmission Class (STC) ratings and may substitute for 13mm GIB Fyreline® in GIB Noise Control® Systems. For details see the GIB Noise Control® Systems literature, contact the GIB® helpline on 0800 100 442 or visit gib.co.nz

FRAMING

Framing dimensions, spacings and treatment are to comply with NZS 3604: 2011 or specific engineering design.

Framing moisture content at time of lining shall not exceed 18%.

Winstone Wallboards recommends a lower moisture content (12% or less) if air conditioning, heat pumps or central heating are to be installed.

Space studs at 600mm centres maximum, with nogs at 1200mm maximum for horizontal or vertical fixing.

Provide solid framing behind all sheet joints.

LINING

Install GIB Toughline® and GIB Toughline® Aqua horizontally or vertically leaving a 5 to 10mm gap at floor level. Include a damp proof course between the metal bottom track and the concrete floor. Sheet joints are touch fitted.

FASTENERS

Minimum 25mm x 6g GIB® Grabber® Self Tapping drywall screws placed at 300mm centres to all studs*.

Start fasteners 50mm from sheet corners and place them 12mm from sheet edges. Use daubs of GIBFix® One or GIBFix® All-Bond adhesive at 300mm centres to intermediate studs and nogs. Do not use screws or nails in the same position as the adhesive.

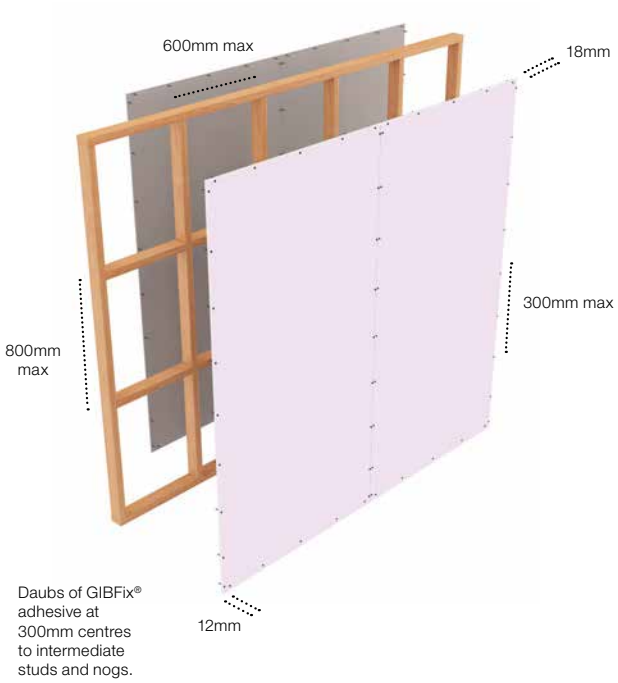
**Note: When fire resistance, noise control or bracing is required, fastener type and centres may differ and must take precedence.*

JOINTING

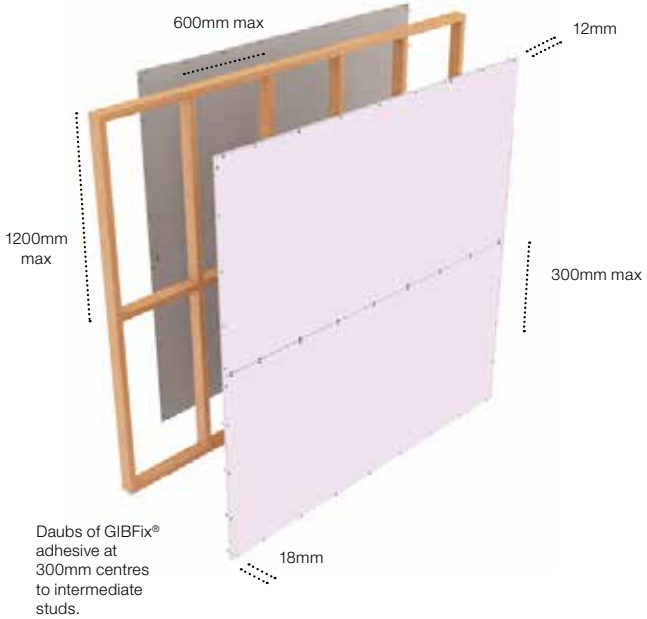
Sheet jointing is in accordance with the GIB® Site Guide using GIB® Paper Tape or GIB RocTape®. Setting compounds for the first and second coats such as GIB Tradeset® or GIB MaxSet®. For the third coat, use an air drying compound such as GIB Trade Finish®.

Use GIB® No-Coat® trims for all external corners for high impact resistance and reduction in chips and cracks. More information on jointing can be found on page 9.

VERTICAL FIXING – TIMBER FRAME



HORIZONTAL FIXING – TIMBER FRAME



FRAMING

Steel frames for GIB® Tough Systems are recommended to have no less than nominally 90 x 34 x 0.75mm lipped studs and 90 x 30 x 0.75mm tracks.

Space studs at 600mm centres maximum with nogs at 1200mm maximum for horizontal lining fixing.

Provide solid framing behind all sheet joints.

The maximum recommended height for these framing details is 3000mm. For higher walls specific engineering design is required.

When fire resistance is required, appropriate expansion tolerance must be provided at the top of the studs. Consult the relevant GIB® Fire Rated Systems specification for further detail.

LINING

Install GIB Toughline® and GIB Toughline® Aqua horizontally or vertically leaving a 5mm to 10mm gap at floor level. Include a damp proof course between the metal bottom track and the concrete floor. Sheet joints are touch fitted.

FASTENERS

Minimum 25mm x 6g GIB® Grabber® Self Tapping drywall screws placed at 300mm centres to all studs*.

Start fasteners 50mm from sheet corners and place them 12mm from sheet edges. Use daubs of GIBFix® One or GIBFix® All-Bond adhesive at 300mm centres to intermediate studs and nogs. Do not use screws or nails in the same position as the adhesive.

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JOINTING

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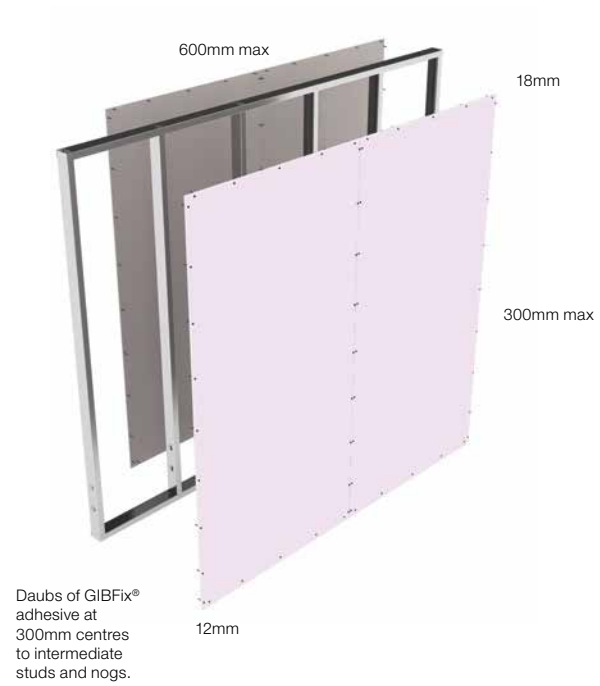
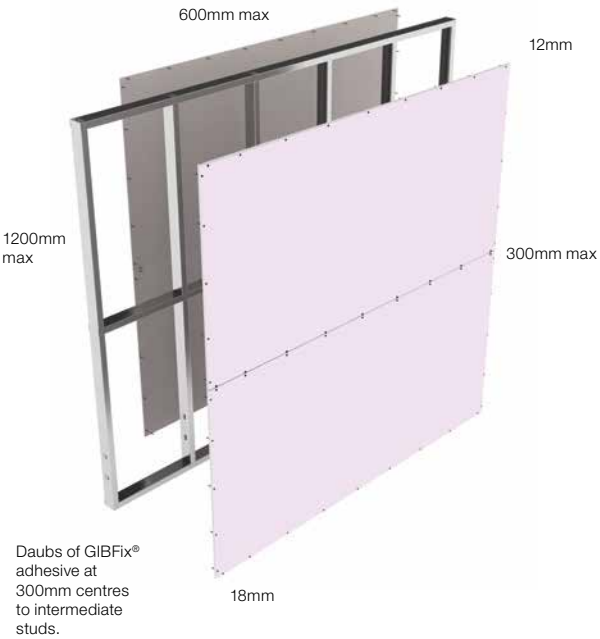
Use GIB® No-Coat® trims for all external corners for high impact resistance and reduction in chips and cracks. More information on jointing can be found on page 9.

VERTICAL FIXING – STEEL FRAME



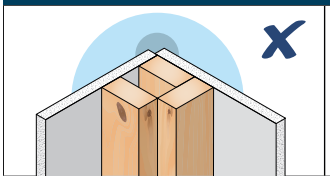
HORIZONTAL FIXING – STEEL FRAME



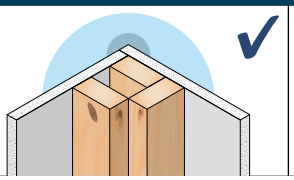
INSTALLATION

Installation of linings and framing details must be in accordance with the GIB® Site Guide and good trade practice. To achieve maximum impact performance on external corners, it is critical that linings are cut and fixed in a manner that forms a perfect 90 degree angle. Any finishing trim installed over a void will be prone to deformation at even low levels of impact. Total support of the trim by the substrate ensures maximum impact resistance.

INSTALLATION DETAILS



Voids create weak impact spots



Fix linings snug at corners

TRIMS

Comparative impact testing of different trims has shown GIB® No-Coat® to outperform other options by a significant margin. Refer to the GIB® Site Guide for further details.

GIB® No-Coat® trims are engineered to withstand:

– Minor frame movement

– Settling

– Seismic movement

– Temperature variation

GIB® No-Coat can be used on any off-angles as it flexes to any internal or external corner angles, i.e. from 90 to 270 degree angles, and thus is particularly useful for raking ceilings.

The paper finish:

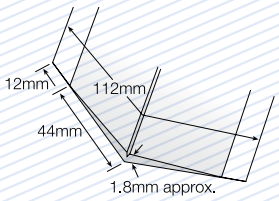
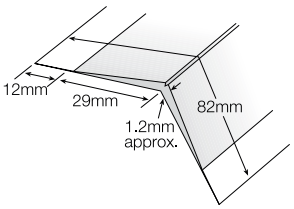
– Matches the plasterboard paper

– Has good wet strength to avoid paper roll even when the compound is overworked

– Has good scuff and sanding resistance.

It is bedded in with the joint compound, eliminating mechanical fastening to the frame and thus reducing the risk of frame movement transferring to the joint and causing cracks or fastener head to show.

Table 2: GIB® No-Coat® High Impact Corner Finishing System

SYSTEM	DIAGRAM	DESCRIPTION
56mm leg		Suitable for all off-angles Ultra-thin edge for 1-step installation and easy finishing Minimises risk of cracking Perforated edges allow faster drying Available in 30m rolls. Cut to length as required Accommodates minor substrate movement
41mm leg		Suitable for all off-angles Ultra-thin edge for 1-step installation and easy finishing Minimises risk of cracking Perforated edges allow faster drying Available in 30m rolls. Cut to length as required Accommodates minor substrate movement

FINISHING COMPOUNDS

Setting joint compound sets by chemical reaction with water and is much harder than an air drying compound. The use of GIB® Paper Tape or GIB RocTape® and the following GIB® joint compounds are recommended for best impact resistance. Refer to the GIB® Site Guide for further detail.

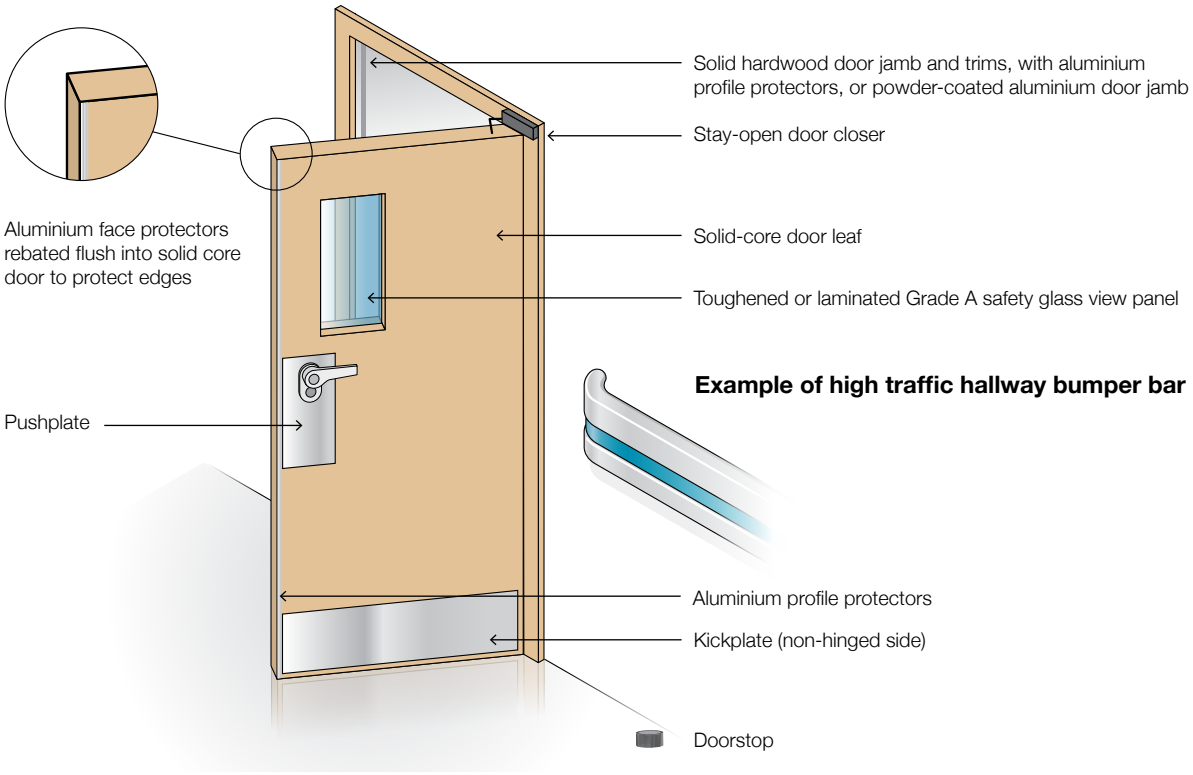
FIRST AND SECOND COATS	TOP COAT
	

OTHER COMPONENTS

Designing interiors for increased wear and tear and reduced maintenance also includes considering other components such as doors, solid corner protectors and/or appropriate crash or hand rails to direct traffic away from wall surfaces.

GIB® TOUGH SYSTEMS DETAILING

Example of good door detailing in a high traffic area



PAINT FINISHES

The resistance to surface abrasion, paint chipping and 'burnishing' is highly dependent on the choice of paint system. There are significant differences between manufacturers, paint types and coating thickness. Consult your paint supplier before selecting the most suitable paint finish for your particular application. There are many advanced water-borne paint systems with enhanced mark and abrasion resistance.

Everyday visible dirt marks are often associated with poor wear and tear performance and should be cleaned with mild detergent cleaning solution and a soft sponge. For more difficult marks and stains contact the manufacturer of the paint system.

LIGHTING, COLOUR, GLOSS AND TONE

Surface gloss levels, smoothness, colour & tone will influence the visibility of even minor imperfections. High gloss levels, dark tone colours and smooth finishes will increase visibility of any imperfections.

'Critical light' defined as 'light projected across a surface at a low angle of incidence' will also strongly influence visibility of blemishes.

Avoid long un-interrupted wall or ceiling surfaces, particularly when glancing light is present. Include regular visual breaks such as control joints. Where openings occur regularly, extend jamb lines from floor to ceiling.

SUBSTITUTION

GIB® Tough Systems are not generic. Where specified, GIB® branded components must be used when specifying and installing GIB® Tough Systems. Substitution is not in accordance with the instructions contained in this publication.

TRADEMARKS

The names GIB®, GIB Curveline® GIB Fyreline®, GIB Ultraline®, GIB Toughline®, GIB Braceline® GIB Noiseline®, GIB Aqualine®, GIB Weatherline®, GIB Tradeset®, GIB Plus 4®, GIB-Cove®, GIB Lite Blue®, GIBFix®, GIB® Quiet Stud®, GIB Rail®, GIB Barrierline®, GIB X-Block®, GIB Fire Soundseal®, GIB Clip®, the colour mauve for GIB Toughline®, the colour blue for GIB Braceline® GIB Noiseline®, the colour pink for GIB Fyreline®, the colour green for GIB Aqualine® and the shield device are registered trademarks of Fletcher Building Holdings Limited.

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SUSTAINABILITY

GIB® plasterboards includes a non-toxic natural gypsum core which can be recycled into a range of compost and agricultural products.

GIB Toughline® and GIB Toughline® Aqua includes a reinforcing fibreglass crenette mesh embedded inside the board core for improved impact resistance. Recycling providers may not accept GIB Toughline® and GIB Toughline® Aqua due to the embedded mesh. Please check with your recycling provider.

No harmful dust is created during the onsite cutting and installation process of GIB® Plasterboard.

For more information visit www.gib.co.nz/sustainability

GIB®

FOR MORE INFORMATION VISIT

gib.co.nz

OR CALL THE GIB® HELPLINE

0800 100 442