

THERMOBAR 344 FIRE RETARDANT LIGHT DIFFUSER FOIL INSULATION

APPLICATION AND INSTALLATION

Product Description **THERMOBAR 344 FIRE RETARDANT LIGHT DIFFUSER FOIL INSULATION** is a high strength insulation and sarking material, consisting of a layer of highly burnished aluminium foil bonded with flame retardant adhesive to a white woven polymeric mesh.

Product Advantage **THERMOBAR 344** whilst being completely inert and unaffected by moisture, provides extreme tear resistance. **THERMOBAR 344** provides a quality white aesthetic finish increasing light diffusion and reflection when applied with the white surface facing down.



FLAMMABILITY INDEX OF ≤ 5
AS1530: PART 2 1993

NOTE: It can also be used in reverse (foil facing down), which will provide an inert surface against all types of roofing.

THERMOBAR 344 should be supported by **Thermakraft Safety Mesh** 300mm x 150mm or on hexagonal netting 50mm or 75mm.

THERMOBAR 344 can be used as a vapour barrier and improve thermal performance if installed and taped on the warm side of bulk insulation. (Bulk insulation available in 1200mm widths by 60mm, 80mm, 90mm, 120mm, 130mm and 145mm).

Use **Thermakraft Pure Foil Self Adhesive Tape No. 403F**.

Applications Roofing

THERMOBAR 344 is ideal for a commercial roof and wall sarking. **THERMOBAR 344** may be laid vertical i.e. from gutter to ridge or laid horizontally weatherboard fashion from gutter. Ensure minimum 150mm lap for either method.

If used on its own as a vapour control layer or for thermal insulation, **THERMOBAR 344** should be installed with an air gap separating it from roof cladding. Refer the NZ Metal Roofing Manufacturers (MRM) Code of Practice.

Wall

Lay **THERMOBAR 344** wallpaper fashion from top plate to bottom plate. Maintain tension during the fixing, ensuring a tight smooth finish. Minimum lap for both walls and roof is 150mm. Where air conditioning is to be installed use **Thermakraft Pure Foil Self Adhesive Tape No. 403F** to tape laps.

Farm Buildings

THERMOBAR 344 provides insulation as well as a clean hygienic white surface facing down for implement, packing and storage sheds.

Animal Sheds

THERMOBAR 344 use with white surface facing down. This will provide protection to the whole roof structure from corrosive effects due to animal excrement (i.e. piggeries, cow barns, poultry) and boiler sheds. It is recommended to use 150mm lap. All joins must be taped using **Thermakraft Pure Foil Self Adhesive Tape No. 403F**. If taping from the underside use **Thermakraft White P.V.C. Tape**, 48mm wide.

Control of Condensation

In climatic regions where condensation risks are high, such as cold or high humidity areas, care needs to be taken in specifying the correct design and installation to prevent moisture build-up in the roof cavities.

Factors which adversely affect the condensation risk in roofing systems include;

- Humid, and/or cold climatic regions
- Warm/Skillion roof construction
- Low roof cavity air volume and restricted air movement
- Omitting Vapour Control Layers
- Ceiling penetrations and entry of warm air into roof cavities
- Occupancy activities which have high moisture loading on conditioned spaces
- Low pitched roof
- Bulk insulation
- Building structures ability to naturally dry Construction Moisture

Skillion and Warm Roof Construction are particularly sensitive to moisture accumulation and the design and installation of roof construction needs to take into account the higher condensation risks. Refer MRM Code of Practice for details.

Roll Dimensions

1350mm x 75m = 100m²

1350mm x 56m = 75m²

1350mm x 38m = 50m²

THERMOBAR 344 FIRE RETARDANT LIGHT DIFFUSER FOIL INSULATION

TECHNICAL SPECIFICATIONS

Durability

THERMOBAR 344 FIRE RETARDANT LIGHT DIFFUSER FOIL INSULATION will meet the performance requirements of NZBC Clauses B2, Durability (B2.3.1[b] 15 years), E2 External Moisture E2.3.2, F2 Hazardous Building Materials F2.3.1, providing:

- it is not damaged
- installed in accordance to the "APPLICATION and INSTALLATION GUIDELINES"
- it is covered within 24 hours
- installed to the Roofing Code of Practice
- installed by or under guidance of Licensed Building Practitioners
- it has not come into contact with wet concrete or other lime based products

Physical Properties

Tested to AS/NZS 4200:1994
ASTM C-445

Reflectivity of Foil Surface 0.95
Emissivity of Foil Surface 0.05
Tensile (MD) >13.0 kN/m (extra heavy duty)
Tensile (CD) >10.5 kN/m (extra heavy duty)
Edge tear greater than 90 N (extra heavy duty)

Nominal Mass

104 gsm

Flammability Index

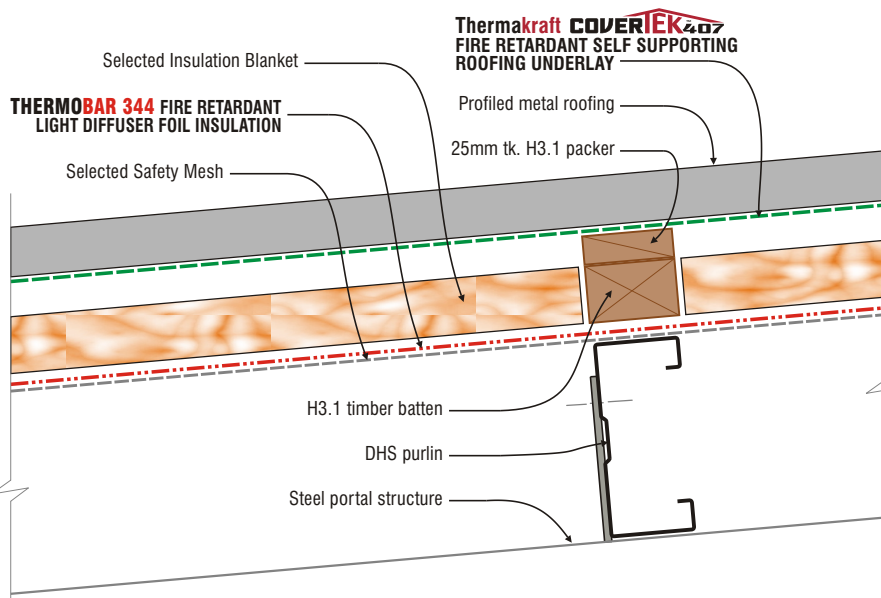
AS1530 Part 2
Flammability Index ≤5

THERMOBAR 344
FIRE RETARDANT
LIGHT DIFFUSER
FOIL INSULATION

Profiled metal wall cladding

DHS purlin

INDUSTRIAL APPLICATION ONLY



The recommendations contained in Thermakraft's literature are based on good building practice, but are not an exhaustive statement of all relevant information and are subject to any conditions contained in the Warranty. All product dimensions and performance claims are subject to any variation caused by normal manufacturing process and tolerances. Furthermore, as the successful performance of the relevant system depends on numerous factors outside the control of Thermakraft (for example quality of workmanship and design), Thermakraft shall not be liable for the recommendations in that literature and the performance of the Product, including its suitability for any purpose or ability to satisfy the relevant provisions of the Building Code, regulations and standards.



BRANZ Appraised

Appraisal No. 918 [2016]

THERMAKRAFT COVERTEK 403 PLUS WALL UNDERLAY

Appraisal No. 918 [2016]

Amended 23 February 2017



BRANZ Appraisals

Technical Assessments of
products for building and
construction.



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Product

- 1.1 Thermakraft Covertek 403 Plus Wall Underlay is a fire retardant flexible synthetic wall underlay for use under direct fixed and non-direct fixed wall cladding on timber and steel framed buildings. The product consists of a micro-porous water resistant film ultrasonically bonded between two layers of non-woven spun-bonded polyolefin, and is coloured white.

Scope

Flexible Wall Underlay

- 2.1 Thermakraft Covertek 403 Plus Wall Underlay has been appraised for use as a flexible wall underlay for timber and steel framed buildings within the following scope:
- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area; and,
 - with direct fixed absorbent and non-absorbent wall claddings; or,
 - with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; or,
 - with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1 for timber framed buildings or to a specific design for steel framed buildings; and,
 - situated in NZS 3604 Wind Zones up to and including Very High.

Use over Rigid Wall Underlay

- 2.2 Thermakraft Covertek 403 Plus Wall Underlay has been appraised for use as a flexible wall underlay over rigid wall underlays on timber and steel framed buildings within the following scope:
- the scope limitations of NZBC Acceptable Solution E2/AS1, Paragraph 1.1 with regards to building height and floor plan area; and,
 - with absorbent and non-absorbent wall claddings installed over an 18 mm minimum drained cavity; and,
 - with masonry veneer in accordance with NZBC Acceptable Solution E2/AS1 for timber framed buildings or to a specific design for steel framed buildings; and,
 - situated in NZS 3604 Wind Zones up to and including Extra High.

Specific Design

- 2.3 Thermakraft Covertek 403 Plus Wall Underlay has also been appraised for use on buildings subject to specific weathertightness design. Building designers are responsible for the building design and for the incorporation of Thermakraft Covertek 403 Plus Wall Underlay into their design in accordance with the declared properties and the instructions of Thermakraft Limited.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, Thermakraft Covertek 403 Plus Wall Underlay, if used, designed, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet, or contribute to meeting the following provisions of the NZBC:

Clause B2 DURABILITY: Performance B2.3.1 [a], not less than 50 years, B2.3.1 [b], 15 years and B2.3.2. Thermakraft Covertek 403 Plus Wall Underlay meets these requirements. See Paragraphs 9.1 and 9.2.

Clause C3 FIRE AFFECTING AREAS BEYOND THE FIRE SOURCE: Performance C3.4 [c]. Thermakraft Covertek 403 Plus Wall Underlay meets this requirement. See Paragraph 10.1.

Clause E2 EXTERNAL MOISTURE: Performance E2.3.2. When used as part of the cladding system, Thermakraft Covertek 403 Plus Wall Underlay will contribute to meeting this requirement. See Paragraphs 12.1 and 12.2.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. Thermakraft Covertek 403 Plus Wall Underlay meets this requirement and will not present a health hazard to people.

Technical Specification

- 4.1 Thermakraft Covertek 403 Plus Wall Underlay is a synthetic building underlay for use under wall claddings. The product consists of a micro-porous water resistant film laminated between two layers of non-woven spun-bonded polyolefin. Thermakraft Covertek 403 Plus Wall Underlay is coloured white on the top and bottom faces.
- 4.2 The product is supplied in rolls 1.350 m wide x 18.6 m, 37.0 m and 55.0 m long. The product is printed with the Thermakraft Covertek 403 Plus logo repeated along the length of the roll. The rolls are wrapped in clear polythene film.

Accessories

- 4.3 Accessories used with Thermakraft Covertek 403 Plus Wall Underlay which are supplied by the installer are:
- **Fixings** - staples, clouts, screws or proprietary underlay fixings, or other temporary fixings to attach the wall underlay to the framing.
 - **Wall underlay support** - polypropylene strap, 75 mm galvanised mesh or galvanised wire, or vertical cavity battens where required to support the wall underlay in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5.

Handling and Storage

- 5.1 Handling and storage of the product, whether on or off site, is under the control of the installer. The rolls must be protected from damage and weather. They must be stored on end, under cover, in clean, dry conditions and must not be crushed.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for Thermakraft Covertek 403 Plus Wall Underlay. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

- 7.1 Thermakraft Covertek 403 Plus Wall Underlay is intended for use as an alternative to conventional building papers which are fixed over timber or steel framed walls in order to limit the entry of wind into building cavities, and to act as a secondary barrier to wind-driven rain. Refer to Table 1 for material properties.
- 7.2 The material also provides a degree of temporary weather protection during early construction. However, the product will not make the building weathertight and some wetting of the underlying structure is always possible before the building is closed in. Hence, the building must be closed-in and made weatherproof before moisture sensitive materials such as wall or ceiling linings and insulation materials are installed.
- 7.3 Thermakraft Covertek 403 Plus Wall Underlay must not be exposed to the weather or ultra violet light for a total of more than 42 days before being covered by the wall cladding.
- 7.4 Thermakraft Covertek 403 Plus Wall Underlay is suitable for use as an air barrier where walls are not lined, such as attic spaces at gable ends, in accordance with NZBC Acceptable Solution E2/AS1, Paragraph 9.1.4 [c].
- 7.5 In cavity installations where the cavity battens are installed at greater than 450 mm centres, the wall underlay must be supported between the battens to prevent the underlay bulging into the cavity space when bulk insulation is installed in the wall frame cavity in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.8.5. Wall underlay support options include polypropylene strap, 75 mm galvanised mesh or galvanised wire, or vertical cavity battens.

Table 1: NZBC E2/AS1 Table 23 (NZS 2295) Requirements

NZBC E2/AS1 Table 23 (NZS 2295) Wall Underlay Properties	Property Performance Requirement	Actual Property Performance
Absorbency	$\geq 100 \text{ g/m}^2$	Pass
Vapour Resistance	$\leq 7 \text{ MN s/g}$	Pass
Water Resistance	$\geq 20 \text{ mm}$	Pass
pH of Extract	≥ 5.5 and ≤ 8	Pass
Shrinkage	$\leq 0.5\%$	Pass
Mechanical	Edge tear and tensile strength	Edge tear [Average]: Machine direction = 217 N Cross direction = 104 N Tensile strength [Average]: Machine direction = 4.57 kN/m Cross direction = 2.63 kN/m
Air Barrier	Air resistance: $\geq 0.1 \text{ MN s/m}^3$	Pass. Thermakraft Covertek 403 Plus Wall Underlay can be used as an air barrier.

Claddings

- 7.6 Thermakraft Covertek 403 Plus Wall Underlay is suitable for use under wall claddings as a wall underlay as called up in NZBC Acceptable Solution E2/AS1, Table 23 on timber framed buildings, including non-absorbent wall claddings such as vinyl and metal-based weatherboards in direct fixed situations. Thermakraft Covertek 403 Plus Wall Underlay is suitable for use under cavity based wall claddings as an absorbent synthetic wall underlay as called up in NZS 2295, Table 2.4 on steel framed buildings.

Stucco Plaster

- 7.7 Thermakraft Covertek 403 Plus Wall Underlay is suitable for use as a non-rigid backing material for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.5.1. The underlay must be supported with 75 mm galvanised mesh or plastic tape or wire at 150 mm centres run across the cavity battens to limit deflection to a maximum of 5 mm.
- 7.8 Thermakraft Covertek 403 Plus Wall Underlay may also be used as a slip layer over rigid backings for stucco plaster in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.3.3.1 [b].

Structure

- 8.1 Thermakraft Covertek 403 Plus Wall Underlay is suitable for use in all Wind Zones of NZS 3604 up to, and including, Very High when used as a stand-alone flexible wall underlay, and all Wind Zones of NZS 3604 up to, and including, Extra High when used as an overlay for rigid wall underlays.

Durability

- 9.1 Thermakraft Covertek 403 Plus Wall Underlay meets code compliance with NZBC Clause B2.3.1 [a], not less than 50 years for wall underlays used where the cladding durability requirement or expected serviceable life is not less than 50 years, e.g. behind masonry veneer, and code compliance with NZBC Clause B2.3.1 [b], 15 years for wall underlays used where the cladding durability requirement is 15 years.

Serviceable Life

- 9.2 Provided it is not exposed to the weather or ultra-violet light for a total of more than 42 days, and provided the exterior cladding is maintained in accordance with the cladding manufacturer's instructions and the cladding remains weather resistant, Thermakraft Covertek 403 Plus Wall Underlay is expected to have a serviceable life equal to that of the cladding.

Control of Internal Fire and Smoke Spread

- 10.1 Thermakraft Covertek 403 Plus Wall Underlay has an AS 1530 Part 2 flammability index of not greater than 5 and therefore meets the requirements of NZBC Acceptable Solutions C/AS2 to C/AS6, Paragraph 4.17.8 b], for the surface finish requirements of suspended flexible fabric used as an underlay to exterior cladding that is exposed to view in occupied spaces. It may therefore be used with no restrictions in all buildings.

Prevention of Fire Occurring

- 11.1 Separation or protection must be provided to Thermakraft Covertek 403 Plus Wall Underlay from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of NZBC Acceptable Solutions C/AS1 to C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible materials from heat sources.

External Moisture

- 12.1 Thermakraft Covertek 403 Plus Wall Underlay must be used behind claddings that meet the requirements of the NZBC, such as those covered by NZBC Acceptable Solution E2/AS1, or claddings covered by a valid BRANZ Appraisal.
- 12.2 Thermakraft Covertek 403 Plus Wall Underlay, when installed in accordance with the Technical Literature and this Appraisal will assist in the total cladding systems compliance with NZBC Clause E2.

Installation Information

Installation Skill Level Requirements

- 13.1 Installation must always be carried out in accordance with the Thermakraft Covertek 403 Plus Wall Underlay Technical Literature and this Appraisal by, or under the supervision of a Licensed Building Practitioner with the relevant Licence Class.

Underlay Installation

- 14.1 Thermakraft Covertek 403 Plus Wall Underlay must be fixed to all framing members at maximum 300 mm centres with large-head clouts 20 mm long, 6-8 mm staples, self-drilling screws or proprietary underlay fixings. The underlay must be pulled taut over the framing before fixing.
- 14.2 Thermakraft Covertek 403 Plus Wall Underlay must be run horizontally and must extend from the upper-side of the top plate to the under-side of the bearers or wall plates supporting ground floor joists, or below bottom plates on concrete slabs. Horizontal laps must be no less than 150 mm wide, with the direction of the lap ensuring that water is shed to the outer face of the membrane. End laps must be made over framing and be no less than 150 mm wide.
- 14.3 The wall underlay should be run over openings and these left covered until windows and doors are ready to be installed. Openings are formed in the underlay by cutting on a 45 degree diagonal from each corner of the penetration. The flaps of the cut membrane must be folded inside the opening and stapled to the penetration framing. Excess underlay may be cut off flush with the internal face of the wall frame.
- 14.4 Thermakraft Covertek 403 Plus Wall Underlay can be added as a second layer over head flashings in accordance with the requirements of NZBC Acceptable Solution E2/AS1, Paragraph 9.1.10.3.
- 14.5 When fixing the product in windy conditions, care must be taken due to the large sail area created.
- 14.6 Any damaged areas of Thermakraft Covertek 403 Plus Wall Underlay, such as tears, holes or gaps around service penetrations, must be repaired. Damaged areas can be repaired by covering with new material lapping the damaged area by at least 150 mm and taping, or by taping small tears.

Inspections

- 14.7 The Technical Literature must be referred to during the inspection of Thermakraft Covertek 403 Plus Wall Underlay installations.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

- 15.1 The following tests have been carried out on Thermakraft Covertek 403 Wall Underlay in accordance with NZBC Acceptable Solution E2/AS1, Table 23: tensile strength, edge-tear resistance and resistance to water vapour transmission in accordance with AS/NZS 4200.1, shrinkage in accordance with AS/NZS 4201.3, resistance to water penetration in accordance with AS/NZS 4201.4, surface water absorbency in accordance with AS/NZS 4201.6, pH of extract in accordance with AS/NZS 1301.421s and air resistance to BS 6538.3. The following tests have been carried out on Thermakraft Covertek 403 Plus Wall Underlay: resistance to dry delamination in accordance with AS/NZS 4201.1, surface water absorbency in accordance with AS/NZS 4201.6 and air resistance to BS 6538.3. A range of these tests were completed before and after the underlays were exposed to ultra-violet light.
- 15.2 The Flammability Index of Thermakraft Covertek 403 Plus Wall Underlay has been evaluated in accordance with AS 1530.2.

Other Investigations

- 16.1 A durability opinion has been given by BRANZ technical experts.
- 16.2 An evaluation of the expected performance of Thermakraft Covertek 403 Plus Wall Underlay in direct contact with metal wall cladding has been completed by BRANZ.
- 16.3 The practicability of installation of Thermakraft Covertek 403 Plus Wall Underlay has been assessed by BRANZ and found to be satisfactory.
- 16.4 The Technical Literature, including installation instructions, has been examined by BRANZ and found to be satisfactory.

Quality

- 17.1 The manufacture of Thermakraft Covertek 403 Plus Wall Underlay has been examined by BRANZ, including methods adopted for quality control. Details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 17.2 The quality of supply to the market is the responsibility of Thermakraft Limited.
- 17.3 Building designers are responsible for the design of the building, and for the incorporation of the wall underlay into their design in accordance with the instructions of Thermakraft Limited.
- 17.4 Quality of installation is the responsibility of the installer in accordance with the instructions of Thermakraft Limited.

Sources of Information

- AS 1530.2 - 1993 Test for flammability of materials.
- AS/NZS 1301.421s: 1998 Determination of the pH value of aqueous extracts of paper, board and pulp - cold extraction method.
- AS/NZS 4200.1: 1994 Pliable building membranes and underlays - materials.
- AS/NZS 4201.1: 1994 Pliable building membranes and underlays - Methods of test - Resistance to dry delamination.
- AS/NZS 4201.2: 1994 Pliable building membranes and underlays - Methods of test - Resistance to wet delamination.
- AS/NZS 4201.3: 1994 Pliable building membranes and underlays - Methods of test - Shrinkage.
- AS/NZS 4201.4: 1994 Pliable building membranes and underlays - Methods of test - Resistance to water penetration.
- AS/NZS 4201.6: 1994 Pliable building membranes and underlays - Methods of test - Surface water absorbency.
- BS 6538.3: 1987 Method for determination of air permeance using the Garley apparatus.
- NZS 2295: 2006 Pliable, permeable building underlays.
- NZS 3604: 2011 Timber-framed buildings.
- Acceptable Solutions and Verification Methods for New Zealand Building Code External Moisture Clause E2, Ministry of Business, Innovation and Employment, Third Edition July 2005 [Amendment 7, 01 January 2017].
- Ministry of Business, Innovation and Employment Record of Amendments for Compliance Documents and Handbooks.
- The Building Regulations 1992.

Amendments

Amendment No. 1, dated 23 February 2017.

This Appraisal has been amended to update the Appraisal Holder.



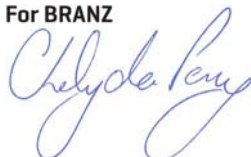
In the opinion of BRANZ, **Thermakraft Covertek 403 Plus Wall Underlay** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Thermakraft Limited**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the Technical Literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. **Thermakraft Limited**:
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions.
 - d) Warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by **Thermakraft Limited**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Thermakraft Limited** or any third party.

For BRANZ



Chelydra Percy

Chief Executive

Date of Issue:

14 June 2016



ARDEX Butynol®

Butyl Rubber Roofing Membrane

New Zealand Made Roofing Membrane

50+ Years of Service in New Zealand and Oceania

BRANZ Appraised (No. 436)

CodeMark Certified (No. AQ-050516-CMNZ)

E2/AS1 Acceptable Solution

Available in 1mm and 1.5mm gauges

Available in a variety of colours

Safe and Secure Install with ARDEX Seam Primer and Seam Tape



DISCLAIMER The technical details, recommendations and other information contained in this data sheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable New Zealand Standard, our instructions and recommendations and only for the uses they are intended. We also reserve the right to update information without prior notice to you to reflect our ongoing research and development program. Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may effect specific installation recommendations. The supply of our products and services is also subject to certain terms, warranties and exclusions, which may have already been disclosed to you in prior dealings or are otherwise available to you on request. You should make yourself familiar with them.

November 2016

ARDEX Butynol®

Butyl Rubber Roofing Membrane

BUTYNOL® SYSTEM SPECIFICATION

A synthetic rubber with properties which resist ageing from heat, sunlight and ozone. It has excellent gas impermeability and toughness and remains flexible at low temperatures.

Butynol® is manufactured by combining the petroleum gases isobutylene and isoprene at the extremely low temperature of -100°C . (Rubber Technology-Morton)

Butynol® is marketed by ARDEX as a warranted roofing, decking and tanking product and fixed by their trained and experienced approved Applicators.

BUTYNOL® MATERIAL SPECIFICATIONS

Our requirements for long term warranty necessitate that Butynol® meets these typical technical requirements:

Specific Gravity to ASTM D297	1.20±0.05
Hardness IRHD to ASTM D1415	65±5
Tensile Strength to ASTM D412	8.3 MPa min
Modulus at 300% elongation to ASTM D412	4.15 MPa min
Elongation at break to ASTM D412	300% min
Heat Ageing (7 days at 115°C)	
Tensile Retention to ASTM D412	70% min
Elongation Retention to ASTM D412	70% min
Tear Strength to ASTM D624	26kN/m
Ozone Resistance to ASTM D1149	No visible cracks
(7 days at 40°C in 50pphm ozone)	
Water Absorption to ASTM D471	
1.65% (by mass) 0.72% (by volume)	
Water Permeability to ASTM E96-92	
Vapour Flow Resistance (MNs/g)	12414
Vapour Flow Rate ($\text{g}/\text{m}^2\text{d}$)	0.013

Note: Interesting comparable figures for water permeability are –
Polythene 156, Asphalt 1830, P.V.C. 4900.

K Values on 1mm Butynol sheeting

K Value (Thermal Conductivity) 7.4×10^3
Cal/cm/sec/deg C.

Conductivity Data on 1mm Butynol sheeting

Resistance/ m^2 $\Omega/\text{m}^2 = 0.6816$ on 9.3 volts.

SEAM TAPE PERFORMANCE

Tests on the seam tape bonding method, by an independent testing laboratory, have shown average values equivalent to 90% of unwelded material. It is considered impossible for the test methods used to be duplicated in normal service ie. 400% elongation.

BUTYNOL® PROTECTION

Butynol® protects against water, moisture vapour, gases, sun, ozone, frost, acids, chemicals and bacteria.

BUTYNOL® RESISTANCE

Butynol® resists tearing, flex cracking, bubbling and abrasion. It is extremely strong, has a long life and is versatile.

STAINING OF LIGHT COLOURED BUTYNOL®

To avoid staining care must be taken during design stage to ensure that water running off unpainted treated timber and some metals (eg copper) do not run over light coloured Butynol®.

BUTYNOL® GAUGES

Standard 1.0mm and 1.2mm—For roofs, gutters and decks with protection.

1.2mm—For roofs.

1.5mm—For roofs, gutters and walk out decks.

2.25mm Heavy Duty

Factory welded panels in all gauges can be custom made.

BUTYNOL® IS PACKAGED

In rolls of nominal 1.4m width and 17.86m long. Each roll is packed in polythene wrapper trademarked Butynol® with thickness identified. Coverage 25m^2 except 2.25mm gauge which is 12m^2

Gauges available are:

1.0mm black.	Weight: nominal 30kg
1.5mm black.	Weight: nominal 45kg
2.25mm black.	Weight: nominal 32kg
1.2mm dove grey.	Weight: nominal 32kg
1.5mm all colours.	Weight: nominal 47kg

ADHESIVES AND SOLVENTS

Specially formulated for all Butynol® applications. Available in solvent and water based. Supplied in 20L steel/plastic pails (approx. 20kg). 4 and 1 litre cans.

BUTYNOL® SEALANT

Available in tubes for caulking guns.

ARDEX Butynol®

Butyl Rubber Roofing Membrane

ADHESIVES AND SOLVENTS FOR USE WITH BUTYNOL®

- WA98 - The Standard contact brushing, spray grade and rolling adhesive for fixing to the substrate and for laps not subject to periodic ponding.
(Pitch 5° and above)
- WA98S - Solvent for clean up of WA98 adhesive.

Seam Primer - A water resistant primer, used with seam tape for general lap bonding.

Note: Temperature and Humidity

The evaporation of any solvent adhesive system causes a drop in temperature at the interface. At times of high humidity this can result in a micro molecular water layer at the interface which will result in a failure to bond, falsely attributed to Adhesive failure. Fixing should not proceed under these circumstances.

NOTES

1. In cases of extreme absorbency, a priming coat of 50/50 WA98 adhesive and solvent may assist water shedding and absorption. However, a follow up of full strength adhesive for full bonding should not be proceeded with under four hours, thus allowing full evaporation of solvents absorbed into the substrate. Primers must be time dried not touch dried.
2. As new substrate materials continually appear on the market, consult ARDEX for approval of their use with Butynol®.
3. Seam tape and seam primer MUST be used for all Butynol® joints.
4. Do not use in temperatures less than 6°C.

SEAM PRIMER

Seam Primer is specially formulated for use with Seam Tape. Applied with scrubber pads. Available in 4 and 1 litre cans.

SEAM TAPE

Recommended for all Butynol® laps.

Supplied by ARDEX in 50mm x 30.5m rolls (6 to a carton).

DETAIL TAPE (uncured)

A malleable exterior tape for flashing exterior corners etc. 150mm x 30.5m rolls.

FLASHING TAPE

A malleable tape for moulding in gussets, pipe flashings and awkward situations. Supplied in 100mm x 5m rolls.

Flashing tape must not be left exposed. A cover strip of Butynol® or detail tape must be applied over flashing tape to finish.

PLYWOOD TREATMENT

To be in accordance with Acceptable Solution E2/AS1 plywood substrate must be treated to H3.2 with Waterborne CCA treatment and kiln dried after treatment. All plywood joints should be taped with ARDEX Release tape.

Plywood must not be LOSP treated.

DURABILITY

Butynol® when fixed according to ARDEX instruction will meet the NZBC requirements of B2.3.1(b) 15 years. Refer BRANZ Appraisal Certificate No 436.

EXTERNAL MOISTURE

Roofs, decks and balconies must be designed and constructed to shed precipitated moisture. The minimum falls to roofs is 1 in 30, decks and balconies 1 in 40 and gutters 1 in 100.

BUILDING TO NZBC ACCEPTABLE SOLUTION E2/AS1

NZBC Acceptable Solution E2/AS1 limits the size of decks to 40m² as covered by the scope of Appraisal No. 436. Butynol® Roofing Membrane is suitable for use on decks larger than 40m². These decks are the subject of specific design and are outside the scope of E2/AS1.

CLEANING WEATHERED BUTYNOL®

Use sugar soap to remove oxidation and restore surface.

Wind blown dirt is more noticable on low slope roofs, particularly on black Butynol®.

DAMP AND WEATHERPROOFING

The Building Code of Australia Deemed-to-Satisfy Provisions F1.9 and F1.10 are met by Butynol as an acceptable damp-proof course.

Butynol® when used as described in ABSAC Technical Opinion 188 August 1994 complies with the Building Code of Australia Deemed-to-Satisfy Provision F1.7(b) and Acceptable Construction Manual Part 3.8.1.0, or AS 3740 for "Water Proofing of Wet Areas in Buildings".

PAINTING OVER BUTYNOL®

Use ARDEX WPM 908. Wash with Sugar Soap. Beware of using non ARDEX primers as this may effect your Butynol® Warranty.

FIRE RATING

The Butynol® roofing system must be considered combustible but may be used on buildings for most purpose groups. When adhered to a non-combustible substrate or timber (Plywood) 18mm thick is acceptable.

Building Code of Australia allows use in all building types under Specification C1.10, Clause 7(e), except in bush fire prone areas.

PRODUCT WARRANTY

When laid by an approved ARDEX Applicator in accordance with ARDEX's specifications, a material warranty for up to 20 years (covering the Membrane, adhesive and tape) is available upon completion of the work including full payment.

WORKMANSHIP

A warranty for workmanship shall be provided directly by the approved Applicator. The period and terms of the workmanship warranty shall be determined by the conditions of contract or the approved Applicator.

JOINING NEW BUTYNOL® TO EXISTING BUTYNOL®

Use sugar soap to remove oxidation and restore the surface of the existing Butynol® before application. Adhere new Butynol to existing Butynol® using ARDEX Seam Primer and ARDEX Seam Tape to give a 50mm overlap. SUBSTRATE SPECIFICATION (Plywood)

To conform with Acceptable Solution E2/AS1 plywood shall be:

A minimum of 17mm complying with AS/NZS 2269, at least CD Structural Grade plywood with the sanded C face upwards, and H3.2 with Waterborne CCA treatment and kiln dried after treatment.

Substrates must be dry when Butynol® is applied. The plywood and the timber substructure shall have a maximum moisture content of 20% when Butynol is adhered.

Plywood panels shall be laid with staggered joints (brick bond), the edge of sheets shall be supported with dwangs or framing, unless a structurally tested tongue-in-groove edge provides equivalent support. The maximum recommended span in E2/AS1 is 400mm. However specific design may allow 17.5mm plywood or greater to be laid on 400mm purlins with nogs or dwangs at 600mm or even 1200mm centres. Plywood shall be laid with the face grain at right angles to the supports. A 20mm triangular fillet shall be used at the base of any 90° upstand. External edges shall be chamfered with a minimum radius of 5mm.

Plywood shall be fixed with 10 gauge x 50mm stainless steel countersunk head screws with 3mm gaps between all sheets, at 150mm centres on edges, and 200mm in the body of the sheets.

All joints in the plywood and junctions of plywood with other materials shall have 25mm ARDEX Release tape applied before application of Butynol®.

PLYWOOD QUALITY

Plywood to be installed in accordance with the plywood manufacturer's recommendation to provide a suitable surface for membrane.

Problems with plywood quality may effect long term membrane performance.

Please check with your plywood supplier.

We have duplicated the position of one supplier below.

- Face checks in plywood do not affect the structural integrity of the panel as they are confined to the surface veneer and are strictly aesthetic in nature.
- As face checking occurs naturally Carter Holt Harvey Wood products does not consider them to be a manufacturing or product fault.

Source: Specifications and Installation Guide Carter Holt Harvey.

Laying on plywood with face checking as above should be avoided and surface corrected if possible.

NOTE: The use of LOSP (Light Organic Solvent Preservative) treated plywood must NOT be used under Butynol® in any circumstances or conditions.

SUBSTRATE SPECIFICATION (Concrete)

New concrete

Must be cured for a minimum of 28 days and all curing compounds removed prior to application.

A reduction in cure time can be achieved by utilising the ARDEX HydrEpoxy System (consult ARDEX Technical Department for details).

Old concrete

Must be clean from any contaminants prior to application.

For further substrate types please consult ARDEX Technical Department.

SUBSTRATE SPECIFICATION (Fibre Cement Sheet)

Must be clean from any contaminants prior to application.

For further substrate types please consult ARDEX Technical Department.

ROOF VENTILATION

The most important precaution to observe with low slope roofs is that no construction moisture is enclosed. Low slope or flat roof structures are generally slow

ARDEX Butynol®

Butyl Rubber Roofing Membrane

drying because of their impermeable cladding. All timbers should be below 20% moisture before being enclosed.

No amount of ventilation will cope with moisture problems created by drying timbers.

If there is a reason to believe that there is moisture trapped in the roof structure ARDEX can provide our standard one way substrate ventilators or our lo rise one way ventilators to provide a better visual appearance.

Soffit ventilation is the most effective way to provide effective roof cavity ventilation. Careful placement of the soffit ventilation to avoid gutters etc, will provide a natural airflow as well as cooling to a low slope membrane clad roof.

Closed-in construction spaces under Butynol® roofs and decks shall have adequate ventilation to prevent the accumulation of moisture under Butynol®. There should be a minimum gap of 20mm between the underside of the substrate and any insulation.

SUBSTRATE VENTILATION

Substrate ventilation should be used to release moisture trapped under the Butynol® on concrete surfaces. Substrate ventilators are used in conjunction with vent tapes. Tapes should be laid in a grid pattern spaced at 600mm venting to the roof perimeter.

On plywood substrates ventilators are used at the junction of the ply. Ventilators are not required in most applications.

One way substrate ventilators prevent moisture vapour build up and if required can be installed every 90 square metres. Not designed to ventilate roof cavities.

For cavity ventilation - seek advice from an ARDEX Representative. TYPICAL ARCHITECTURAL BUTYNOL® RUBBER ROOFING SPECIFICATION

1. Preliminary

Refer to the Preliminary and General Clauses of this specification and to the General Conditions of Contract which are equally binding on all trades. This section of the specification shall be read in conjunction with all other sections.

2. Scope

This section of the contract consists in general of the provision and laying of all the Butynol® rubber, for the roofs, decks, gutters and flashings on the buildings. Refer to Clause 12 hereafter for Extent of Work.

3. Workmanship

The whole of the work shall be carried out by skilled tradesmen using adequate and proper equipment and methods in accordance with best trade practice, and following the specifications methods and recommendations as laid down by the manufacturers.

4. Sub-contractors

The work included in this section of the contract shall be

carried out by a firm of roofing experts conversant with and specialising in the supply and fixing of this material and shall be a firm approved by ARDEX.

5. Warranty

When laid by an approved Applicator in accordance with ARDEX's specifications, a written material warranty of up to 20 years is available. It is the responsibility of the approved Applicator to confirm proper installation and to request ARDEX to issue a material warranty on behalf of the customer following completion of installation.

6. Materials

6.1 Butynol® Rubber

(a) Shall be 1.0mm thick standard Black Butynol® rubber to all roof surfaces, gutters and fascias and walk out decks where membrane is to be overlaid with tiles or timber.

(b) Shall be 1.5mm thick Butynol® to all walk out decks.

6.2 Adhesives

Shall be as recommended by ARDEX specially formulated for Butynol® rubber and suitable for the particular application and the relevant temperature and conditions applicable.

Generally ARDEX WA98 adhesive is used for substrate bonding.

ARDEX seam primer shall be used in conjunction with ARDEX seam tapes for all laps.

When conditions are experienced that are outside the temperature and/or moisture ranges recommended by the manufacturers for the above standard adhesives work will cease.

6.3 Seam Tapes

Shall be 50mm wide seam tape provided by ARDEX.

6.4 Substrate Joint Tape

All Plywood joints shall be taped with a 25mm wide pressure sensitive ARDEX Release tape.

7. Roof Deckings

Shall be 1.5mm Butynol® or 1mm with a protective covering for all deck surfaces.

All decks to which Butynol® is to be fixed shall be clean, smooth, dry and free from dirt, grit or sharp objects.

Deck substrates may be primed with 50/50 WA98 adhesive/solvent.

The Butynol® roofer shall co-operate with the other trades laying the decking to ensure that the final surface is in first class condition for the laying of the Butynol® rubber roofing.

The Butynol® roofer shall check the deck before laying any Butynol® to ensure that the surface is completely sound, screw fixed to specifications: screw heads flush, sheets spaced to provide for thermal movement or

shock.

NZBC Acceptable Solution E2/AS1 limits the size of decks to 40m² as covered by the scope of Appraisal No. 436 (2011). Butynol® Roofing Membrane is suitable for use on decks larger than 40m². These decks are the subject of specific design.

Full ARDEX specifications also available on Masterspec.

8. Laying of Butynol® Roofing

It is the responsibility of the Applicator to ensure that the substrate surface to be covered by the Butynol® is in fit and proper condition, suitable for the laying of the material.

Tape all joins in substrate sheets with 25mm wide pressure sensitive tape approved by ARDEX.

All Butynol® sheeting shall be laid out on the roof to “relax” the sheeting before fixing. A period of at least 20 minutes is usually required. Do not finally position sheeting with a tension exceeding 2%.

Apply adhesive to the substrate and the underside of the Butynol® rubber sheeting by brush, spray or an approved type roller at a spreading rate of generally not less than 2.5 square metres per litre. Leave to tack dry before bonding the two surfaces together.

Lay sheeting by drawing back halfway either longitudinally or transversely. Thoroughly roll or work over the surface of the sheet to exclude all air and to obtain a full bond.

All Butynol® shall be “lap bonded” as detailed below.

Bonding Laps with ARDEX Seam Tape and Seam Primer

1. The top lap is positioned and the bottom sheet marked to indicate the edge of the top sheet.
2. The top sheet is folded back.
3. The ARDEX Seam Primer is then applied to the Butynol® in the area marked on the bottom sheet and 50mm in from the edge on the top sheet. The ARDEX Seam Primer is applied to the mating surfaces using a synthetic scrubbing pad. Scrubbing pads should be replaced as they become dirty. Allow the primer to become 'dry to the touch'.
4. Position and unroll the 50mm ARDEX Seam Tape along the seam. The edge of the release paper should be aligned to the mark on the bottom membrane sheet.
5. Roll the length of the seam with the release paper still in place.
6. Remove the release paper from the ARDEX Seam Tape by pulling at a 45° angle away from the seam. Keep the release paper low to the roof surface as it is removed.
7. Fold into place the primed edge of the top sheet.

8. Roll the completed seam.

9. Tiling Over Butynol®

To direct fix tiles to Butynol, ABA Optima two part adhesive should be used. Ensure the Butynol® surface is clean and dry before applying the adhesive. All laps must have seam tape.

Tiles may also be adhered to a removeable layer of ARDEX DS60 to comply with (E2 7.3.1.1) with the ability to lift the top surface off when necessary.

(Refer Optima page 41)

10. Protection of Laid Butynol® Sheeting

The Butynol® roofing contractor shall ensure that his fixers only work on the Butynol® roofing with soft sole shoes.

The Butynol® roofer shall co-ordinate with the main contractor who shall ensure that any other trades who work over the completed roof wear soft sole shoes.

Upon completion of each area the roofer shall get the main contractor to inspect the area and the main contractor will sign off that the area was free from any defects or damage. It is then the responsibility of the main contractor to ensure the Butynol® roofing is in no way damaged by other trades.

11. Completion

On completion carefully and thoroughly clean off and remove all scraps and other rubbish from finished surfaces and leave in tidy order.

12. Extent of Work

Observe the foregoing specification and supply and lay Butynol® rubber sheeting to all roofs, decks, gutters and flashings as shown and detailed in the ARDEX specification.

Failure to comply with the above specifications will result in all warranties being null and void.

LAYING SPECIFICATION

The Sub contractor for the work called for in this trade will be a Company or Person approved by ARDEX.

The approved Applicator (hereafter called the Applicator) shall examine all drawings and provide for the flashing, caulking and sealing of all vents, stacks and pipes penetrating the roofing membrane. Also all flashings at walls, parapets, verges, gutters etc., unless otherwise instructed in the specifications.

The surface to which Butynol® is to be fixed shall be clean, smooth, dry and free from sawdust, grit or sharp objects. Membrane laying shall not start until defects have been corrected.

To avoid staining care should be taken to avoid water runoff from copper downpipes or guttering on to light coloured Butynol®.

ARDEX Butynol®

Butyl Rubber Roofing Membrane

When CCA plywood is used in conjunction with a light coloured membrane it is advisable to prime any plywood that will not be covered the same day.

It is the responsibility of the Applicator to ensure that the surface to be covered by the Butynol® is in fit and proper condition, suitable in all respects for the laying of the material.

On completion the Applicator will provide the owner with a Workmanship Warranty and obtain from ARDEX a Materials Warranty.

Failure to comply with the above specifications will result in all warranties being null and void.

LAYING THE BUTYNOL®

Before applying the Butynol®, it shall be unrolled for twenty minutes to relieve stresses induced by manufacture and storage. The Butynol® sheet shall be set out in the exact position in which it will be finally required and while it is held in place, it shall be folded back lengthwise to expose half the underside. To the now exposed underside and the area of roof also left exposed, apply an even coat of WA98 Adhesive or WPM 09A (solvent free). When the adhesive has become touch dry, work the sheet back into its original position avoiding wrinkles and the inclusion of air bubbles.

Repeat the process with the other half of the sheet and when completed, roll the whole sheet with hand press rollers or the like.

When applying the next sheet, it shall be lapped over the first sheet by 50mm. All turn ups and downs shall be neatly formed and cut to a straight line if required.

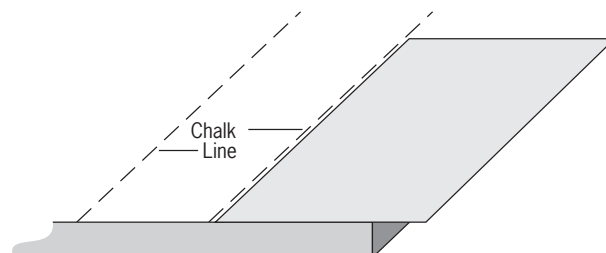
Butynol® shall not be laid under tension.

When the whole area has been covered or as work progresses, the applicator has to seal the laps.

BUTYNOL® LAYING METHOD

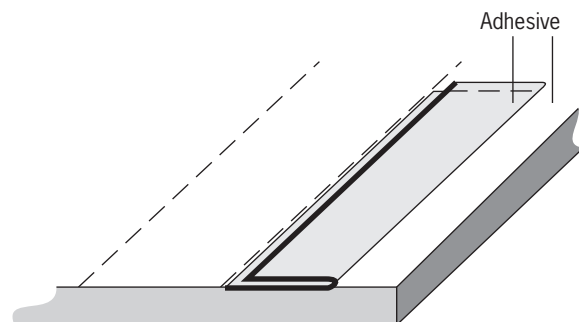
STEP 1

Accurately place sheet. Mark spacing with chalk line.



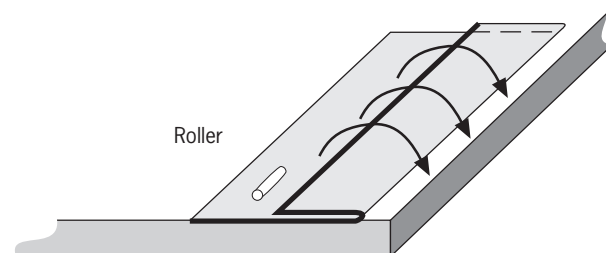
STEP 2

Fold back half sheet. Apply adhesive to both faces.



STEP 3

After flash off, fold membrane into place. Roll thoroughly.



STEP 4

Treat 2nd half of Butynol® similarly.

ARDEX Butynol®

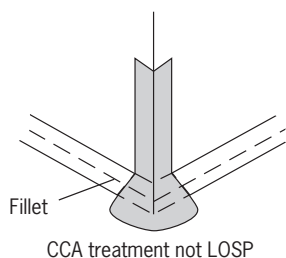
Butyl Rubber Roofing Membrane

EXTERNAL CORNERS

To comply with Acceptable Solution E2/AS1 Figure 57.

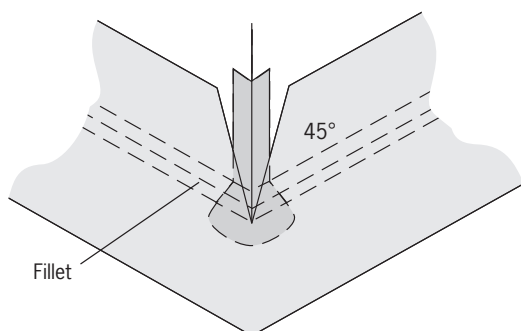
STEP 1

Bond 100mm flashing to corner as shown.



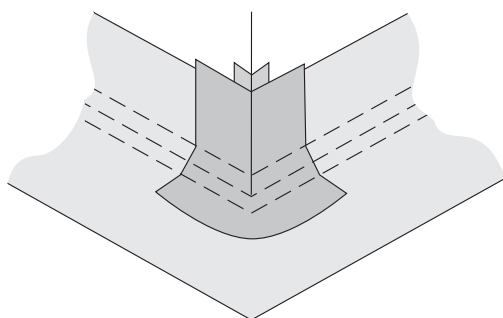
STEP 2

Bond Butynol® to deck and up wall 150mm minimum. Cut sheet from corner at 45° as shown.



STEP 3

Cover corner point with layer of detail tape.

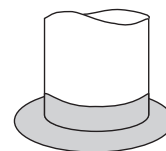


NOTE: Fillets must be used on all internal corners.

FLASHING - EXISTING PIPE

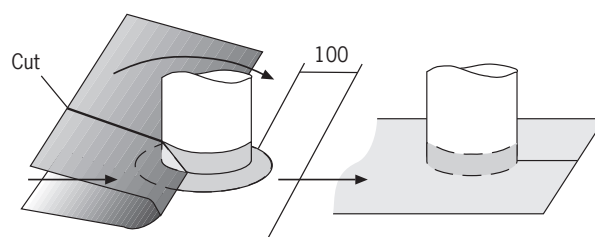
STEP 1

Under flash pipe with 100mm Butynol® flashing tape.



STEP 2

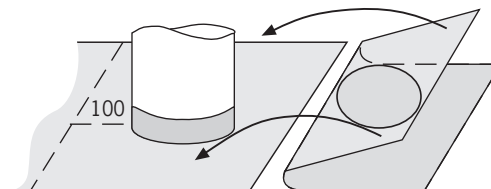
Bond Butynol® to 100mm past pipe. N.B. When flashing black Butynol® use Butynol® or detail tape.



STEP 3

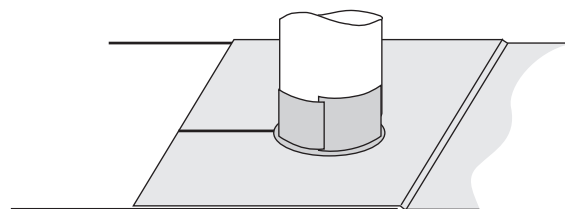
Bond continuation of Butynol® to overlap base sheet and beyond pipe 100mm.

Cut a smooth round hole 20mm smaller than diameter of penetration.



STEP 4

Apply collar of detail tape or Butynol® cover strip. DO NOT STRETCH STRIP.

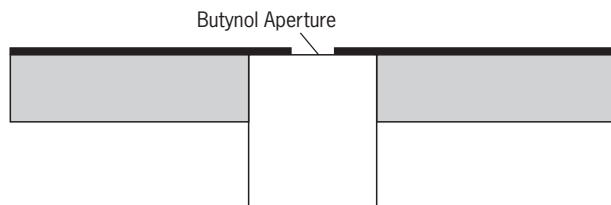


N.B. Flashing tape MUST NOT be left exposed. Cover strip must be Butynol®. When detail tape is used a cover strip of Butynol® is not required.

FLASHING - NEW PIPE

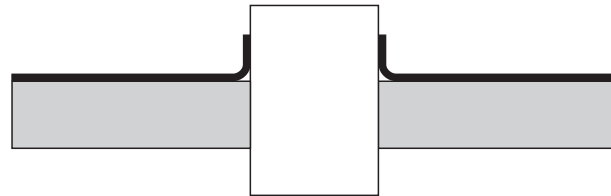
STEP 1

Cut smaller diameter hole than pipe.



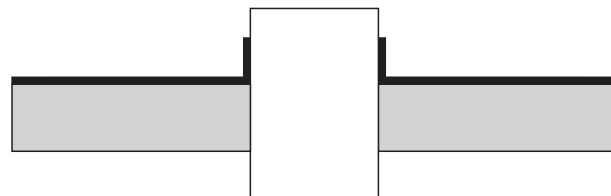
STEP 2

Pipe is raised through smaller diameter hole in Butynol®, forcing edge upwards to create upstand.



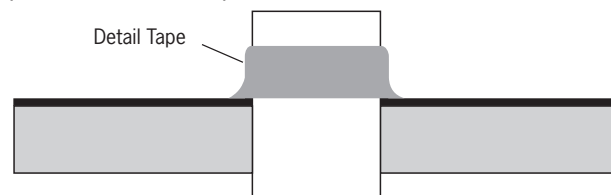
STEP 3

Pull pipe down to eliminate void.



STEP 4

After pulling pipe down approximately 1cm to sharpen corner, tape upstanding Butynol® to pipe using seam primer and detail tape.



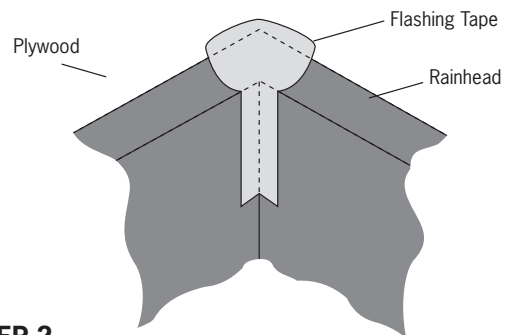
N.B. If flashing tape is used it **MUST NOT** be left exposed. A cover strip of Butynol® must be applied over the flashing tape to finish.

INTERNAL CORNERS FOR RAINHEADS

and areas where a pig's ear cannot be used.

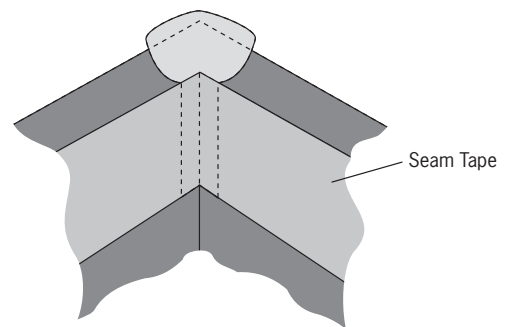
STEP 1

Apply Flashing Tape over Rainhead and Plywood.



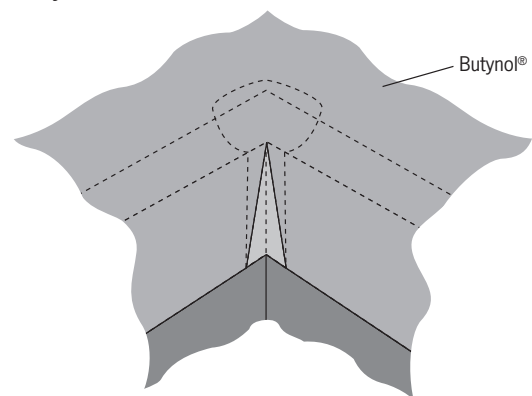
STEP 2

Run Seam Tape along all four vertical sides of Rainhead.



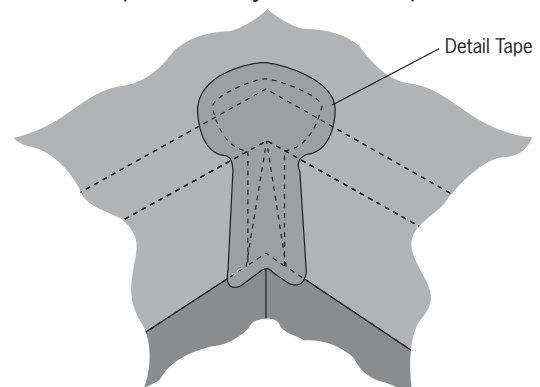
STEP 3

Cut Butynol® sheet to fit into corners.



STEP 4

Cover corner point with layer of detail tape.

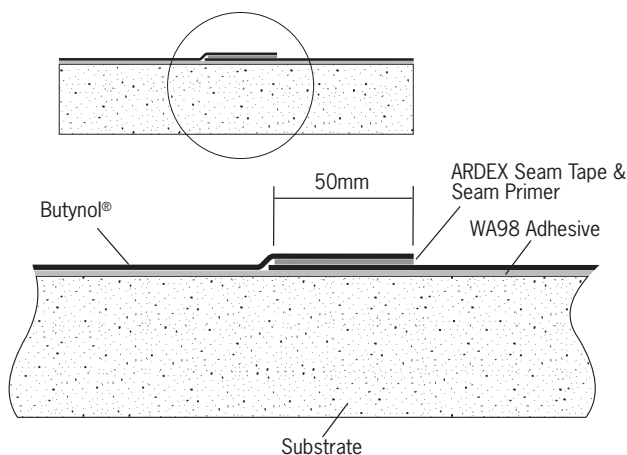


ARDEX Butynol®

Butyl Rubber Roofing Membrane

BONDING THE LAPS

Seam tape and seam primer must be used for all Butynol® joints.

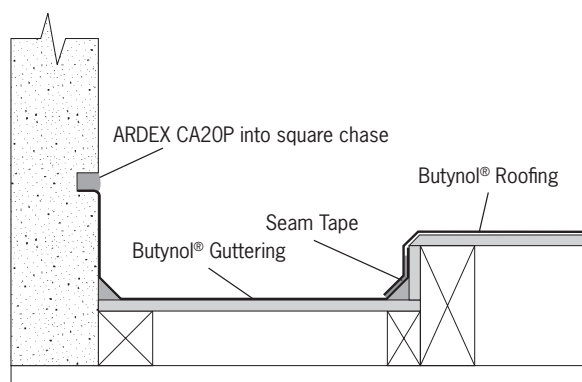


1. The top lap is positioned and the bottom sheet marked to indicate the edge of the top sheet.
2. The top sheet is folded back.
3. The ARDEX Seam Primer is then applied to the Butynol® in the area marked on the bottom sheet and 50mm in from the edge on the top sheet. The ARDEX Seam Primer is applied to the mating surfaces using a synthetic scrubbing pad. Scrubbing pads should be replaced as they become dirty. Allow the primer to become 'touch dry'.
4. Position and unroll the 50mm ARDEX Seam Tape along the seam. The edge of the seam tape should be aligned to the mark on the bottom membrane sheet. The see-through backing film makes this very simple.
5. Roll the length of the seam with backing film still in place.
6. Remove the backing film from the ARDEX Seam Tape by pulling at a 45° angle away from the seam. Keep the backing film low to the roof surface as it is removed.
7. Fold into place the primed edge of the top sheet.
8. Roll the completed seam.

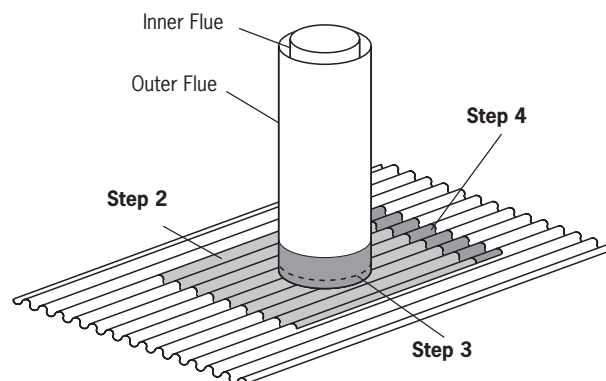
FORMING LAPS FOR GUTTERS

Laps are most important in gutter work and should be formed using ARDEX seam tape and seam primer.

All internal boxed gutters can be easily formed to any shape or size using Butynol® over any specified substrate.



FLUE FLASHING



Step 1

Measure Butynol® to suit size of pipe. Cut a smooth round hole at least 20mm smaller than diameter at flue penetration. Refer to table 21 of E2/AS1.

Step 2

Fix Butynol® Flashing onto roofing with WA 98 adhesive ensuring membrane is relaxed into roofing profile.

Step 3

Apply collar of Detail Tape sealed with Seam Primer onto 20mm Butynol® upstand.

Step 4

Apply flashing strip of Detail Tape sealed with Seam Primer onto Butynol® top edge and roofing ensuring feather edge is on the upside.

LOOSE LAID APPLICATION OF BUTYNOL® ROOFING

Materials used shall be as previously specified. When the surface is suitably prepared a large fully vulcanised Butynol sheet or sheets can be unrolled and spread over the prepared area and allowed to remain in this position for approximately one hour to relieve stresses induced by manufacture and storage. If necessary for ease of handling, these sheets can be supplied in varying sizes and vulcanised on site using an ARDEX vulcanising machine or using seam tape with seam primer.

The Butynol® sheet shall be set out in the exact position in which it will be finally required and whilst it is held firmly in place it shall be folded back at least one metre from the roof's surrounding parapet or wall to allow the application of adhesive to that area of the exposed substrate.

WA98 adhesive may be applied to the substrate and the corresponding area of Butynol® sheeting which may then, when the adhesive is touch dry, be worked back into its required position avoiding wrinkles and the inclusion of air bubbles.

Upon completion of the detail work, parapets, drains and rainheads etc a layer of rounded gravel 30-40mm should be applied up to 50mm deep, over a layer of Geo Textile Fabric for protection of the Butynol® sheet.

Care must be taken at outlets to ensure the ballast cannot enter or cause a blockage that prevents rainwater from leaving the roof area. Maintenance paths should be created to air-conditioning or roof plant with concrete tiles.

Effects on the membrane in areas of high wind can be eliminated by stabilising the ballast with cement. Dry cement should be broadcast over the 30-40mm gravel with a broad mouth shovel and left to hydrate or lightly sprayed with water to set off.

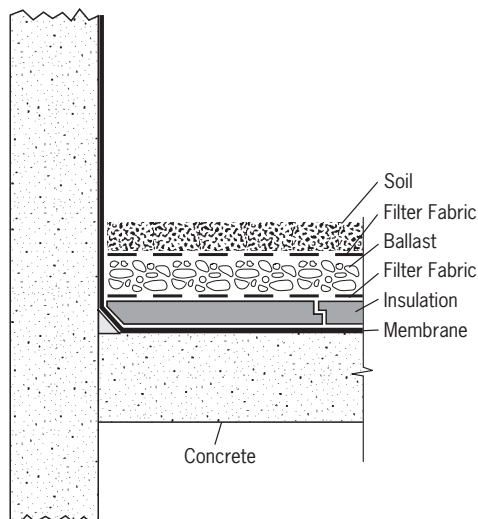
If possible a water test should be carried out prior to the application of ballast.

Note: Minimum pitch 2.0° to comply.

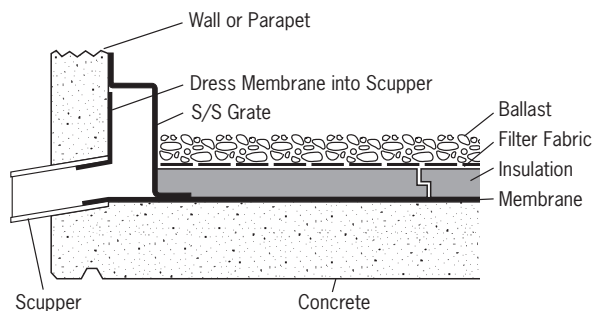
Refer NZBC Clause E2/AS1 External Moisture 8.5.1 (a).

Butynol® can be laid with zero pitch if compliance can be obtained. Lap may be welded in factory or on site if required.

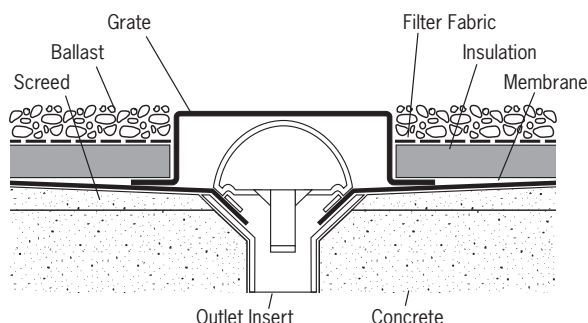
TYPICAL BALLASTED/GARDEN ROOF DETAIL



SCUPPER ROOF OUTLET



SCUPPER ROOF OUTLET & GRAVEL RETAINER



CBI 5113

OCT 2012

GIB® Fire Rated Systems

Specification and Installation Manual



BRANZ Appraised
Appraisal No.289 [2012]





WHAT IS NEW?

Most specifications in this technical literature are similar to those published in 'GIB® Fire Rated Systems January, 2006' with the following additions;

- Compliance has been aligned with the 2012 provisions of the New Zealand Building Code for the Protection from Fire
- Surface Finish Properties have been tested in accordance with the ISO 5660
- Steel joist floor/ceiling specifications have been added
- Stability of fire rated elements has been clarified and a simple boundary wall detail is included
- Penetration details, previously published in separate literature, have been included. Reference is also made to a listing of proprietary penetration seals now available on www.gib.co.nz or scan the QR code



USE ONLY THE CURRENT SPECIFICATION

This publication may be superseded by a new publication. Winstone Wallboards Ltd accepts no liability for reliance upon publications that have been superseded. Before using this publication check whether this is the current publication; simply call the GIB® Helpline on 0800 100 442 or visit www.gib.co.nz.

THIS BOOK SUPERSEDES THE FOLLOWING PUBLICATIONS

- GIB® Fire Rated Systems - January 2006
- Penetrations in GIB® Fire Rated Systems - August 2003
- GIB® Garage Boundary Wall Technical Bulletin - March 2009

GIB® Fire Rated Systems

Specification and Installation Manual

NEW ZEALAND BUILDING CODE COMPLIANCE

The New Zealand building code requirements for fire safety represent the minimum allowable standard of protection to ensure the health and life safety of building occupants.

The building code provisions do not aim to protect the building itself, nor its contents, and often fall short of what people and businesses expect and find acceptable.

An effective fire design not only addresses life safety, but also considers personal property protection and ongoing business viability after exposure to a possible fire.

BEWARE OF SUBSTITUTION

The performance of fire rated systems is very sensitive to design detailing and construction practices. All GIB® Fire Rated Systems have been developed specifically for New Zealand conditions and independently tested or assessed to ensure the required level of performance. Therefore, it is important to use only GIB® branded components where specified and closely follow the specified design details and construction practices, so you can be confident that the required level of fire safety is achieved on site.

If you require any further information please don't hesitate to call our GIB® Helpline on 0800 100 442.

GIVING YOU PEACE OF MIND

- The New GIB® Fire Rated Systems 2012 have been BRANZ Appraised, providing assurance that the systems in this technical manual have been sourced from organisations with accredited quality assurance and most importantly, comply with the New Zealand Building Code (NZBC)
- Compliant with the 2012 provisions of the NZBC for Protection from Fire, including new Surface Finish Properties
- Additional performance aspects can be added to the New GIB® Fire Rated Systems 2012 through the substitutions in the table below

CUSTOMISED DESIGN SOLUTIONS

The systems detailed in this book should cover most common situations where fire resistance is required.

However, for special projects where specific performance is necessary, GIB® Technical Services can assist you to develop a customised solution. Simply contact us through the GIB® Helpline on 0800 100 442.

Winstone Wallboards Ltd accepts no liability if GIB® Fire Rated Systems are not used in accordance with instructions contained in this publication.

SPECIFIED GIB® PLASTERBOARD	ACCEPTABLE ALTERNATE GIB® PLASTERBOARDS				
	GIB® STANDARD	GIB BRACELINE® GIB NOISELINE®	GIB AQUALINE®	GIB TOUGHLINE®	GIB ULTRALINE®
10mm GIB FYRELINE®	13mm	10mm or 13mm	10mm or 13mm	13mm	10mm or 13mm
13mm GIB FYRELINE®	N/A	13mm	13mm	13mm	N/A



GIB® FIRE RATED SYSTEMS - SUMMARY TABLE

FIRE RATED WALL SYSTEMS – TWO WAY FRR – TIMBER FRAME

SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	STC	LINING REQUIREMENTS EACH SIDE OF FRAME	WEIGHT OF SYSTEM (kg/m ²)	PAGE
GBT 15	NLB	-/15/15	36	1 layer 10mm GIB® Standard	22	10
GBTL 15	LB	15/15/15	36	1 layer 10mm GIB® Standard	22	10
GBT 30a	NLB	-/30/30	36	1 layer 10mm GIB Fyrelite®	22	11
GBTL 30	LB	30/30/30	36	1 layer 10mm GIB Fyrelite®	22	11
GBT 30b	NLB	-/30/30	36	1 layer 13mm GIB® Standard	26	12
GBTL 30b	LB	30/30/30	36	1 layer 13mm GIB® Standard	26	12
GBT 60a	NLB	-/60/60	36	1 layer 13mm GIB Fyrelite®	27	13
GBTL 60	LB	60/60/60	36	1 layer 13mm GIB Fyrelite®	27	13
GBTL 60b	LB	60/60/60	42	2 layers 10mm GIB Fyrelite®	39	14
GBT 90	NLB	-/90/90	37	1 layer 16mm GIB Fyrelite®	36	15
GBTL 90	LB	90/90/90	37	1 layer 16mm GIB Fyrelite®	36	15
GBT 120a	NLB	-/120/120	43	2 layers 13mm GIB Fyrelite®	47	16
GBT 120b	NLB	-/120/120	35	1 layer 19mm GIB Fyrelite®	43	17
GBTL 120	LB	120/120/120	46	2 layers 16mm GIB Fyrelite®	65	18
GBT 180	NLB	-/180/180	46	2 layers 16mm GIB Fyrelite®	65	19

FIRE RATED WALL SYSTEMS – TWO WAY FRR – STEEL FRAME

SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	STC	LINING REQUIREMENTS EACH SIDE OF FRAME	WEIGHT OF SYSTEM (kg/m ²)	PAGE
GBSL 15	LB	15/15/15	34	1 layer 13mm GIB® Standard	22	20
GBS 30	NLB	-/30/30	34	1 layer 13mm GIB® Standard	22	21
GBSL 30a	LB	30/30/30	41	1 layer 16mm GIB Fyrelite®	29	22
GBSL 30b	LB	30/30/30	44	2 layers 10mm GIB Fyrelite®	32	22
GBS 60	NLB	-/60/60	34	1 layer 13mm GIB Fyrelite®	23	23
GBSL 60a	LB	60/60/60	42	1 layer 19mm GIB Fyrelite®	32	24
GBSL 60b	LB	60/60/60	45	2 layers 13mm GIB Fyrelite®	38	24
GBS 90	NLB	-/90/90	41	1 layer 16mm GIB Fyrelite®	29	25
GBSL 90	LB	90/90/90	45	1 layer 16mm GIB Fyrelite® + 1 layer 13mm GIB Fyrelite®	42	26
GBS 120	NLB	-/120/120	42	1 layer 19mm GIB Fyrelite®	32	27
GBS 120a	NLB	-/120/120	47	2 layers 16mm GIB Fyrelite®	29	28
GBS 240	NLB	-/240/240	44	4 layers 19mm GIB Fyrelite® (Refer to specification for layout)	65	29

FIRE RATED WALL SYSTEMS – ONE WAY FRR – TIMBER OR STEEL FRAME

SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	LINING REQUIREMENTS ONE SIDE OF FRAME	PAGE
GBUW 15	LB/NLB	(15)/15/15	1 layer 13mm GIB® Standard	31
GBUW 30a	LB/NLB	(30)/30/30	1 layer 16mm GIB Fyrelite®	32
GBUW 30b	LB/NLB	(30)/30/30	2 layers 10mm GIB Fyrelite®	32
GBUW 60a	LB/NLB	(60)/60/60	2 layers 13mm GIB Fyrelite®	33
GBUW 60b	LB/NLB	(60)/60/60	1 layer 16mm GIB Fyrelite® + 1 layer 13mm GIB Fyrelite®	33
GBUW 90	LB/NLB	(90)/90/90	1 layer 16mm GIB Fyrelite® + 1 layer 19mm GIB Fyrelite®	34
GBUW 120	LB/NLB	(120)/120/120	2 layers 19mm GIB Fyrelite®	35

Note: The STC values shown above relate to non insulated cavities.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



GIB® FIRE RATED SYSTEMS - SUMMARY TABLE

FIRE RATED FLOOR/CEILING SYSTEMS

SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	STC	IIC	LINING REQUIREMENTS TO UNDERSIDE OF SUPPORT FRAME	WEIGHT OF SYSTEM (kg/m ²)	PAGE
GBFC 15	LB	15/15/15	38	31	Timber joists with 1 layer 13mm GIB® Standard	40	36
GBSJ 30	LB	30/30/30	34	30	Steel joists with 1 layer 13mm GIB Fyrelime®	38	37
GBFC 45	LB	45/45/45	39	32	Timber joists with 1 layer 13mm GIB Fyrelime®	44	38
GBCJ30	LB	30/30/30	39	32	Composite joists with 1 layer 13mm GIB Fyrelime®	40	39
GBCJ 45	LB	45/45/45	39	32	Composite joists with 1 layer 13mm GIB Fyrelime®	40	39
GBFC 60	LB	60/60/60	39	32	Timber joists with 1 layer 16mm GIB Fyrelime®	46	40
GBSJ 60	LB	60/60/60	39	32	1 layer 16mm GIB Fyrelime®	40	41
GBCJ 60	LB	60/60/60	39	32	Composite joists with 1 layer 16mm GIB Fyrelime®	44	42
GBFC 90	LB	90/90/90	41	34	Timber joists with 2 layers 16mm GIB Fyrelime®	63	43
GBFC 120	LB	120/120/120	–	–	Timber or steel joists with 2 layers 19mm GIB Fyrelime®	–	44

FIRE RATED FLOOR/CEILING SYSTEMS – SUSPENDED GRID

SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	STC	IIC	LINING REQUIREMENTS TO UNDERSIDE OF SUPPORT FRAME	WEIGHT OF SYSTEM (kg/m ²)	PAGE
GBSC 30	LB	30/30/30	48	43	Timber joists with Rondo® Key-lock™ or USG ScrewFix™ suspension system & 1 layer 13mm GIB Fyrelime® (back blocked)	50	45
GBSC 60a	LB	60/60/60	53	43	Timber joists with Rondo® Key-lock™ or USG ScrewFix™ suspension system & 2 layers 13mm GIB Fyrelime®	60	46
GBSC 60b	LB	60/60/60	50	43	Timber joists with USG Drywall Grid suspension system & 1 layer of 16mm GIB Fyrelime®	54	47
GBSC 90	LB	90/90/90	53	43	Timber joists with USG Drywall Grid suspension system & 1 layer of 13mm GIB® Fyrelime® & 1 layer of 16mm GIB Fyrelime	64	48

FIRE RATED CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	LINING REQUIREMENTS TO UNDERSIDE OF SUPPORT FRAME	PAGE
GBUC 15	LB/NLB	(15)/15/15	1 layer 13mm GIB Fyrelime®	49
GBUC 30	LB/NLB	(30)/30/30	1 layer 16mm GIB Fyrelime®	50
GBUC 45	LB/NLB	(45)/45/45	2 layers 13mm GIB Fyrelime®	51
GBUC 60	LB/NLB	(60)/60/60	1 layer 16mm GIB Fyrelime® + 1 layer 13mm GIB Fyrelime®	52
GBUC 90	LB/NLB	(90)/90/90	2 layers 19mm GIB Fyrelime®	53
GBUC120	LB/NLB	(120)/120/120	2 layers 19mm GIB Fyrelime®	53

FIRE RATED RISERS, SHAFTS AND DUCTS

SPECIFICATION REFERENCE	LOAD BEARING CAPABILITY	FRR	PAGE
GIB® Fyreduct™	NLB	-/30/30, -/60/60, -/90/90, -/120/120	54
GIB® Ventshaft	NLB	-/60/60	58
GIB® Shaftwall	NLB	-/30/30, -/60/60, -/90/90, -/120/120	61

FIRE RATED STEEL BEAMS AND COLUMNS (GIB FYRELIME® LININGS ON TIMBER STRAPPING OR STEEL CLIP & CHANNEL)

FIRE RATINGS AVAILABLE	PAGE
15, 30, 60, 90, 120 minutes	64-65

Note: The STC and IIC values shown for Floor/Ceiling systems and Suspended Grid Floor/Ceilings relate to bare particle board flooring without fibreglass between the joists.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



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INTRODUCTION

COMPLIANCE WITH THE NEW ZEALAND BUILDING CODE (NZBC)

NZBC Clause B2 – Durability

Under normal conditions of dry internal use GIB® Fire Rated Systems have a serviceable life in excess of 50 years and satisfy the requirements of NZBC Clause B2 – Durability.

NZBC Clauses C1 – C6 Protection from Fire

GIB® Fire Rated Systems can be used to provide passive fire protection in accordance with the requirements of NZBC Clauses C1 - C6 – Protection from Fire.

NZBC Clause C6 – Structural Stability

In order to satisfy the requirements of this clause, designers must ensure that fire rated elements are supported by elements having at least the same Fire Resistance Rating (FRR). Collapse of elements having a lesser FRR shall not cause the consequential collapse of elements required to have a higher FRR.

NZBC C/AS1 - 7 (2012) now makes clear distinction between 'structural adequacy' and 'stability'. *Structural adequacy* is the first number in the x/x/x FRR sequence and simply relates to the ability of a specimen to resist a vertical load applied in the standard furnace test for fire resistance. *Stability* relates to the support provided to a building element having a FRR. The *stability* of an element having a FRR often depends on other elements, such as a column supporting a floor or a section of wall providing lateral support to a firecell boundary wall. Although the supporting element itself may not provide firecell separation, it still needs a FRR no less than the element for which it is providing *stability* in order to avoid consequential collapse.

Simply selecting a FRR may not be appropriate when an element, providing *stability*, does not form part of a firecell boundary and is located entirely within a firecell. A FRR is by definition a result against a standard furnace test for fire resistance where a wall or floor/ceiling specimen is exposed from one side only. A wall located entirely within a firecell will potentially be exposed to fire from more sides simultaneously. In this case 'universal' or 'one way' lining protection may need to be provided to all relevant sides. If the wall provides a lateral support or a bracing function and is located within a firecell, then the bracing system must be protected with a 'universal' or 'one way' lining system.

NZBC Clause G6 – Airborne and Impact Sound

For many specifications in the technical literature Sound Transmission Class (STC) and Impact Insulation Class (IIC) performances are given. For higher performances, including those required by NZBC Clause G6 – Airborne and Impact Sound, reference should be made to the current version of 'GIB® Noise Control Systems'.

HANDLING AND LIMITATIONS

GIB® plasterboard must be stacked flat and protected from the weather.

GIB® plasterboard must be handled as a finishing material.

GIB® plasterboard linings in use must not be exposed to liquid water or be installed in situations where extended exposures to humidity above 90% RH can reasonably be expected.

Adhesive fixing can not be used as an alternative to mechanical fasteners in GIB® fire rated specifications.

In normal use GIB® plasterboard must not be exposed to temperatures in excess of 52° C for prolonged periods.

APPRAISAL AND QUALITY CONTROL

This document has been appraised by the Building Research Association of New Zealand (BRANZ), Appraisal No. 289 [2012] GIB® Fire Rated Systems, 2012.

The FRRs of specifications published in the document have been obtained by independent testing or assessment sourced from organisations with accredited quality assurance. It is of prime importance to comply with the details of design, construction and workmanship in this document.

GIB® plasterboard is manufactured to strict quality standards and formulations are uniform nation-wide. All GIB® branded accessory products are the subject of ongoing quality control to ensure consistency of supply.

To allow positive identification of GIB Fyrelite® on site, the face paper of the board is coloured pink.

SUBSTITUTION

When 10mm GIB Braceline® / Noiseline®, 10mm GIB Ultraline®, 10mm GIB Aqualine® or 13mm GIB Standard are substituted in place of 10mm GIB Fyrelite®, the FRR of that system will be maintained.

Similarly the FRR is maintained when 13mm GIB Braceline® / Noiseline®, 13mm GIB Toughline®, or 13mm GIB Aqualine® are substituted for 13mm GIB Fyrelite®.

Otherwise, achieving the FRR of GIB® Fire Rated Systems depends on closely following the detailed specifications. Installation of systems outside their stated scope of application, or substituting components, may compromise fire safety.



INTRODUCTION

STRUCTURAL STEEL MEMBERS IN CAVITIES

Structural steel members are sometimes located inside the cavity of a GIB® fire rated system, such as a column in a wall or beam in a floor/ceiling cavity. The FRR of a wall or floor/ceiling system applies across the entire element, from the exposed face to the un-exposed side. Temperatures inside the cavity can rise to levels above the critical temperature for some steel members and it can not be automatically assumed that a structural steel member achieves the structural endurance rating of the cavity system within which it is contained. For guidance on the protection of steel columns and beams refer to the appropriate section of this document. For further assistance contact the GIB® Helpline 0800 100 442.

TIMBER FRAMED WALLS

Load-bearing and non load-bearing walls

Consult the current edition of NZS3604 to determine framing dimensions and wall heights for load-bearing and non load-bearing walls. Beyond these limits specific engineering design is required.

Under no circumstances shall the framing spacing be more or the timber dimensions be less than those specified for the relevant GIB® specification.

STEEL FRAMED WALLS

Non load-bearing walls

Wall heights greater than the specified limit for the relevant GIB® specification are the subject of specific design for serviceability and fire design criteria. Consult the framing supplier for serviceability criteria. For fire design criteria contact the GIB® Helpline 0800 100 442.

Load-bearing walls

The solutions provided in this technical literature for load-bearing steel stud walls are conservatively based on limiting stud temperature. More accurate predictions can be made if the applied stud load (at the time of the fire) and stud capacity (at ambient temperature) are known, using the equation:

$FRR(LB) = FRR(NLB) \times (1 - \text{Applied Load} / \text{Capacity})$, where;

FRR (LB) is the calculated FRR of the load-bearing wall

FRR (NLB) is the FRR of the non load-bearing wall with equivalent linings

Applied Load is the applied stud load at the time of the fire (kN/stud)

Capacity is the stud capacity at ambient temperature (kN/stud)

Example:

A load-bearing steel frame has a capacity (ambient) of 12 kN / stud and a fire design load of 4 kN / stud.

The linings are 13mm GIB Fyrelite® each side of the frame installed in accordance with the equivalent non load-bearing specification GBS60. The FRR of the load-bearing system can be estimated as follows;

$FRR(LB) = 60 \times (1 - 4 / 12) = 60 \times 2/3 = 40$ minutes, or

FRR 40/40/40.

FLOOR/CEILING SYSTEMS

Floor/ceiling systems have generally been tested for a design load of 3 kPa at a span of 4 metres. For floor joist span tables consult the latest version of NZS3604 or supplier information with respect to proprietary joists.

Flooring shall be minimum 20 mm particle board complying with AS/NZS 1860 Part 1:2002 Particleboard flooring – Specifications, or minimum 17 mm plywood manufactured to AS/NZS 2269 Part 0:2008 Plywood – Structural - Specifications.

Do not increase joist or nog spacing from what has been specified.

Do not decrease joist dimensions from what has been specified.

Do not exceed the maximum permissible design stress.

Do not substitute alternative type joist to those specified.

SURFACE FINISH PROPERTIES

All paper-faced GIB® 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.

FIRE RESISTANCE OF CLAD WALLS

Where GIB® fire rated specifications are clad with any of the following materials the lining may be left unstopped;

Timber or wood based products

Steel, flat or profiled

Fibre cement sheets or boards

Insulation and finish systems (EIFS).

As an alternative to plaster stopping, sheet joints in ceiling voids can be covered with a minimum 150 mm wide strip of GIB® plasterboard, centrally placed over the sheet joint, and screw fixed to the underlying framing at no more than 300 mm centres.

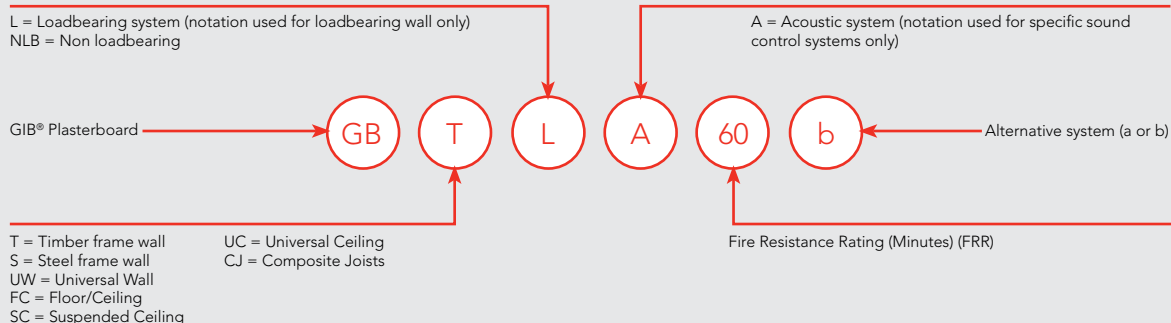
Note that any GIB® plasterboard installed on the external face of a frame must be protected from the weather during installation and in-service. An exterior cladding over the GIB® plasterboard must comply with the current version of NZBC E2/AS1 and be installed over a flexible wall underlay and drained cavity complying with E2/AS1.



INTRODUCTION

SPECIFICATION REFERENCE

System Example



FRR Example



FIRE RESISTANCE RATING (FRR)

i) Structural adequacy – to prevent collapse of structural (primary) elements during a fire. Brackets, e.g. (30)/30/30 indicate that the system may be loadbearing or non-loadbearing depending on the design.

Dash (-) indicates a nil rating, e.g. -/30/30 is NLB

ii) Integrity – To prevent the passage of flame or hot gases through the fire separations or external wall or roofs.

iii) Insulation – To prevent the transmission of heat to other firecells or adjacent property.

SUSTAINABILITY AND THE ENVIRONMENT

Winstone Wallboards is committed to protecting the environment. Environmental matters are integrated into all business activities:

All operations of Winstone Wallboards will strive to exceed all environmental regulatory requirements at all times.

Protection of the environment is a day to day responsibility that we all must accept.

We will allocate appropriate management time and resources to address relevant environmental issues and continuously improve our activities in that area.

We will achieve our standards of performance through positive action, employee involvement and constant communication with our neighbours, local authorities and customers.

Winstone Wallboards is the first manufacturer of plasterboard to have products certified as environmentally preferable through Environmental Choice New Zealand. The Environmental Choice label acknowledges the product as meeting or exceeding the voluntary environmental declaration standard set by the New Zealand Eco-labelling Trust. The standard is a comprehensive lifecycle assessment which is scientifically and internationally recognised.

The Environmental Choice Label covers all GIB® Plasterboard 13mm and greater in thickness.

Specify GIB® Plasterboard with the Environmental Choice label as this ensures that the product selected minimises the impact on the environment. Consideration should be given to minimising on-site waste when designing and/or installing GIB® Plasterboard systems. For larger projects consideration should be given to the utilisation of Winstone Wallboards cut-to-length service to reduce the volume of waste produced.

GIB® Plasterboard off-cuts, if separated from other waste building materials, can be readily recycled. For larger projects the waste can be diverted to compost manufacturers who grind up the GIB® Plasterboard and use it in compost. For smaller projects, the GIB® Plasterboard can be ground up and spread round the building site.

Note: A special cut to length service is available. Please call the GIB® Helpline for more information on this service.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 15	NBL	-/15/15	1 layer 10mm GIB® Standard each side	STC 36	22kg/m²
GBTL 15	LB	15/15/15			

FRAMING

GBT15 Non Loadbearing and GBTL15 Loadbearing

Framing to comply with;

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT15 Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL15 Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 10mm GIB® Standard Plasterboard each side of the frame.

Vertical or Horizontal fixing permitted. Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

Fastener Centres

300mm centres around the sheet perimeter.

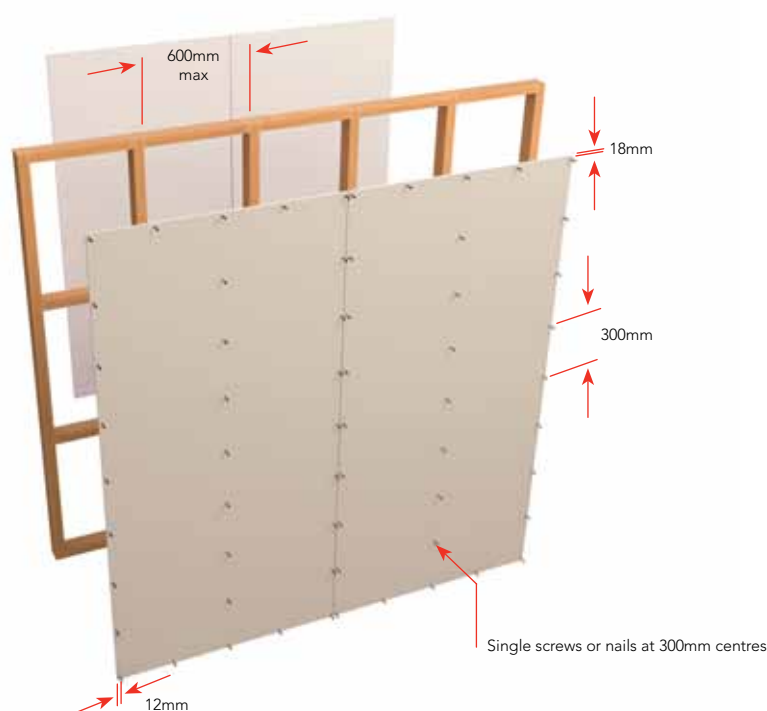
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws or nails at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ OR PHONE 0800 100 442



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 30a	NLB	-/30/30	1 layer 10mm GIB Fyreline® each side	STC 36	22kg/m ²
GBTL 30	LB	30/30/30			

FRAMING

GBT30a Non Loadbearing and GBTL30 Loadbearing

Framing to comply with;

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT30a Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL30 Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 10mm GIB Fyreline® each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

Fastener Centres

300mm centres around the sheet perimeter.

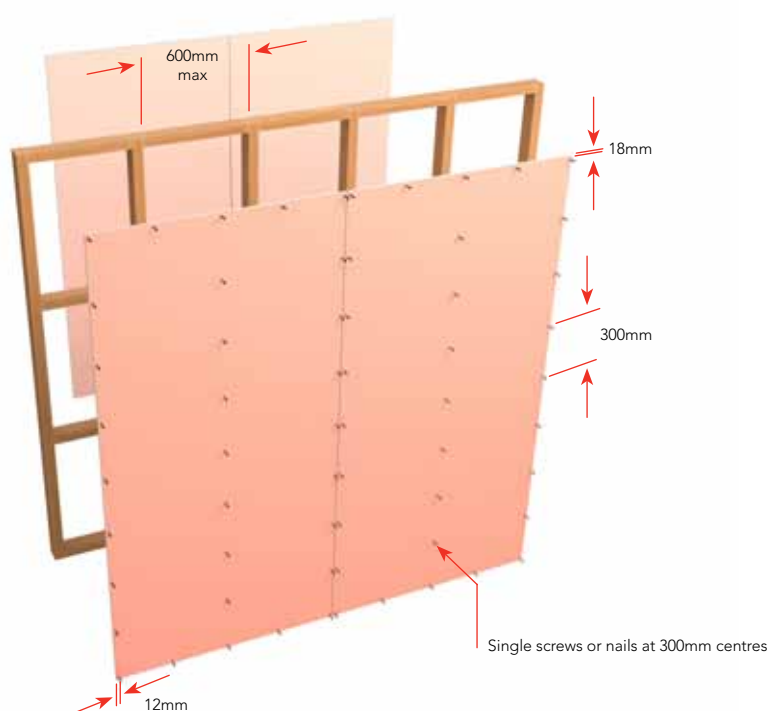
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws or nails at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 30b	NLB	-/30/30	1 layer 13mm GIB® Standard each side	STC 36	26kg/m ²
GBTL 30b	LB	30/30/30			

FRAMING

GBT30b Non Loadbearing and GBTL30b Loadbearing

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT30b Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL30b Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 13mm GIB® Standard Plasterboard each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

Fastener Centres

300mm centres around the sheet perimeter.

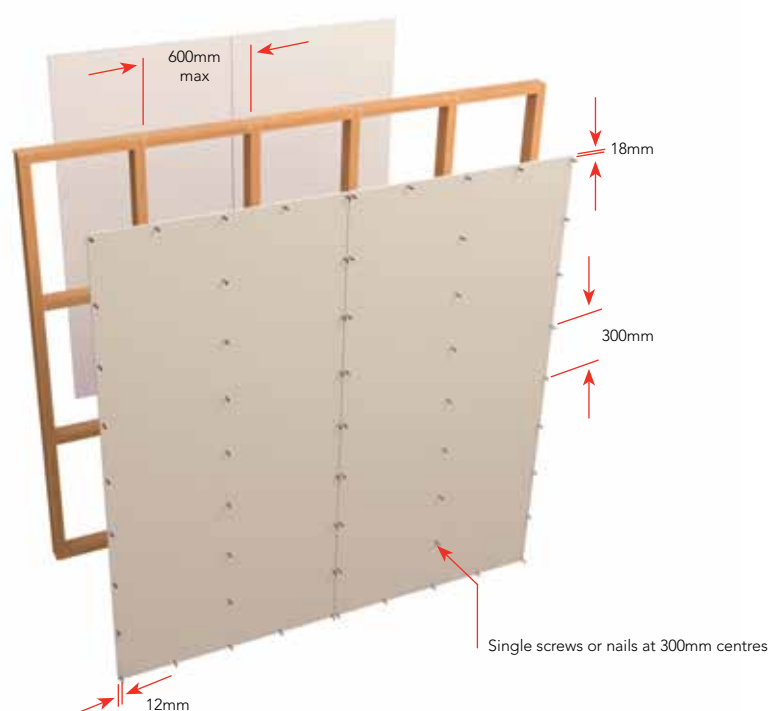
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws or nails at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 60a	NLB	-/60/60	1 layer 13mm GIB Fyreline® each side	STC 36	27kg/m ²
GBTL 60	LB	60/60/60			

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT60a Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL60 Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 13mm GIB Fyreline® each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

Fastener Centres

300mm centres around the sheet perimeter.

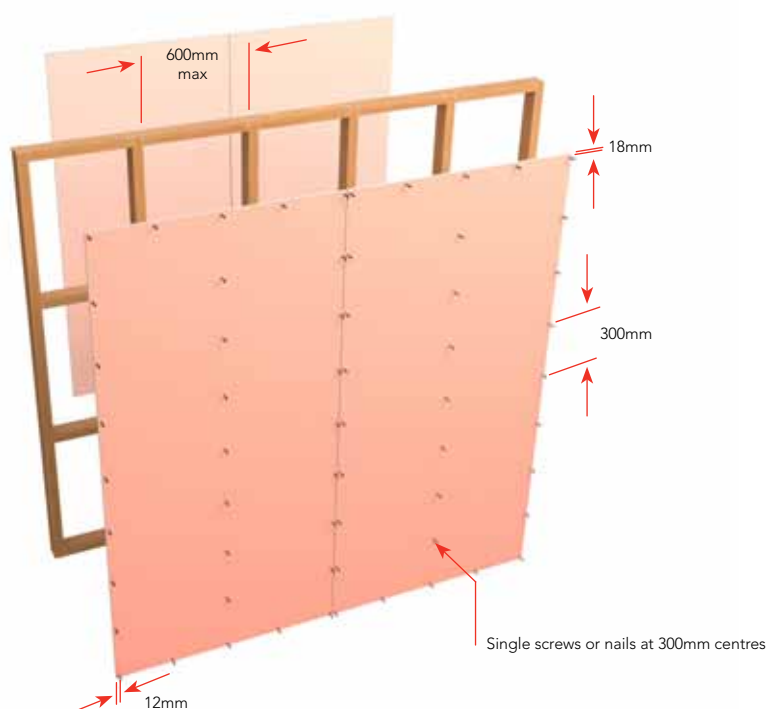
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws or nails at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBTL 60b	LB	60/60/60	2 layers 10mm GIB Fyreline® each side	STC 42	39kg/m ²

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

2 layers of 10mm GIB Fyreline® each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

Vertical joints of the second layer are staggered from joints in the first layer on the same side of the frame.

When sheet end butts joints are unavoidable, they must be formed over solid framing and staggered.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

INNER LAYER: 41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails.

OUTER LAYER: 51mm x 7g screws as above.

Fastener Centres

INNER LAYER: 600mm centres horizontally.

800mm centres vertically up each stud.

OUTER LAYER: 300mm centres around the sheet perimeter.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

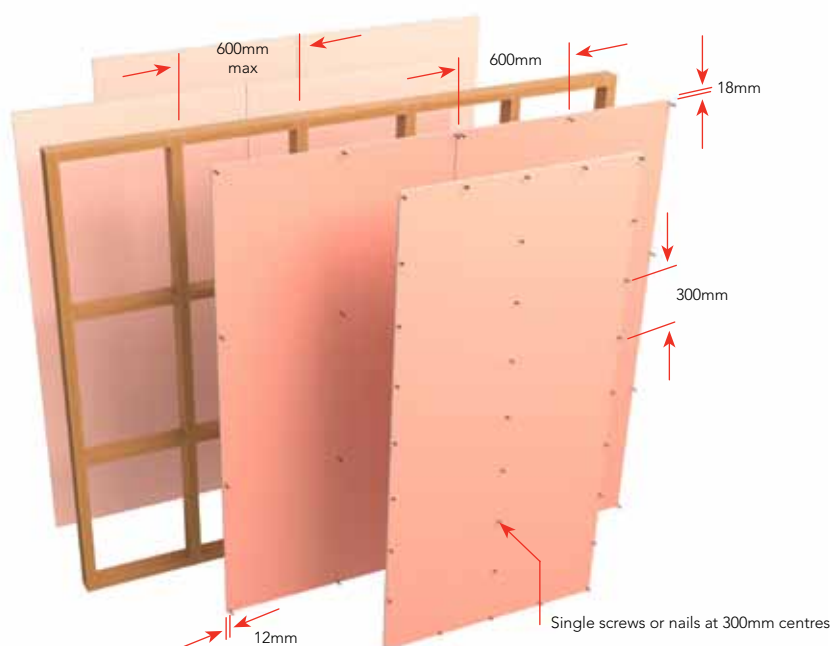
Single screws at 300mm centres to intermediate studs.

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 90	NLB	-/90/90	1 layer 16mm GIB Fyreline® each side	STC 37	36kg/m ²
GBTL 90	LB	90/90/90			

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

GBT90 Non Loadbearing – Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing partitions.

GBTL90 Loadbearing – Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

1 layer of 16mm GIB Fyreline® each side of the frame.

Vertical or Horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing vertically, full height sheets shall be used where possible.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

300mm centres around the sheet perimeter.

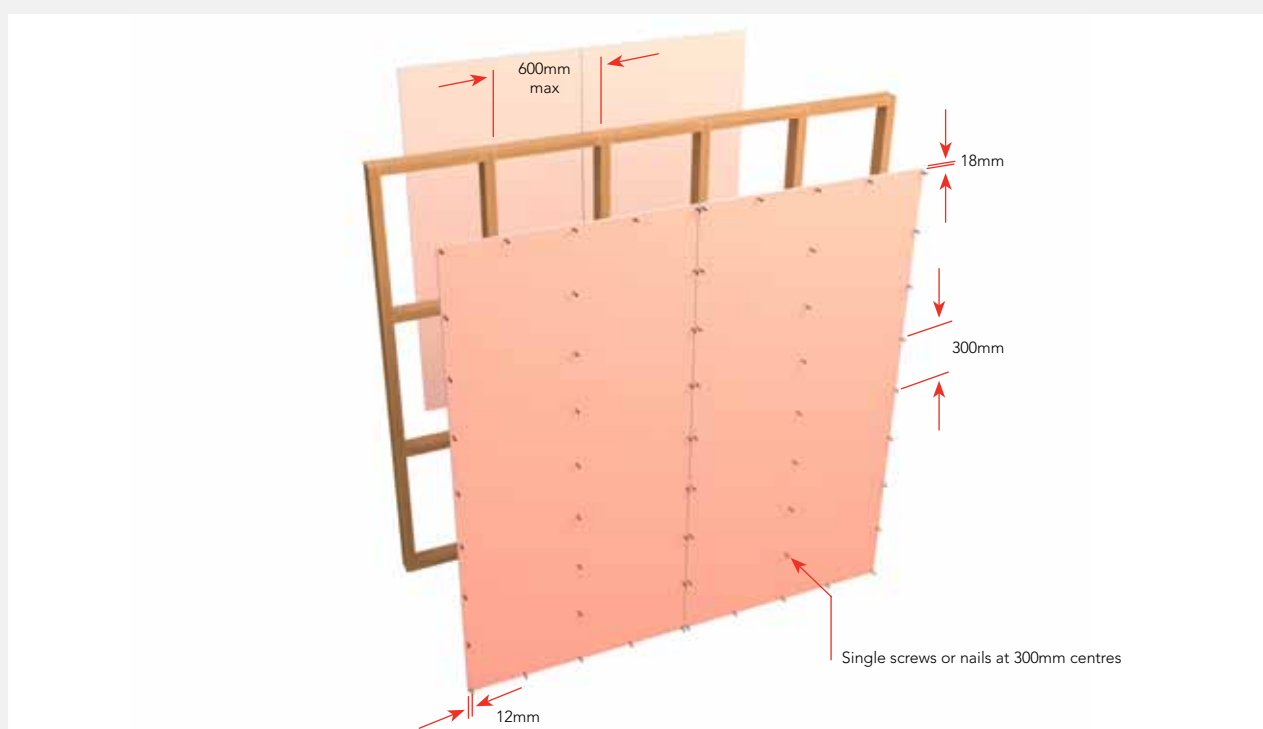
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATINGS	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT120a	NLB	-/120/120	2 layers 13mm GIB Fyrelite® each side	STC 43	47kg/m ²

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 800mm centres maximum

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing walls.

LINING

2 layers of 13mm GIB Fyrelite® each side of the frame.

Vertical fixing only permitted. Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Vertical joints of the second layer are staggered from joints in the first layer on the same side of the frame.

When sheet end butt joints are unavoidable, they must be formed over solid framing with those of the first layer staggered from those of the second layer.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

INNER LAYER: 51mm x 7g GIB® Grabber® High Thread Drywall Screws.

OUTER LAYER: 63mm x 8g GIB® Grabber® Self Tapping Screws.

Fastener Centres

INNER LAYER: 600mm centres horizontally.

800mm centres vertically up each stud

OUTER LAYER: 300mm centres around the sheet perimeter.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

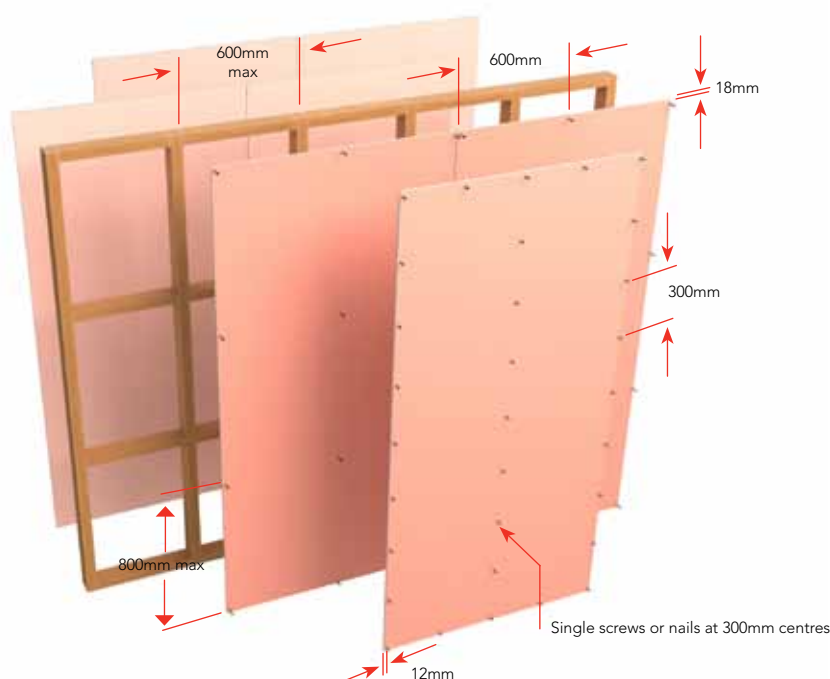
Single screws at 300mm centres to intermediate studs.

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ OR PHONE 0800 100 442



FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 120b	NLB	-/120/120	1 layer 19mm GIB Fyreline® each side	STC 35	43kg/m ²

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 1200mm centres for Horizontal fixing

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing walls.

LINING

1 layer of 19mm GIB Fyreline® each side of the frame.

Vertical or horizontal fixing permitted.

Sheets shall be touch fitted.

When fixing sheets vertically, full height sheets shall be used where possible.

All sheet joints must be formed over.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

300mm centres around the sheet perimeter.

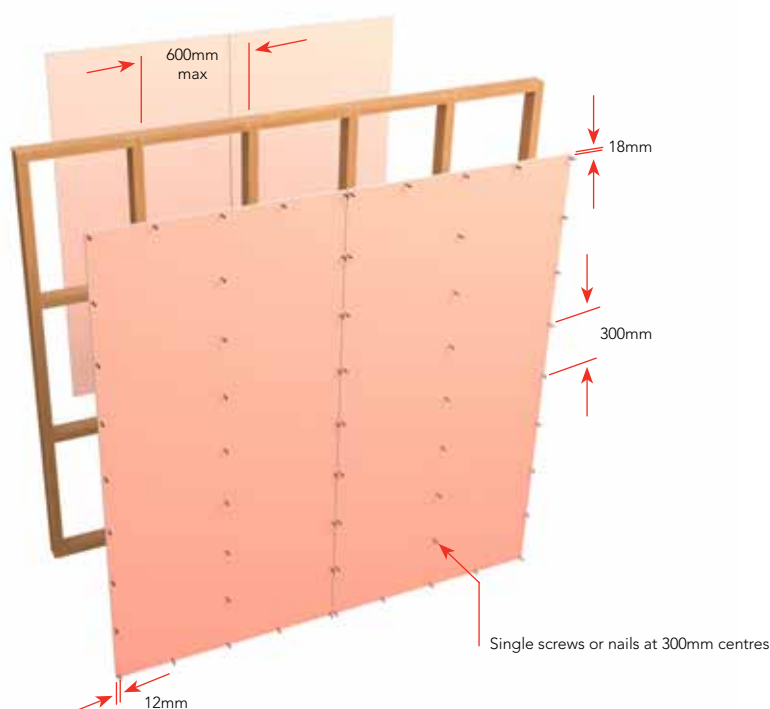
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

Single screws at 300mm centres to intermediate studs.

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBTL 120	LB	120/120/120	2 layers 16mm GIB Fyrelite® each side	STC 46	65kg/m ²

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Studs at 600mm centres maximum
- Nogs at 800mm centres maximum

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud and top plate tables for loadbearing walls.

LINING

2 layers of 16mm GIB Fyrelite® each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they must be formed over solid framing and staggered from horizontal joints in the first layer.

Joints of the outer layer are staggered from sheet end butt joints in the first layer.

All sheet joints must be formed over solid timber framing.

FASTENING THE LINING

Fasteners

INNER LAYER: 51mm x 7g GIB® Grabber® High Thread Drywall Screws.

OUTER LAYER: 63mm x 8g GIB® Grabber® Self Tapping Screws.

Fastener Centres

INNER LAYER: 600mm centres vertically up each stud 400mm centres horizontally along top and bottom plates.

OUTER LAYER: 300mm centres around the sheet perimeter.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

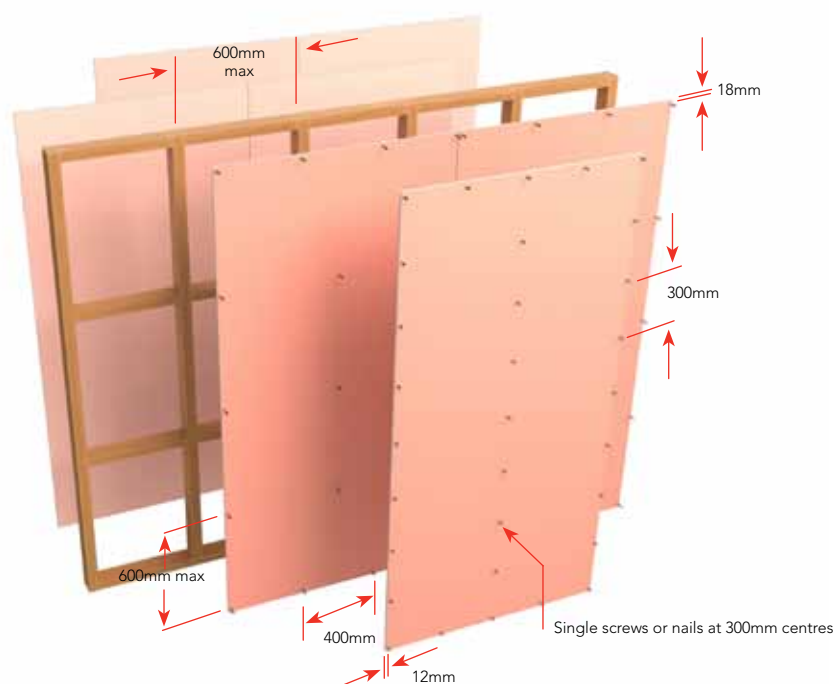
Single screws at 300mm centres to intermediate studs.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

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FIRE RATED WALL SYSTEMS

TWO WAY FRR - TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBT 180	NLB	-/180/180	2 layers 16mm GIB Fyreline® each side	STC 46	65kg/m ²

FRAMING

Framing to comply with,

- NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)
- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602).
- Studs at 600mm centres maximum
- Nogs at 800mm centres maximum

WALL HEIGHTS AND FRAMING DIMENSIONS

Framing dimensions and height as determined by NZS 3604 stud tables for non loadbearing walls.

LINING

2 layers of 16mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted. Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Vertical joints of the second layer are staggered from joints in the first layer on the same side of the frame.

When sheet end butt joints are unavoidable, they must be formed over solid framing with those of the first layer.

FASTENING THE LINING

Fasteners

INNER LAYER: 51mm x 7g GIB® Grabber® High Thread Drywall Screws.

OUTER LAYER: 63mm x 8g GIB® Grabber® Self Tapping Screws.

Fastener Centres

INNER LAYER: 600mm centres horizontally.

800mm centres vertically up each stud.

OUTER LAYER: 150mm centres around the sheet perimeter.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

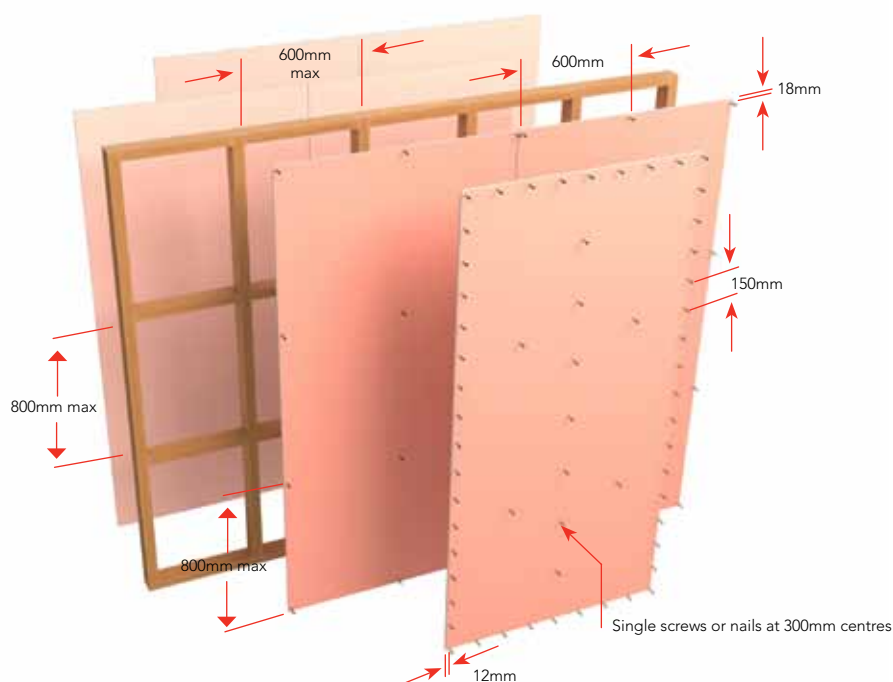
Single screws at 300mm centres to intermediate studs and to the centre of each nog.

JOINTING

FIRST LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBSL 15	LB	15/15/15	1 layer 13mm GIB® Standard each side	STC 34	22kg/m ²

FRAMING AND WALL HEIGHT

Any steel frame designed to meet structural criteria for strength and serviceability under dead and live loads.

Stud width shall be 35mm minimum.

Stud spacing at 600mm centres maximum. Frame height as determined by specific design.

LINING

1 layer of 13mm GIB® Standard Plasterboard each side of the frame.

Vertical fixing. Full height sheets shall be used where possible.

Horizontal fixing is permitted as long as all longitudinal sheet joints are formed over nogs.

Sheets shall be touch fitted.

Offset joints between sheets on opposite sides of the frame.

When sheet end butt joints are unavoidable, they shall be fixed at 200mm centres and formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

25mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

300mm centres up each stud.

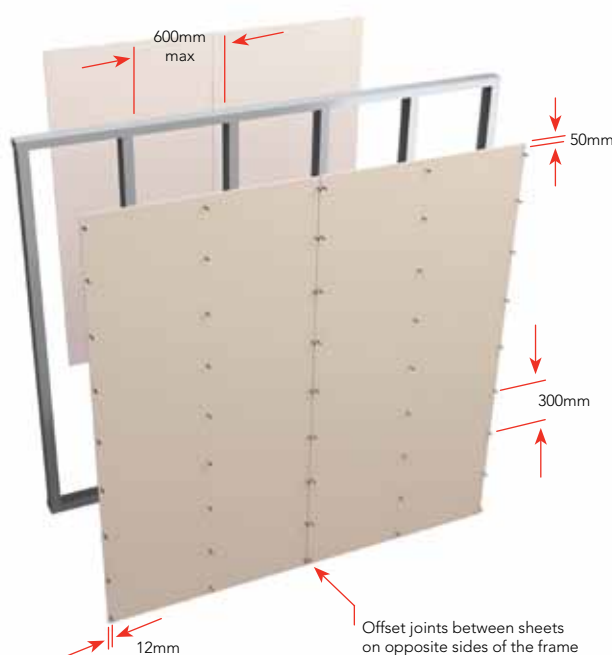
Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

Note: See also page 8, "Loadbearing Steel Framed Walls".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



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FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 30	NLB	-/30/30	1 layer 13mm GIB® Standard each side	STC 34	22kg/m ²

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel track dimensions to be 64 x 30 x 0.55mm nominal.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 2700mm.

Higher walls are the subject of specific engineering design.

Note: If lighter BMT steel studs are used, verification of performance must be obtained from the supplier of the framing system.

LINING

1 layer of 13mm GIB® Standard Plasterboard each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets on opposite sides of the frame. Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

25mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

300mm centres up each stud.

Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

Fastening the linings to top and bottom tracks is permitted as long as the fasteners do not connect the studs and tracks.

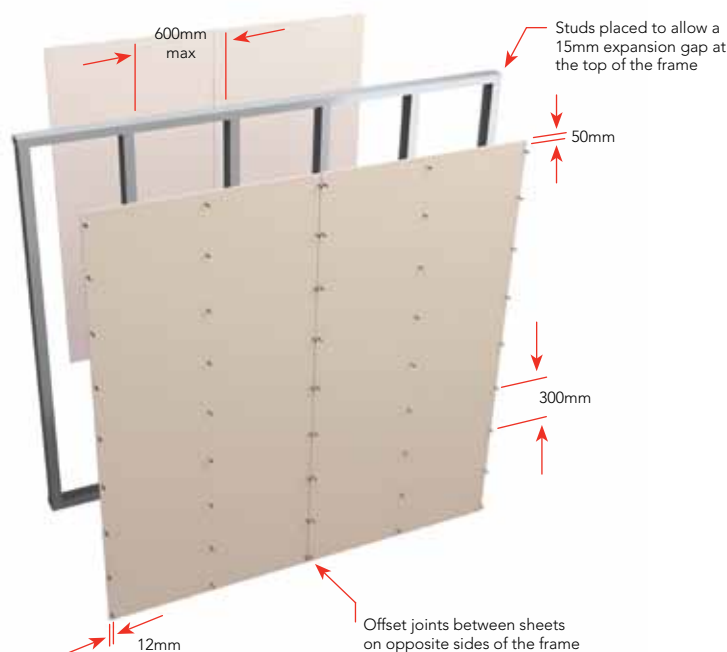
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBSL 30a	LB	30/30/30	1 layer 16mm GIB Fyrelite® each side	STC 41	29kg/m ²
GBSL 30b			2 layers 10mm GIB Fyrelite® each side	STC 44	32kg/m ²

FRAMING AND WALL HEIGHT

Any steel frame designed to meet structural criteria for strength and serviceability under dead and live loads.

Stud width shall be 35mm minimum.

Stud spacing at 600mm centres maximum. Frame height as determined by specific design.

LINING

GBSL 30a – 1 layer of 16mm GIB Fyrelite® each side of the frame.

GBSL 30b – 2 layers of 10mm GIB Fyrelite® each side of the frame.

Vertical fixing.

Horizontal fixing is permitted as long as all longitudinal sheet joints are formed over nogs.

Sheets shall be touch fitted.

Offset joints on opposite sides of the frame and between sheets in double layered systems.

Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be fixed at 200mm centres and formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

GBSL 30a – 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

GBSL 30b inner layer – 25mm x 6g screws as above.

GBSL 30b outer layer – 32mm x 6g screws as above.

Fastener Centres

Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

INNER LAYER: 600mm centres up each stud.

OUTER OR SINGLE LAYER: 300mm centres up each stud.

JOINTING

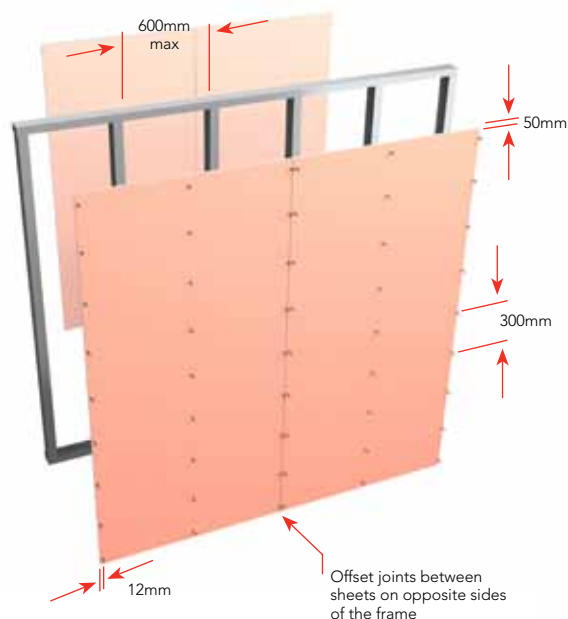
INNER LAYER: Unstopped.

SINGLE OR OUTER LAYERS: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

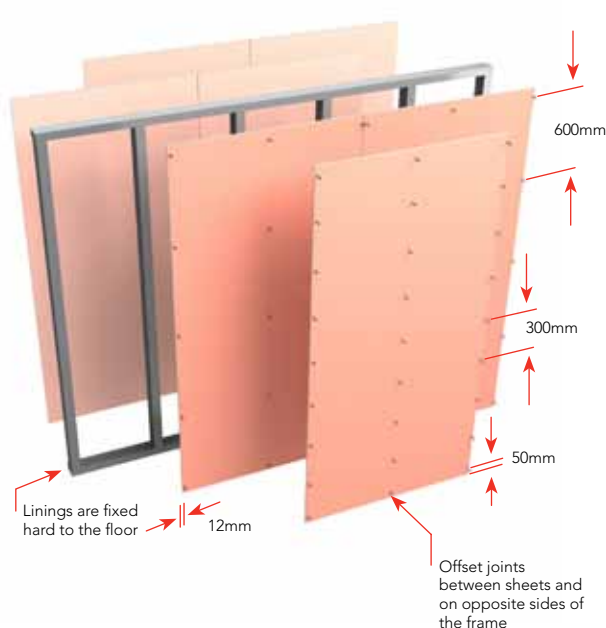
Note: See also page 8, "Loadbearing Steel Framed Walls".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GBSL 30a



GBSL 30b





FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 60	NLB	-/60/60	1 layer 13mm GIB Fyreline® each side	STC 34	23kg/m ²

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel channel dimensions to be 64 x 30 x 0.55mm nominal.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 2700mm.

Higher walls are the subject of specific engineering design.

Note: If lighter BMT steel studs are used, verification of performance must be obtained from the supplier of the framing system.

LINING

1 layer of 13mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets on opposite sides of the frame. Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be

formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

25mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

300mm centres up each stud.

Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

Fastening the linings to top and bottom tracks is permitted as long as the fasteners do not connect the studs and tracks.

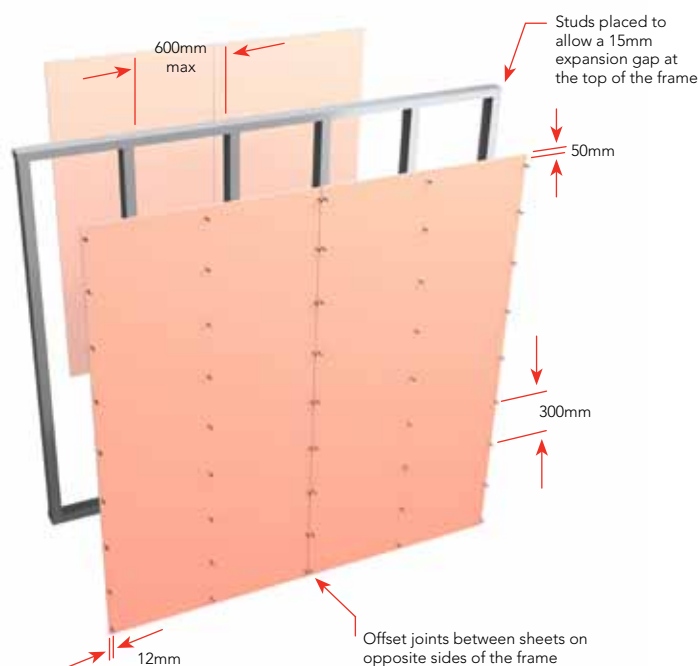
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBSL 60a	LB	60/60/60	1 layer 19mm GIB Fyreline® each side	STC 42	32kg/m ²
GBSL 60b			2 layers 13mm GIB Fyreline® each side	STC 45	38kg/m ²

FRAMING AND WALL HEIGHT

Any steel frame designed to meet structural criteria for strength and serviceability under dead and live loads.

Stud width shall be 35mm minimum.

Stud spacing at 600mm centres maximum. Frame height as determined by specific design.

LINING

GBSL 60a – 1 layer of 19mm GIB Fyreline® each side of the frame.

GBSL 60b – 2 layers of 13mm GIB Fyreline® each side of the frame.

Vertical fixing. Full height sheets shall be used where possible.

Horizontal fixing is permitted as long as longitudinal sheet joints are formed over nogs

Sheets shall be touch fitted.

Offset joints on opposite sides of the frame and between sheets in double layered systems.

When sheet end butt joints are unavoidable, they shall be fixed at 200mm centres and formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners Centres

GBSL 60a – 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

GBSL 60b inner layer – 25mm x 6g screws as above.

GBSL 60b outer layer – 41mm x 6g screws as above.

Fastener Centres

Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

INNER LAYER: 600mm centres up each stud.

OUTER OR SINGLE LAYER: 300mm centres up each stud.

JOINTING

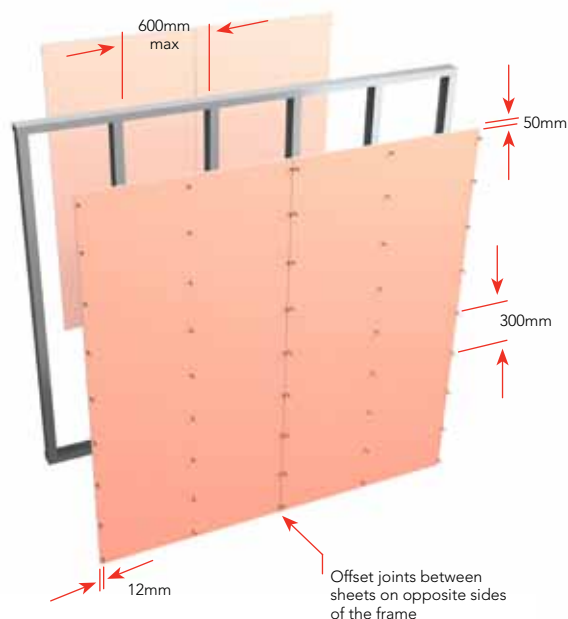
INNER LAYER: Unstopped.

SINGLE OR OUTER LAYERS: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

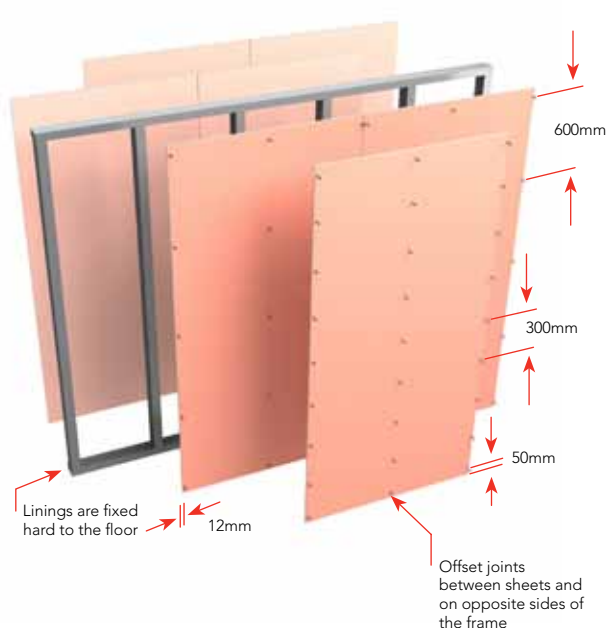
Note: See also page 8, "Loadbearing Steel Framed Walls".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GBSL 60a



GBSL 60b





FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 90	NLB	-/90/90	1 layer 16mm GIB Fyreline® each side	STC 41	29kg/m ²

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel channel dimensions to be 64 x 30 x 0.55mm nominal.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 2700mm.

Higher walls are the subject of specific engineering design.

Note: If lighter BMT steel studs are used, verification of performance must be obtained from the supplier of the framing system.

LINING

1 layer of 16mm GIB Fyreline® each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets opposite side of frame. Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

300mm centres up each stud.

Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

Fastening the linings to top and bottom tracks is permitted as long as the fasteners do not connect the studs and tracks.

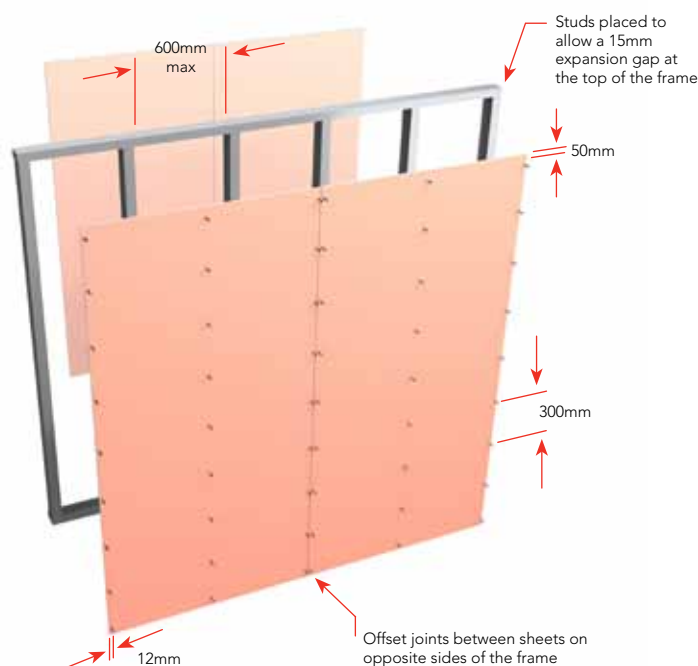
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBSL 90	LB	90/90/90	1 layer 16mm GIB Fyrelite® + 1 layer 13mm GIB Fyrelite® each side	STC 45	42kg/m ²

FRAMING AND WALL HEIGHT

Any steel frame designed to meet structural criteria for strength and serviceability under dead and live loads.

Stud width shall be 35mm minimum.

Stud spacing at 600mm centres maximum.

Frame height as determined by specific design.

LINING

1 layer of 16mm GIB Fyrelite® plus 1 layer of 13mm GIB Fyrelite® each side of the frame.

Vertical fixing. Full height sheets shall be used where possible.

Horizontal fixing is permitted as long as all longitudinal sheet joints are formed over nogs.

Sheets shall be touch fitted.

Offset joints on opposite sides of the frame and between sheets in double layered systems.

When sheet end butts joints are unavoidable, they shall be fixed at 200mm centres and formed over framing.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

INNER LAYER: 16mm GIB Fyrelite® – 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

OUTER LAYER: 13mm GIB Fyrelite® – 41mm x 6g screws as above.

Fastener Centres

Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

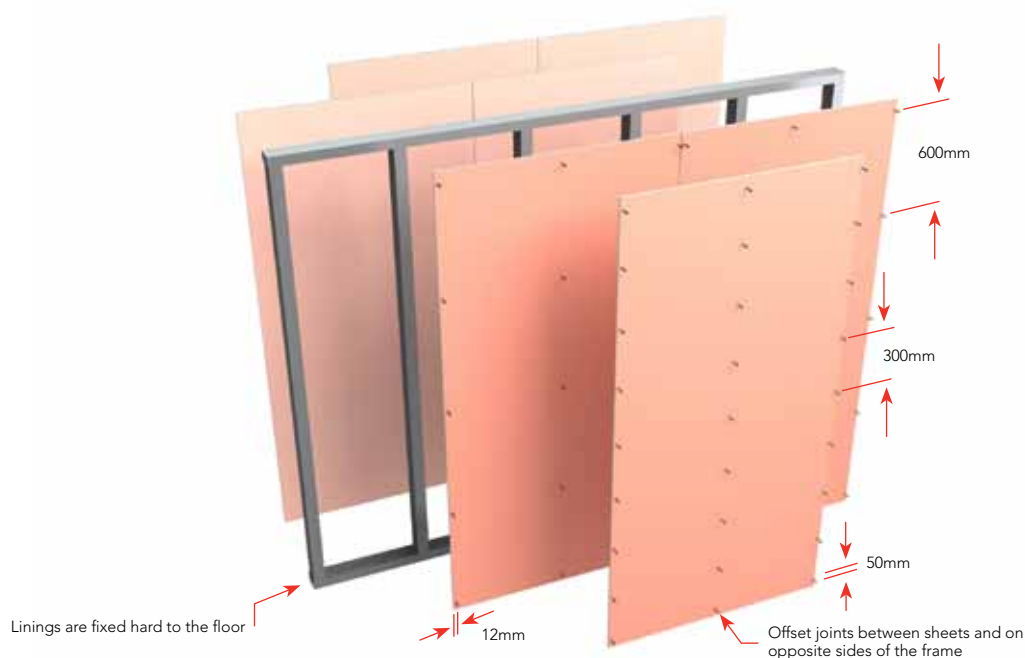
JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

Note: See also page 8, "Loadbearing Steel Framed Walls".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ OR PHONE 0800 100 442



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 120	NLB	-/120/120	1 layer 19mm GIB Fyrelite® each side	STC 42	32kg/m ²

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 100 x 42 x 0.95 mm nominal with a 10 mm return and matching minimum 30 mm deep top and bottom tracks.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 3000mm.

Higher walls are the subject of specific engineering design.

ALTERNATIVE FRAMING

A -/120/90 FRR is achieved with 64 x 34 x 0.55 mm framing, studs at 600 mm centres and a height not exceeding 3000 mm.

If -/120/120 FRR is required with 64 x 34 x 0.55 mm framing, then the 19 mm GIB Fyrelite® must be overlaid on both sides of the wall with a minimum of 10 mm GIB® Standard plasterboard fixed at 300 mm centres along each stud with 41mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Offset sheet joints between layers.

LINING

1 layer of 19mm GIB Fyrelite® each side of the frame.

Vertical fixing only permitted.

Offset joints between sheets on opposite sides of the frame.

Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they must be formed over nogs.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

200mm centres up each stud.

Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

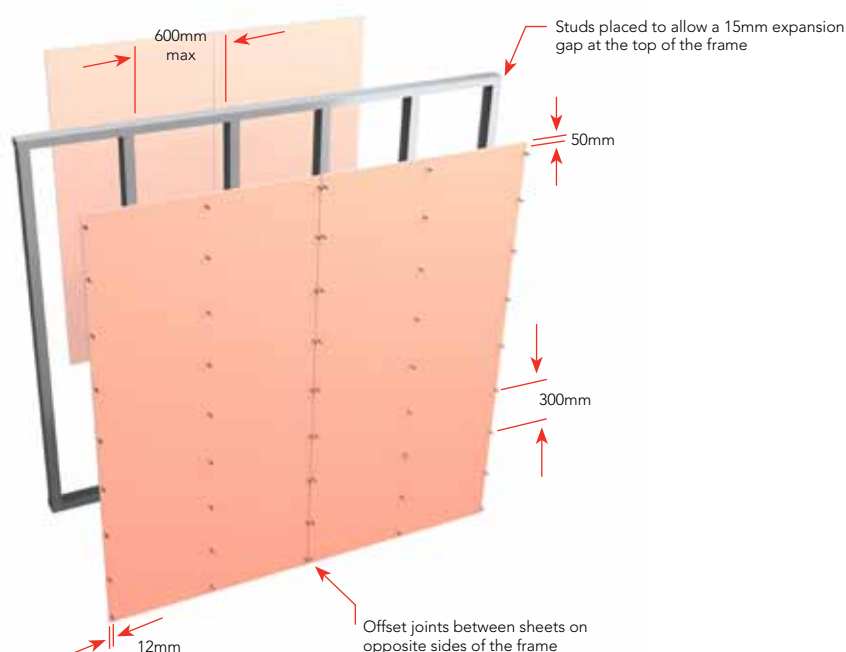
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 120a	NLB	-/120/120	2 layers 16mm GIB Fyrelite® each side	STC 47	29kg/m ²

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel channel dimensions to be 64 x 30 x 0.55mm nominal.

Top and bottom tracks are fixed to the floor and ceiling in true alignment.

Stud spacing at 600mm centres maximum.

Place studs to allow a 15mm expansion gap at the top of the frame.

The studs are held in place by the "grip" of the channel runners. Light locating fasteners that fail at high temperatures, such as single aluminium rivets may be used. Otherwise positive fixing must be avoided.

Recommended maximum height of partition is 2700mm.

Higher walls are the subject of specific engineering design.

Note: If lighter BMT steel studs are used, verification of performance must be obtained from the supplier of the framing system.

LINING

2 layers of 16mm GIB Fyrelite® each side of the frame.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets and on opposite side of frame.

Full height sheets shall be used where possible.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

INNER LAYER: 32 x 6g GIB® Grabber Drywall Self Tapping Screws

OUTER LAYER: 51mm x 7g GIB® Grabber Drywall Self Tapping Screws

Fastener Centres

Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

Fastening the linings to top and bottom tracks is permitted as long as the fasteners do not connect the studs and tracks.

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

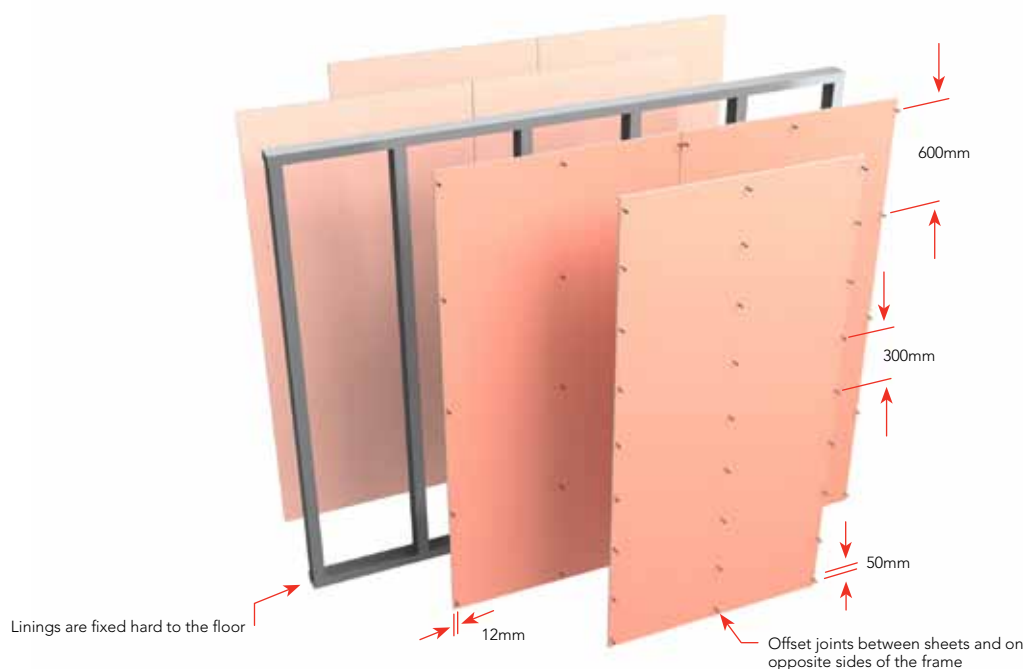
SERVICES

Holes may be drilled or pre-punched in the metal studs to allow installation of electrical service lines and plumbing supply pipes.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ OR PHONE 0800 100 442



FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SOUND TRANSMISSION CLASS	SYSTEM WEIGHT APPROX
GBS 240	NLB	-/240/240	4 layers 19mm GIB Fyrelite®	STC 44 (STC 55 with one layer 75mm Fibreglass Batts)	65kg/m ² Steel Frame

FRAMING AND WALL HEIGHT

Steel stud dimensions to be 64 x 34 x 0.55mm nominal with a 6mm return.

Steel channel dimensions to be 64 x 30 x 0.55mm nominal.

Channel runners are fixed to the floor and ceiling in true alignment.

Double frame (refer to details overleaf)

- Frame 1. Studs at 600mm centres maximum
- Frame 2. Studs at 600mm centres maximum and staggered by 300mm from frame 1
- Place studs to allow a 15mm expansion gap at the top of the frame
- The studs are held in place by the "grip" of the channel runners. No other fixing may be used
- Tested height of partition is 3600mm

LINING

2 layers of 19mm GIB Fyrelite® to one side of Frame 1. (refer to details overleaf).

1 layer of 19mm GIB Fyrelite® to the outside faces of both Frames 1 and 2.

Vertical fixing only permitted.

Sheets shall be touch fitted.

Offset joints between sheets by 300mm minimum as shown in the sheet layout.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

All sheet joints must be formed over framing.

Linings are fixed hard to floor.

FASTENING THE LINING (STEEL FRAME)

Fasteners

INNER LAYER FRAME 1: 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

SECOND LAYER FRAME 1: 51mm x 7g screws as above.

OUTSIDE FACES FRAMES 1 AND 2: 32mm x 6g screws as above.

Fastener Centres

INNER LAYER FRAME 1: 3 fasteners only fixed to each longitudinal sheet edge. One below and above the top and bottom channels respectively and one at the centre.

ALL OTHER LAYERS: 300mm centres up each stud. Place fasteners 12mm from sheet edges generally and 50mm from sheet ends.

JOINTING

Double layer between frames unstopped.

OUTSIDE LAYERS: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

ACOUSTIC SEALANT

To achieve the stated sound transmission class (STC), a bead of acoustic sealant must be placed around the perimeter of the inner layer on Frame 1; the outer layer is then bedded on to the bead.

TIMBER FRAMED ALTERNATIVE

Framing to comply with, • NZBC B1 – Structure: AS1 Clause 3 – Timber (NZS 3604) or VM1 Clause 6 – Timber (NZS 3603)

- NZBC B2 – Durability: AS1 Clause 3.2 – Timber (NZS 3602)
- Framing to be set out as described for GBS 240
- Nogs are not required except where sheet end butt joints occur

FASTENING THE LINING (TIMBER FRAME)

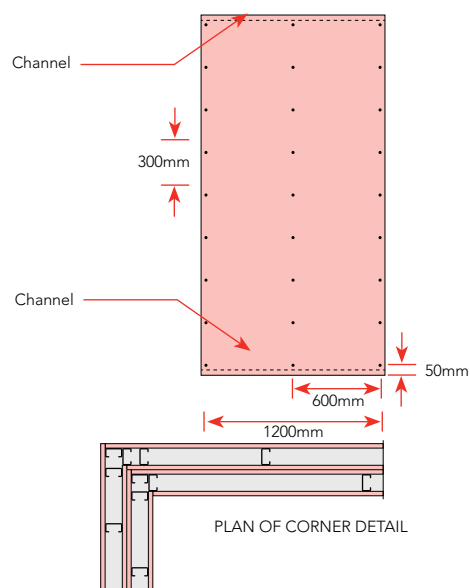
As detailed in GBS 240 except that:

(a) Fasteners for the second layer on Frame 1 shall be 63mm x 8g GIB® Grabber® Self Tapping Screws.

(b) Fasteners for all other layers shall be 41mm x 6g GIB® Grabber® High Thread Drywall Screws.

System weight: approx 70kg/m² (Continued next page)

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



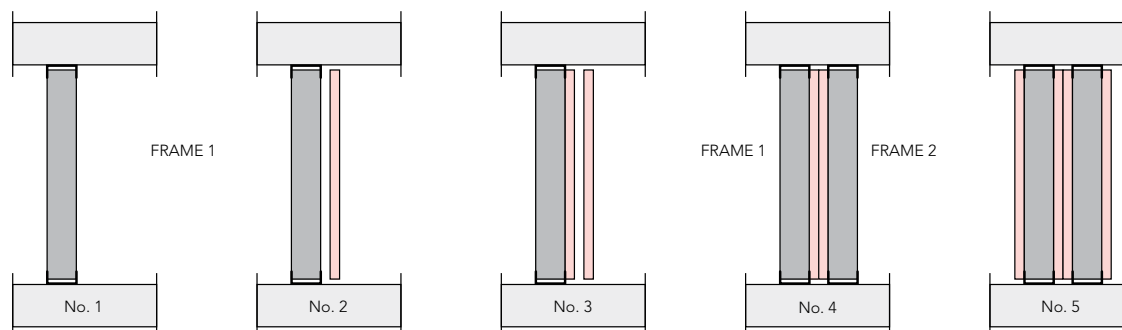


FIRE RATED WALL SYSTEMS

TWO WAY FRR - STEEL FRAME

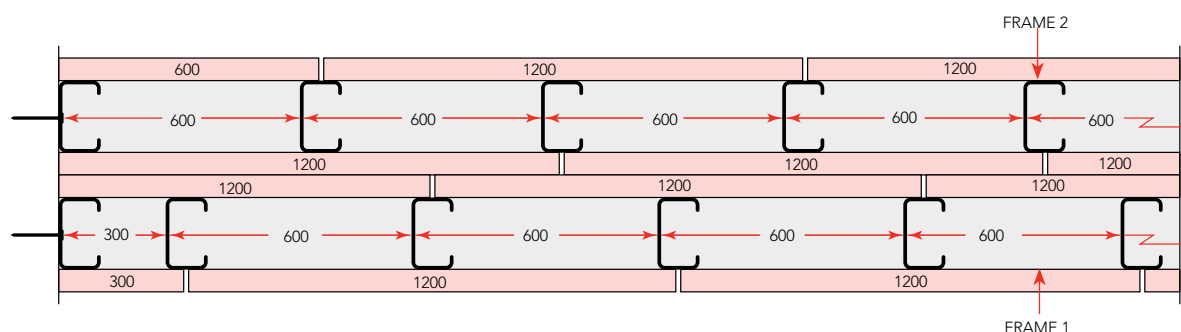
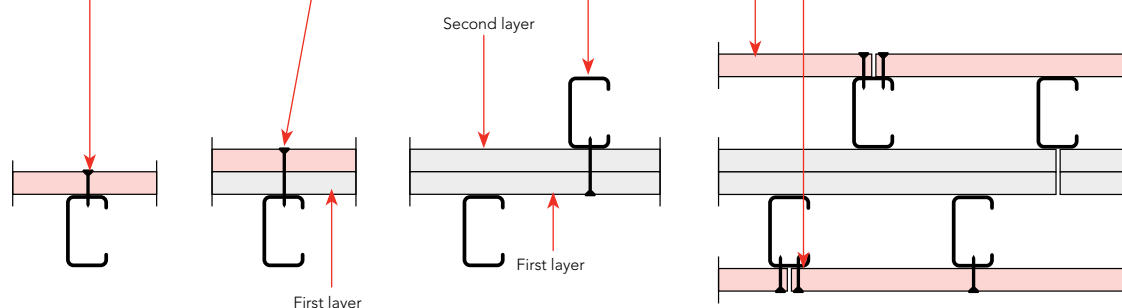
CONSTRUCTION STEPS IN SEQUENCE

(Studs placed to allow a 15mm expansion gap at the top of the frame)



KEY

1. First steel frame fixed in place.
2. First layer of 19mm GIB Fyrelite® "tacked" to Frame 1 with 3 only 32mm x 6g self tapping screws to each longitudinal sheet edge. One below and above the top and bottom channels respectively and one at the centre
3. Second layer of 19mm GIB Fyrelite® fixed to Frame 1 with 51mm x 7g self tapping screws at 300mm centres up each stud
4. Erect Frame 2 and secure studs to assemble with 51mm x 7g self tapping screws at 300mm centres through the double layer of 19mm GIB Fyrelite® on Frame 1 (From the Frame 1 side)
Note: If the timber framed alternative is used, fasten Frame 2 to the assembly with 63mm x 8g GIB® Grabber® Self Tapping Screws®
5. Fix the outer layer of 19mm GIB Fyrelite® to the outside faces of Frames 1 & 2 with 32mm x 6g self tapping screws at 300mm centres up ea .
6. No Fixings to top and bottom channel sections.



In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUW 15	LB/NLB	(15)/15/15	1 layer 13mm GIB® Standard one side

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads.

The stud width shall be 35mm minimum with a depth of 90mm minimum.

Stud spacing at 600mm centres maximum.

Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

1 layer of 13mm GIB® Standard Plasterboard to one side of the frame.

Vertical or Horizontal fixing permitted. Full height sheets shall be used where possible.

Sheets shall be touch fitted.

When sheet end butt joints are unavoidable, they shall be formed over framing.

All sheet joints must be formed over framing.

In steel framed options, linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

TIMBER FRAME	STEEL FRAME
32mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails	32mm x 6g GIB® Grabber® Drywall Self Tapping Screws

Fastener Centres

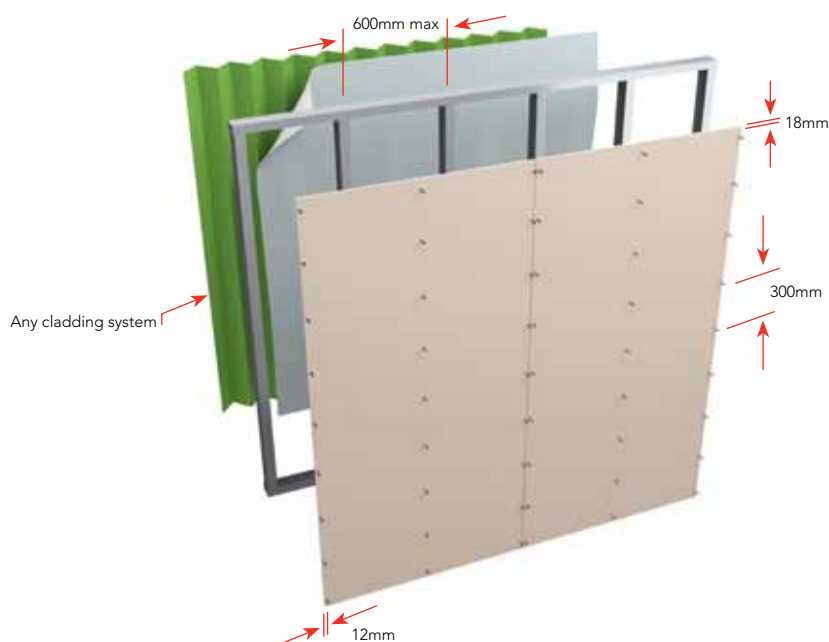
300mm centres up each stud.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

JOINTING

All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUW 30a	LB/NLB	(30)/30/30	1 layer 16mm GIB Fyreline® one side
GBUW 30b			2 layers 10mm GIB Fyreline® one side

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads.

The stud width shall be 35mm minimum with a depth of 90mm minimum.

Stud spacing at 600mm centres maximum.

Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

GBUW 30a – 1 layer of 16mm GIB Fyreline® to one side of the frame.

GBUW 30b – 2 layers of 10mm GIB Fyreline® to one side of the frame.

Vertical or Horizontal fixing permitted. Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Offset joints in double layered systems.

When sheet end butt joints are unavoidable, they shall be formed over framing.

All sheet joints must be formed over framing.

In steel framed options, linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

SYSTEM	TIMBER FRAME	STEEL FRAME
GBUW 30a	32mm x 6g GIB® Grabber® High Thread Drywall Screws, or 40mm x 2.8mm GIB® Nails	32mm x 6g GIB® Grabber® Drywall Self Tapping Screws
GBUW 30b Inner layer	32mm x 6g screws as above or 40mm x 2.8mm GIB® Nails	25mm x 6g screws as above
Outer layer	41mm x 6g screws as above or 40mm x 2.8mm GIB® Nails	32mm x 6g screws as above

Fastener Centres

INNER LAYER: 600mm centres up each stud.

OUTER OR SINGLE LAYER: 300mm centres up each stud.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

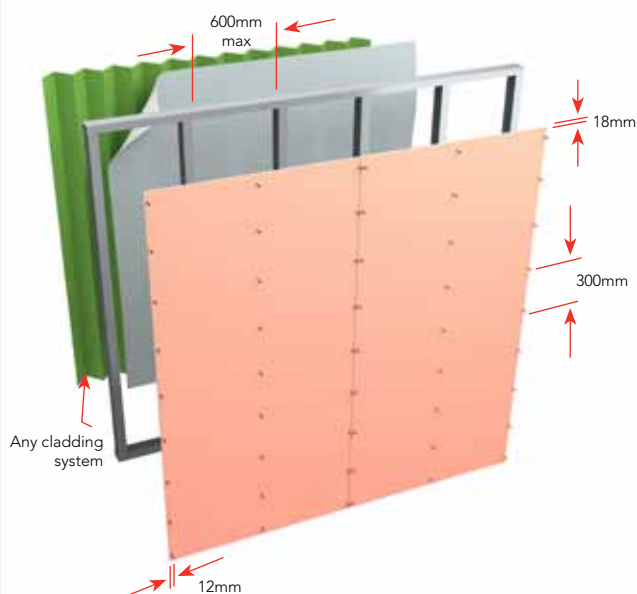
JOINTING

INNER LAYER: Unstopped

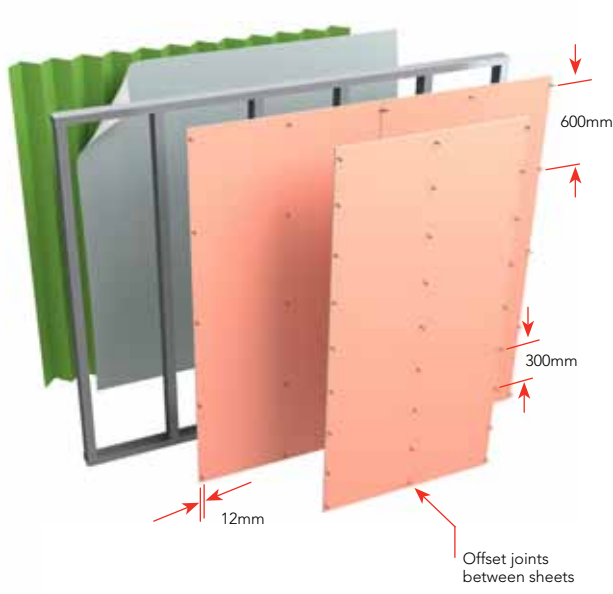
OUTER OR SINGLE LAYER: All screw heads stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GBUW 30a



GBUW 30b





FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	
GBUW 60a	LB/NLB	(60)/60/60	2 layers 13mm GIB Fyrelite® one side	Cladding systems not incorporating foamed polymerics
GBUW 60b			1 layer 16mm GIB Fyrelite® + 1 layer 13mm GIB Fyrelite® one side	Any cladding system

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads. The stud width shall be 35mm minimum with a depth of 90mm minimum. Stud spacing at 600mm centres maximum. Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

GBUW 60a – 2 layers of 13mm GIB Fyrelite® to one side of the frame.

GBUW 60b – 1 layer of 16mm plus 1 layer of 13mm GIB Fyrelite® to one side of the frame.

Vertical or Horizontal fixing permitted.

Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Offset joints in double layered systems:

For vertical fixing all sheet joints must be formed over framing and sheet joints must be offset.

The second layer may be fixed horizontally, fixed to all studs. In this case no framing is required behind longitudinal joints.

When sheet end butt joints are unavoidable, they shall be formed over framing.

In steel framed options, linings are fixed hard to floor.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforces and stopped in accordance with the publication entitled "GIB® Site Guide"

FASTENING THE LINING

Fasteners

SYSTEM	TIMBER FRAME	STEEL FRAME
GBUW 60a		
Inner layer	32mm x 6g GIB® Grabber® High Thread Drywall Screws, or 40mm x 2.8mm GIB® Nails	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer	41mm x 6g screws as above or 40mm x 2.8mm GIB® Nails	41mm x 6g screws as above
GBUW 60b		
Inner layer (16mm GIB Fyrelite®)	32mm x 6g screws as above or 40mm x 2.8mm GIB® Nails	32mm x 6g screws as above
Outer layer (13mm GIB Fyrelite®)	51mm x 7g screws as above	41mm x 6g screws as above

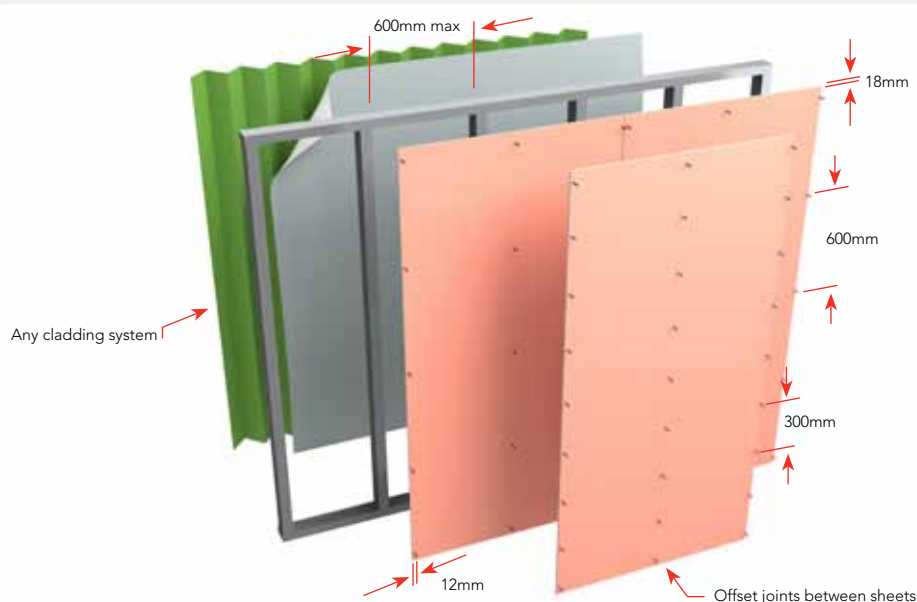
Fastener Centres

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUW 90	LB/NLB	(90)/90/90	1 layer 16mm GIB Fyreline® layer 19mm GIB Fyreline® one side

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads.

The stud width shall be 35mm minimum with a depth of 90mm minimum.

Stud spacing at 600mm centres maximum.

Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

1 layer of 16mm GIB Fyreline® plus one layer of 19mm GIB Fyreline® to one side of the frame.

Vertical or Horizontal fixing permitted.

Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Offset joints in double layered systems:

For vertical fixing all sheet joints must be formed over framing and sheet joints must be offset.

The second layer may be fixed horizontally, fixed to all studs. In this case no framing is required behind longitudinal joints.

When sheet end butt joints are unavoidable, they shall be formed over framing.

In steel framed options, linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer (16mm GIB Fyreline®)	32mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails	32mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer (19mm GIB Fyreline®)	51mm x 7g screws as above	51mm x 7g screws as above

Fastener Centres

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

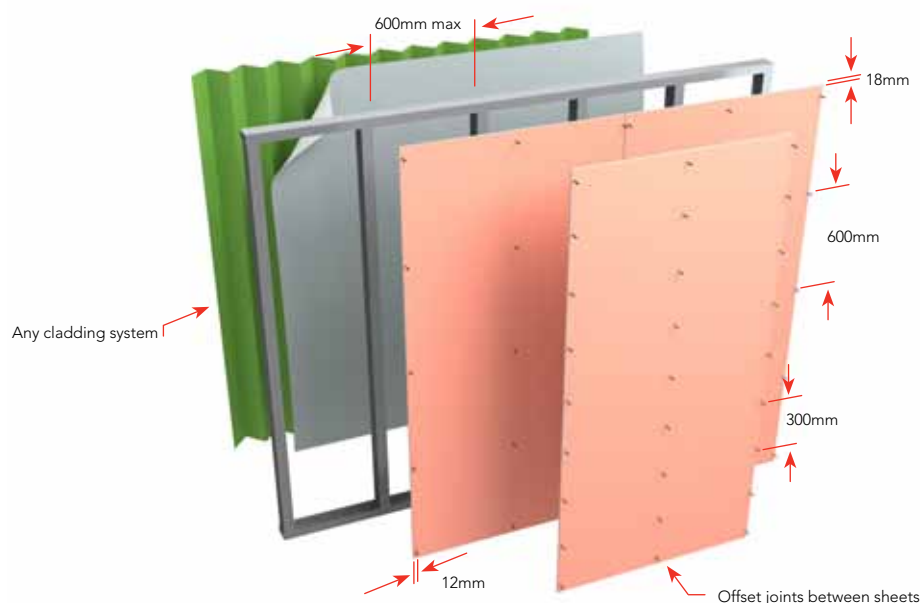
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED WALL SYSTEMS

ONE WAY FRR - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUW 120	LB/NLB	(120)/120/120	2 layers 19mm GIB Fyrelite® one side

FRAMING AND WALL HEIGHT

Timber or steel frame designed to meet durability and structural criteria for strength and serviceability under dead and live loads.

The stud width shall be 35mm minimum with a depth of 90mm minimum.

Stud spacing at 600mm centres maximum.

Frame height and dimensions as determined by NZS 3604 stud tables or specific design.

LINING (FIRE SIDE)

2 layers of 19mm GIB Fyrelite® to one side of the frame.

Vertical or horizontal fixing permitted.

Full height sheets shall be used where possible.

Sheets shall be touch fitted.

Offset joints in double layered systems:

For vertical fixing all sheet joints must be formed over framing and sheet joints must be offset.

The second layer may be fixed horizontally, fixed to all studs. In this case no framing is required behind longitudinal joints.

When sheet end butt joints are unavoidable, they shall be formed over nogs.

In steel framed options, linings are fixed hard to floor.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws or 40mm x 2.8mm GIB® Nails	32mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer	51mm x 7g screws as above	51mm x 7g screws as above

Fastener Centres

INNER LAYER: 600mm centres up each stud.

OUTER LAYER: 300mm centres up each stud.

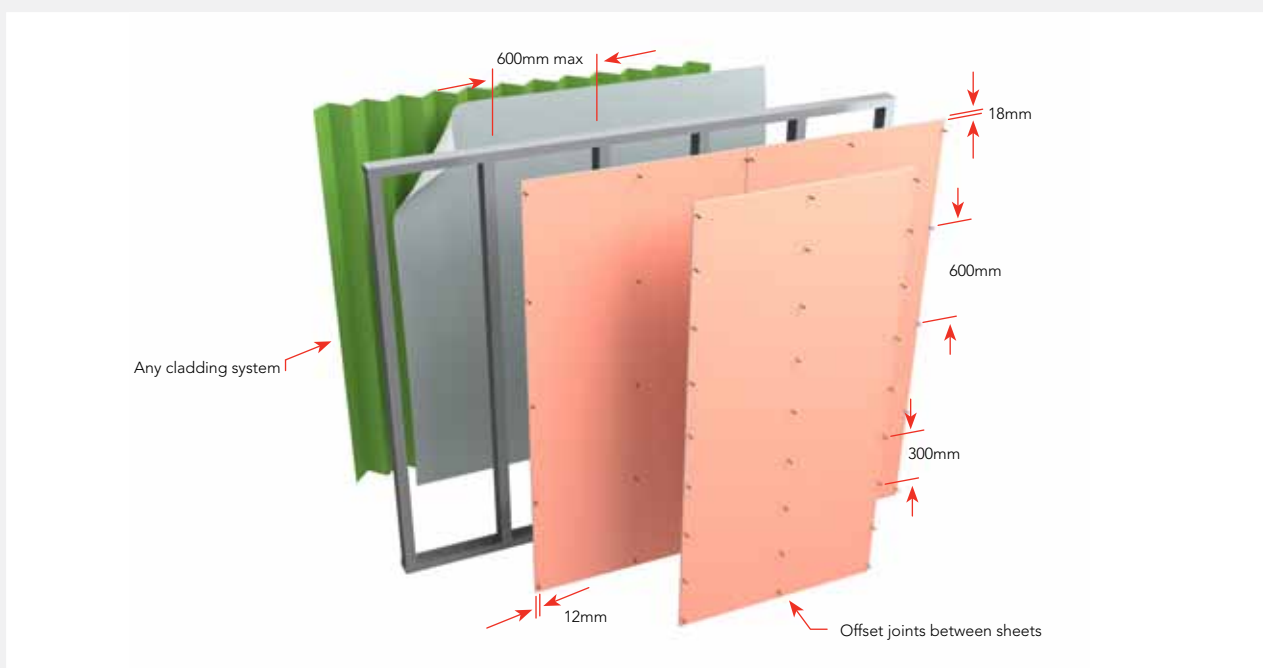
Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBFC 15	LB	15/15/15	Timber joists with 1 layer 13mm GIB® Standard	38	31	40kg/m ²

FLOOR FRAMING

Floor Joists must comply with NZS 3604 and be a minimum of 150 x 50mm spaced at 600mm maximum. Solid strutting is required in accordance with NZS 3604.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm or at 1200mm for joists at 400 or 450mm. Nogs/framing is required at the perimeter of the fire rated ceiling.

ALTERNATIVE FLOOR FRAMING

Hyspan® or Hybeam® HJ series joists may be used as an alternative. Joists must be covered by specific engineering design for strength and serviceability and spaced at no more than 600 mm centres.

Requirements for nogs are the same as for NZS 3604 floor framing above.

Consult the beam manufacturer re construction of the solid blocking contained in floor/ceiling to wall junctions.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer 13mm GIB® Standard Plasterboard shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists, solid strutting or nogs. Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

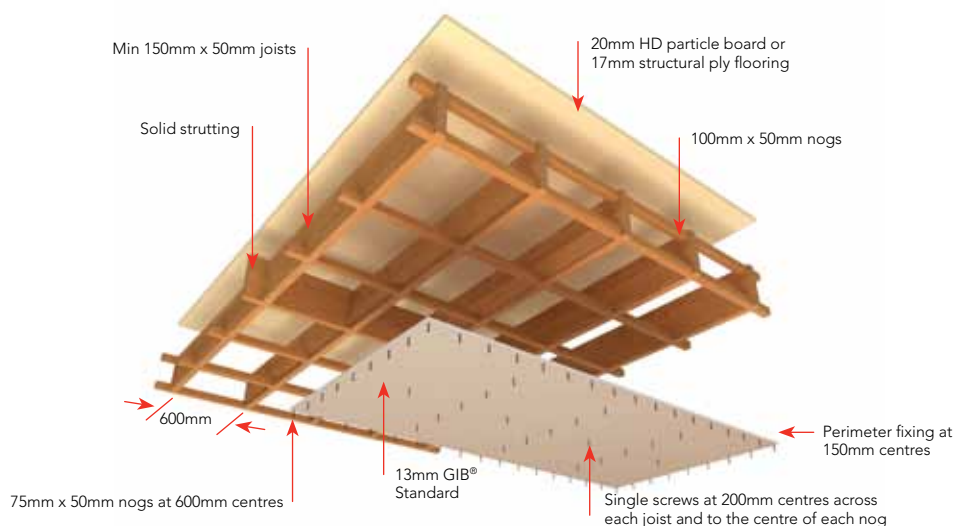
JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

Hyspan® or Hybeam® HJ series joists are manufactured and supplied by Carter Holt Harvey Futurebuild, 0800 808 131. The following alternatives are available. Please check with the supplier for construction details and independent verification.

- Posi Strut® joists – Mitek Group, (09) 274 7109

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

STEEL JOISTS

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSJ 30	LB	30/30/30	1 layer 13mm GIB Fyrelite®	34	30	38kg/m ²

FLOOR FRAMING

Steel floor joists shall be minimum 190mm deep C-section with 45mm flanges and a thickness of 1.55mm, spaced at no more than 600mm centres.

Framing is required at the perimeter of the ceiling lining and at longitudinal sheet joints. Suitable perimeter framing includes a minimum 35mm x 35mm x 0.55mm steel perimeter angle or steel nogs.

Longitudinal sheet joints are supported on 0.55mm thick C-section steel nogs connected to the joists. The nogs have a minimum width of 50mm with 25mm vertical legs.

FLOORING

Flooring shall be nominal 20mm particle board or minimum 17mm structural plywood fixed to the joists in accordance with the manufacturers specifications.

Flooring sheet joints must have a tongue and groove jointer or be formed over framing.

CEILING LINING

1 layer of 13mm GIB Fyrelite® fixed at right angles to the underside of the floor joists.

All joints must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Scavenger Head Drill Point Drywall screws.

Fastener Centres

150mm centres around the perimeter of each sheet and at 200mm centres along each joist.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

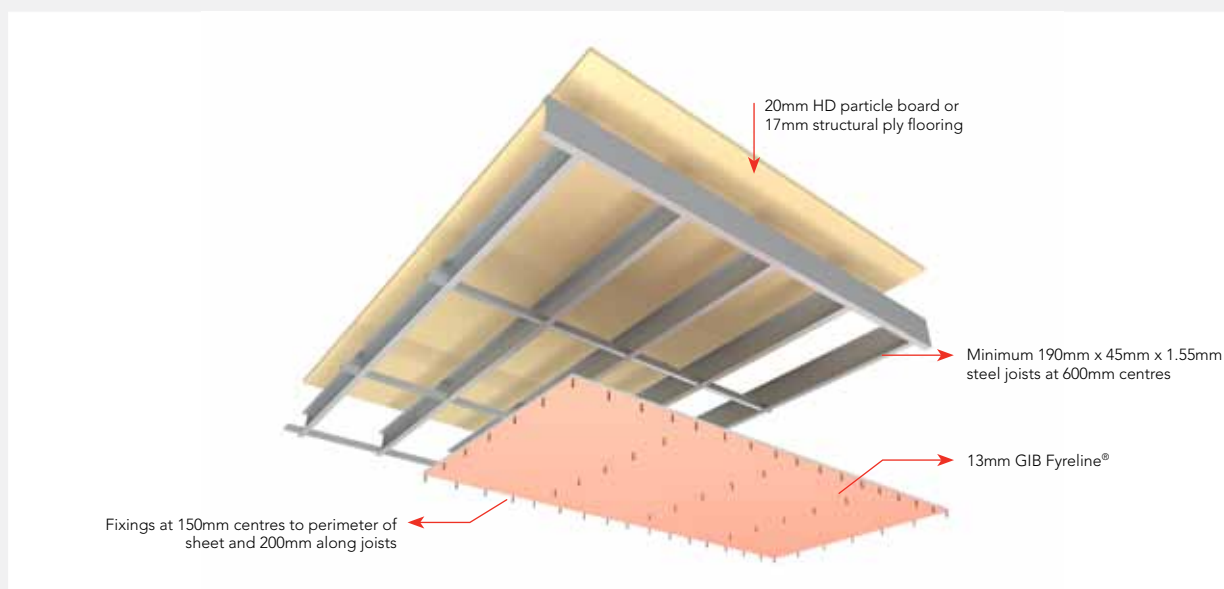
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBFC45	LB	45/45/45	Timber joists with 1 layer 13mm GIB Fyrelite®	39	32	44kg/m ²

FLOOR FRAMING

Floor Joists must comply with NZS 3604 and be a minimum of 200 x 50mm spaced at 600mm maximum. Solid strutting is required in accordance with NZS 3604.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm or at 1200mm for joists at 400 or 450mm.

Nogs/framing is required at the perimeter of the fire rated ceiling.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer of 13mm GIB Fyrelite® shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists, solid strutting or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

CEILING BATTEN ALTERNATIVE

Where NZS 3604 permits 150mm joists, these may be used with continuous 75 x 50mm ceiling battens at 600mm centres, running across the joists (battens may also be used to level the ceiling in renovation work).

When joists are spaced at 600mm, 50 x 50mm blocking between the ceiling battens is required under all joists.

When joists are spaced at 400mm, blocking on joists is required behind lining joints at 1200mm centres only.

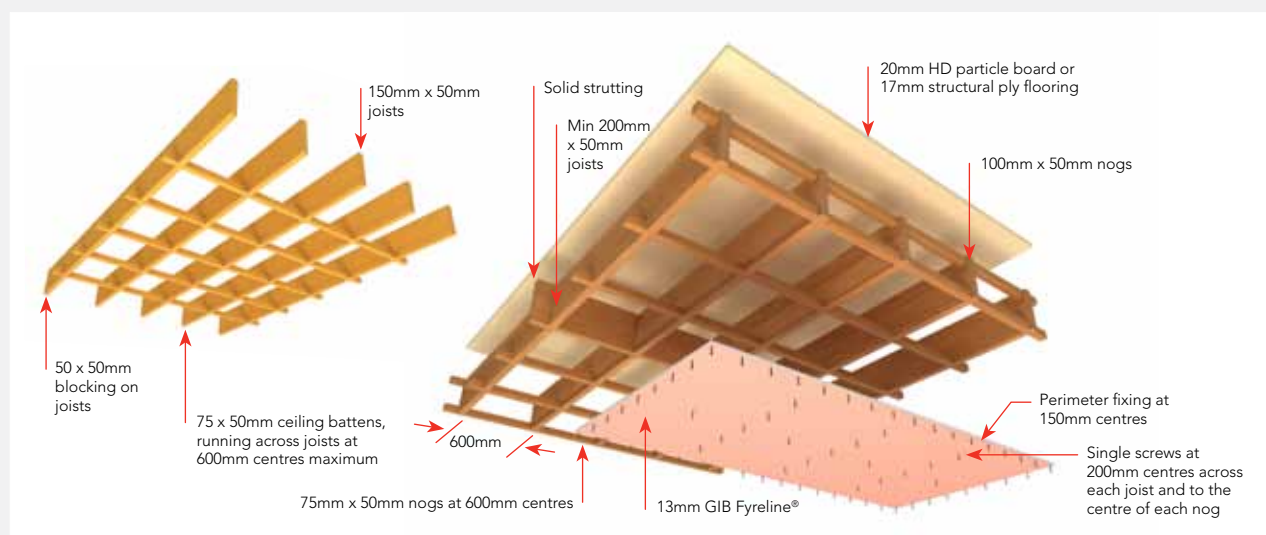
When joists are at 450mm, nogs are required between the battens at 600mm centres (or at 1200mm centres when battens are spaced at 450mm or less).

Nogs/framing is required at the perimeter of the fire rated ceiling.

The lining shall be fixed at right angles to the underside of the battens.

If only a 30/30/30 FRR is required, the use of nominally 70 x 35mm timber battens is permitted or alternatively metal battens can be used provided construction is otherwise in accordance with specification GBSC 30.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ OR PHONE 0800 100 442



FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBCJ 30	LB	30/30/30	Composite joists with 1 layer 13mm GIB Fyrelime®	39	32	40kg/m ²
GBCJ 45		45/45/45				

FLOOR FRAMING FASTENING THE LINING

Floor joists may be either Hyspan® or Hybeam® HJ series joists.

Joists shall be covered by specific engineering design for strength and serviceability, have a depth no less than 200mm and spacing no more than 600mm.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm, or at 1200mm for joists at 400 or 450mm.

Nogs/framing is required at the perimeter of the fire rated ceiling.

Consult the beam manufacturer re construction of the solid blocking contained in floor/ceiling to wall junctions.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer of 13mm GIB Fyrelime® shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

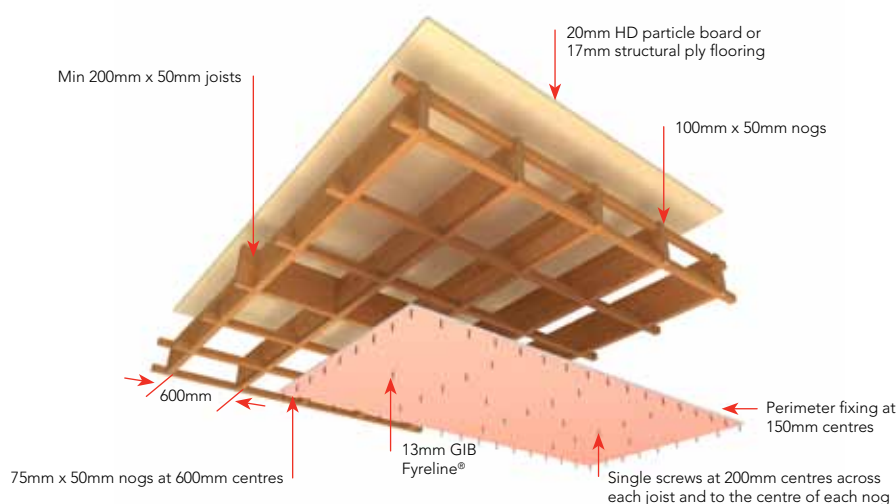
Hyspan® or Hybeam® HJ series joists are manufactured and supplied by Carter Holt Harvey Futurebuild, 0800 808 131. The following alternatives are available. Please check with the supplier for construction details and independent verification.

- Posi Strut® joists – Mitek Group, (09) 274 7109

CEILING BATTENS

If only a 30/30/30 FFR is required, the use of nominally 70 x 35mm timber battens is permitted or alternatively metal battens can be used provided construction is otherwise in accordance with specification GBSC 30.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBFC 60	LB	60/60/60	Timber joists with 1 layer 16mm GIB Fyreline®	39	32	46kg/m ²

FLOOR FRAMING

Floor Joists must comply with NZS 3604 and be a minimum of 200 x 50mm spaced at 600mm maximum. Solid strutting is required in accordance with NZS 3604.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm or at 1200mm for joists at 400 or 450mm.

Nogs/framing is required at the perimeter of the fire rated ceiling.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer of 16mm GIB Fyreline® shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

CEILING BATTEN ALTERNATIVE

Where NZS 3604 permits 150mm joists, these may be used with continuous 75 x 50mm ceiling battens at 600mm centres, running across the joists (battens may also be used to level the ceiling in renovation work).

When joists are spaced at 600mm, 50 x 50mm blocking between the ceiling battens is required under all joists.

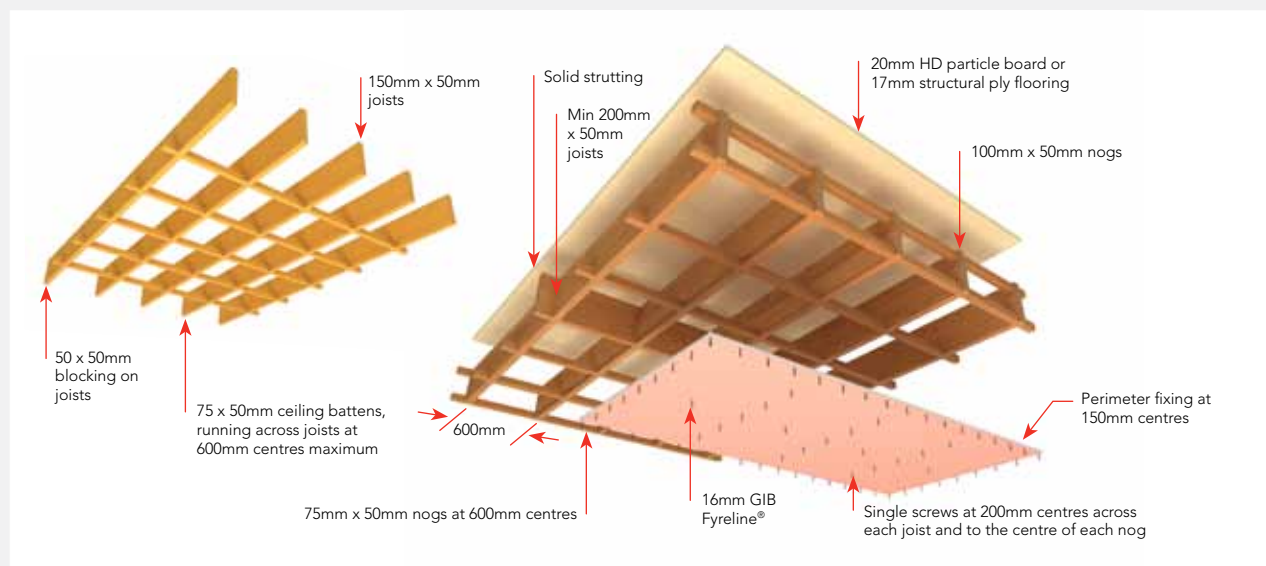
When joists are spaced at 400mm, blocking on joists is required behind lining joints at 1200mm centres only.

When joists are at 450mm, nogs are required between the battens at 600mm centres (or at 1200mm centres when battens are spaced at 450mm or less).

Nogs/framing is required at the perimeter of the fire rated ceiling.

The lining shall be fixed at right angles to the underside of the battens.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

STEEL JOISTS

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSJ 60	LB	60/60/60	1 layer 16mm GIB Fyrelite®	39	32	40kg/m ²

FLOOR FRAMING

Steel floor joists shall be minimum 190mm deep C-section with 45mm flanges and a thickness of 1.55mm, spaced at no more than 600mm centres.

Framing is required at the perimeter of the ceiling lining and at longitudinal sheet joints. Suitable perimeter framing includes a minimum 35mm x 35mm x 0.55mm steel perimeter angle or steel nogs.

Longitudinal sheet joints are supported on 0.55mm thick C-section steel nogs connected to the joists. The nogs have a minimum width of 50mm with 25mm vertical legs.

FLOORING

Flooring shall be nominal 20mm particle board or minimum 17mm structural plywood fixed to the joists in accordance with the manufacturers specifications.

Flooring sheet joints must have a tongue and groove jointer or be formed over framing. Joints without a jointer must have a bead of fire rated sealant applied before sheets are locked together. Where tongue and groove jointers or sealant are not used, the fire rating will reduce to 60/60/45.

CEILING LINING

1 layer of 16mm GIB Fyrelite® fixed at right angles to the underside of the floor joists.

All joists must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Scavenger Head Drill Point Drywall screws.

Fastener Centres

150mm centres around the perimeter of each sheet and at 200mm centres along each joist.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

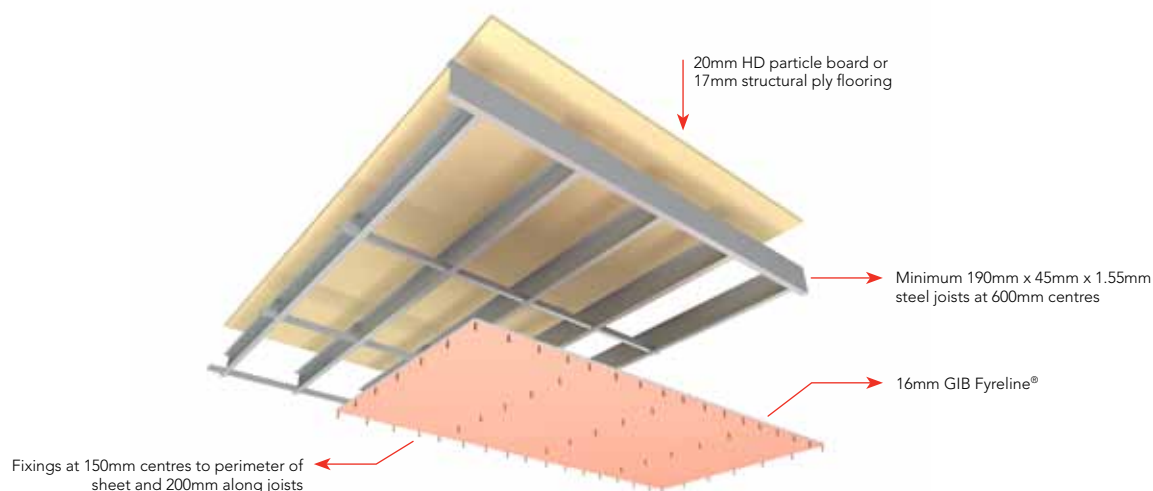
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBCJ 60	LB	60/60/60	Composite joists with 1 layer 16mm GIB Fyrelite®	39	32	44kg/m²

FLOOR FRAMING

Floor joists may be either Hyspan® or Hybeam® HJ series joists. Joists shall be covered by specific engineering design for strength and serviceability, have a depth no less than 200mm and spacing no more than 600mm.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600mm for joists at 600mm, or at 1200mm for joists at 400 or 450mm.

Nogs/framing is required at the perimeter of the fire rated ceiling.

Consult the beam manufacturer re construction of the solid blocking contained in floor/ceiling to wall junctions.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

1 layer of 16mm GIB Fyrelite® shall be fixed at right angles to the underside of the floor joists.

All joints must occur on joists or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

51mm x 7g GIB® Grabber® High Thread Drywall Screws.

Fastener Centres

150mm centres around the perimeter of each sheet.

Single screws at 200mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

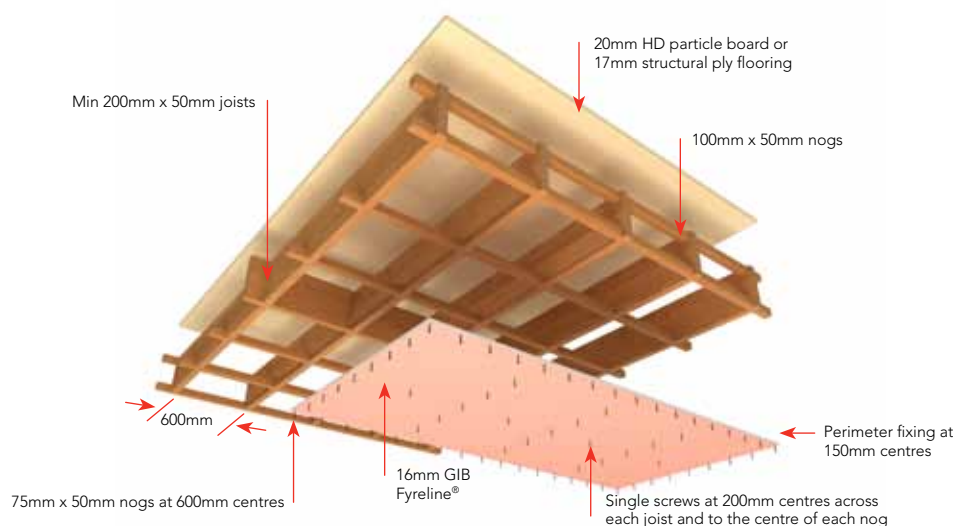
JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

Hyspan® or Hybeam® HJ series joists are manufactured and supplied by Carter Holt Harvey Futurebuild, 0800 808 131. The following alternatives are available. Please check with the supplier for construction details and independent verification.

- Posi Strut® joists – Mitek Group, (09) 274 7109

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ OR PHONE 0800 100 442



FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBFC 90	LB	90/90/90	Timber joists with 2 layers 16mm GIB Fyrelite®	41	34	63kg/m²

FLOOR FRAMING

Floor Joists must comply with NZS 3604 and be a minimum of 200 x 50mm spaced at 400mm maximum. Solid strutting is required at 1800mm centres.

Nogs fixed on the flat to receive the ends of flooring material shall be 100 x 50mm minimum.

Nogs fixed on the flat to receive GIB® linings shall be 75 x 50mm minimum spaced at 600 centres.

Nogs/framing is required at the perimeter of the fire rated ceiling.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

2 layers of 16mm GIB Fyrelite® shall be fixed at right angles to the underside of the floor joists. The joints of the second layer are to be offset from those of the first layer.

All joints must occur on joists, solid strutting or nogs.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

INNER LAYER: 51mm x 7g GIB® Grabber® High Thread Drywall Screws.

OUTER LAYER: 76mm x 8g GIB® Grabber® Self Tapping Screws.

Fastener Centres

INNER LAYER: 150mm centres around the perimeter of each sheet and across each joist and at the centre of each nog.

OUTER LAYER: 150mm centres around the perimeter of each sheet and single screws at 150mm centres along each joist and at the centre of each nog.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

CEILING BATTEN ALTERNATIVE

Where NZS 3604 permits 150mm joists, these may be used with continuous 75 x 50mm ceiling battens at 600mm centres, running across the joists (battens may also be used to level the ceiling in renovation work).

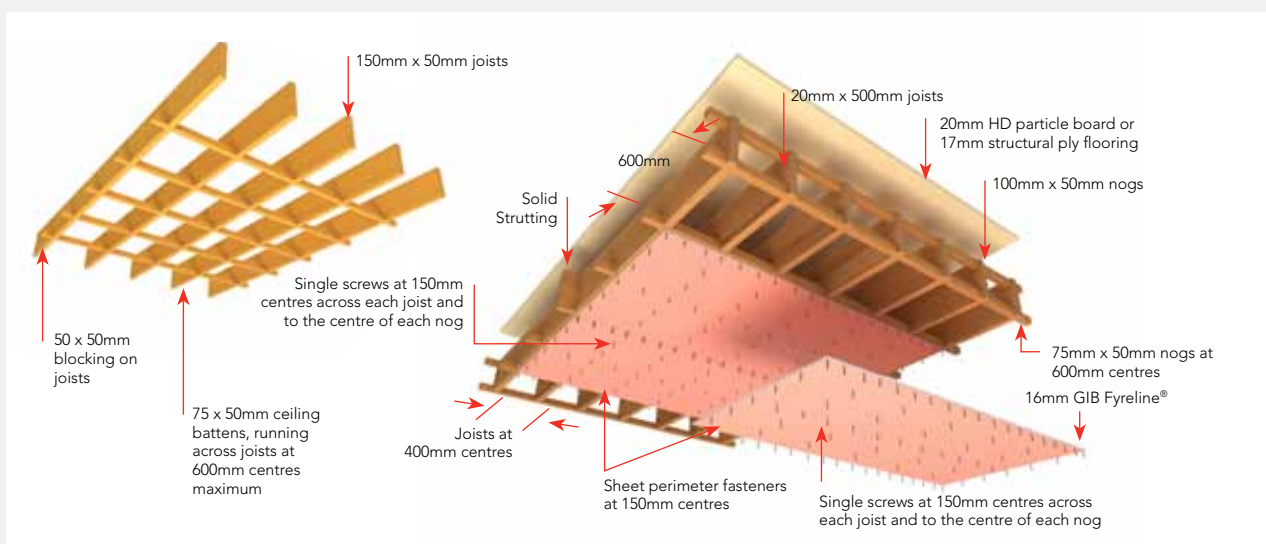
50 x 50mm blocking between the ceiling battens is required under all joists.

Nogs/framing is required at the perimeter of the fire rated ceiling.

The lining shall be fixed at right angles to the underside of the battens.

The joints of the outer layer are to be offset from those of the inner layer.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBFC 120	LB	120/120/120	Timber or steel joists with 2 layers 19mm GIB Fyrelite®

FLOOR FRAMING

Timber or steel floor joists designed to meet structural criteria for strength and serviceability under dead and live loads.

Joists at 500mm centres maximum.

The separation distance between the ceiling lining and the flooring shall be 90mm minimum.

Linings shall be supported by framing members with a minimum width of 35mm.

Nogs fixed on the flat to receive the ends of the particle board shall be 100mm x 50mm minimum.

Note: In respect of the FRR for this particular system, nogs are required only at the perimeter of the fire rated ceiling. If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

CEILING LINING

2 layers of 19mm GIB Fyrelite® shall be fixed at right angles to the underside of the floor framing.

The joints of the second layer are to be offset from those of the first layer.

Sheets shall be touch fitted.

All sheet end butt joints must occur over solid framing.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws	41mm x 6g GIB® Grabber® Self Tapping Screws
Outer layer	63mm x 8g GIB® Grabber® Self Tapping Screws	51mm x 7g screws as above

Fastener Centres (both layers)

At 200mm centres around the ceiling perimeter, along each framing member, and at 200mm centres to framing members where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

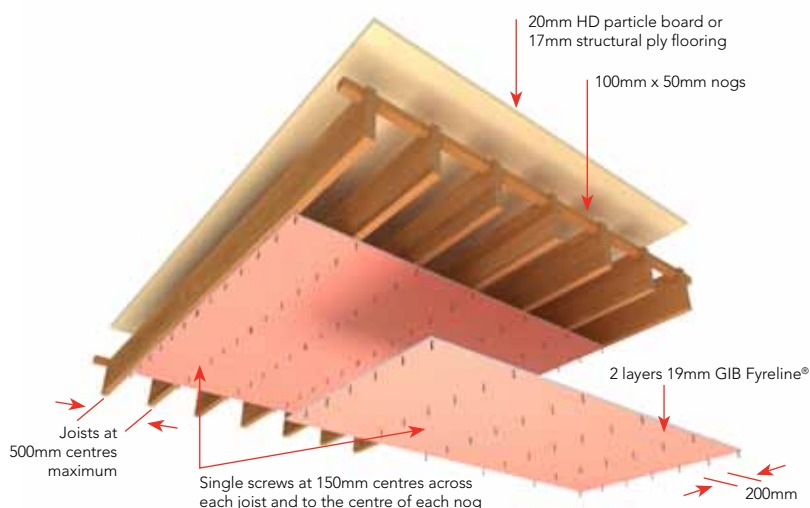
The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

SUSPENDED GRID

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS TO UNDERSIDE OF SUPPORT FRAME	STC	IIC	SYSTEM WEIGHT APPROX
GBSC 30	LB	30/30/30	Timber joists with suspension system & 1 layer 13mm GIB Fyrelite® (back blocked)	48	43	50kg/m ²

FLOOR FRAMING

Timber floor joists complying with NZS 3604 spaced at 600mm centres maximum.

Alternatively, a proprietary I-joist system may be used subject to specific structural design and approval by the normal building consent process.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

SUSPENSION SYSTEM

Rondo® Key-Lock™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting top cross rails (part 128) spaced at 1200mm centres and furring channels (part 129) spaced at 600mm centres maximum.

USG Donn® ScrewFix™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting DJ 38 strongback channels spaced at 1200mm centres and FC37 furring channels spaced at 600mm centres maximum.

Direct or clip fixed GIB® Rondo® Ceiling Batten system with full perimeter channel supports.

Note: Suspension system must be installed in accordance with manufacturer's specification.

CEILING LINING

1 layer of 13mm GIB Fyrelite® shall be fixed at right angles to the underside of the furring channels.

All sheet end butt joints must occur on the furring channels.

Sheets shall be touch fitted.

Joints formed by sheet edges shall be back blocked between the furring channels with strips of 13mm GIB Fyrelite®.

The width of the back blocks shall be 300mm minimum and shall be adhered with GIB-Cove® Bond.

FASTENING THE LINING

Fasteners

25mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

200mm centres along each intermediate furring channel, around the ceiling perimeter and where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

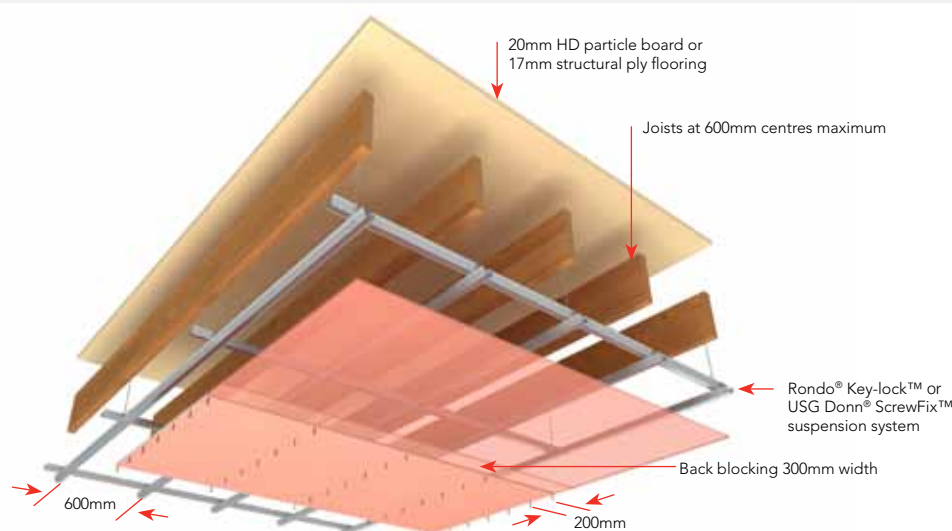
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

SUSPENDED GRID

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSC 60a	LB	60/60/60	Timber joists with suspension system & 2 layers 13mm GIB Fyrelite®	53	43	60kg/m ²

FLOOR FRAMING

Timber floor joists complying with NZS 3604 spaced at 600mm centres maximum.

Alternatively, a proprietary I-joist system may be used subject to specific structural design and approval by the normal building consent process.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 17mm thick structural plywood fixed to the joists in accordance with the manufacturers' specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

SUSPENSION SYSTEM

Rondo® Key-Lock™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting top cross rails (part 128) spaced at 1200mm centres and furring channels (part 129) spaced at 600mm centres maximum.

USG Donn® ScrewFix™ steel frame suspension system comprising 2.5mm wire hangers at 1200mm centres supporting DJ38 strongback channels spaced at 1200mm centres and FC37 furring channels spaced at 600mm centres maximum.

Direct or clip fixed GIB® Rondo® Ceiling Batten system with full perimeter channel supports.

CEILING LINING

2 layers of 13mm GIB Fyrelite® shall be fixed at right angles to the underside of the furring channels.

The joints of the second layer are to be offset from those of the first layer.

All sheet end butt joints must occur on the furring channels. Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

INNER LAYER: 25mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

OUTER LAYER: 41mm x 6g screws as above.

Fastener Centres

200mm centres along intermediate furring channel, around the ceiling perimeter and where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

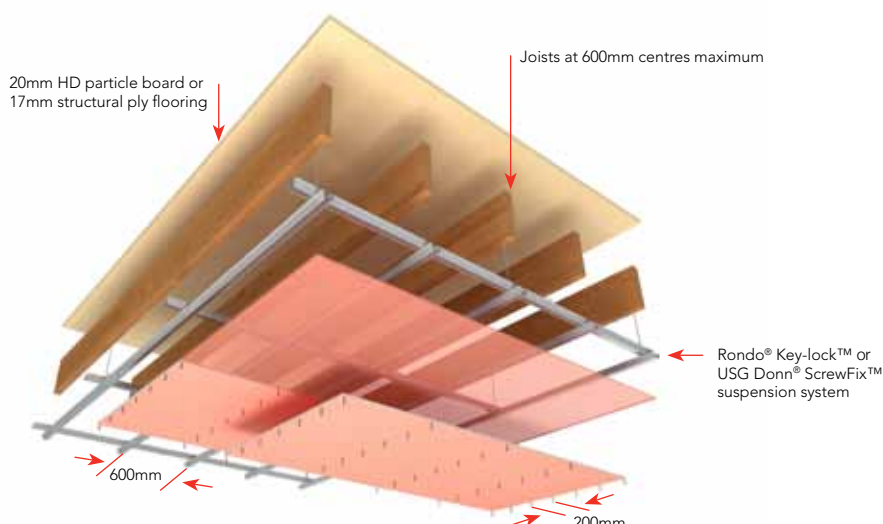
The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

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FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ OR PHONE 0800 100 442



FIRE RATED FLOOR/CEILING SYSTEMS

SUSPENDED GRID

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSC 60b	LB	60/60/60	Timber joists with USG Drywall Grid suspension system & 1 layer of 16mm GIB Fyrelite®	50	43	54kg/m ²

FLOOR FRAMING

Timber floor joists complying with NZS 3604 spaced at 600mm centres maximum.

Alternatively, a proprietary I-joist system may be used subject to specific structural design and approval by the normal building consent process.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 18mm thick structural plywood fixed to joists in accordance with the manufacturers specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

SUSPENSION SYSTEM

USG Drywall Grid Suspension System comprising 2.5mm wire hangers or DJ4040 wall angles at 1200mm centres maximum. Hangers support DGL40D main tee at 1200mm centres maximum. DGW40D-1200 cross tees installed at 600mm centres. DGW40D-600 cross tees installed at 1200mm centres, parallel with the main tee.

The distance between the underside of the flooring and the top of the ceiling linings shall be a minimum of 450mm.

Note: Suspension system must be installed in accordance with manufacturer's specification.

CEILING LINING

1 layer of 16mm GIB Fyrelite® shall be fixed parallel to the main tees and positioned so tapered edges are located on DGW40D-600 cross tees.

All sheet end butt joints must occur on the suspension system.

Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

32mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

Fastener Centres

150mm centres around the perimeter of each sheet. Single screws at 200mm centres along each DGL40D main tee and DGW40D-1200 cross tee.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

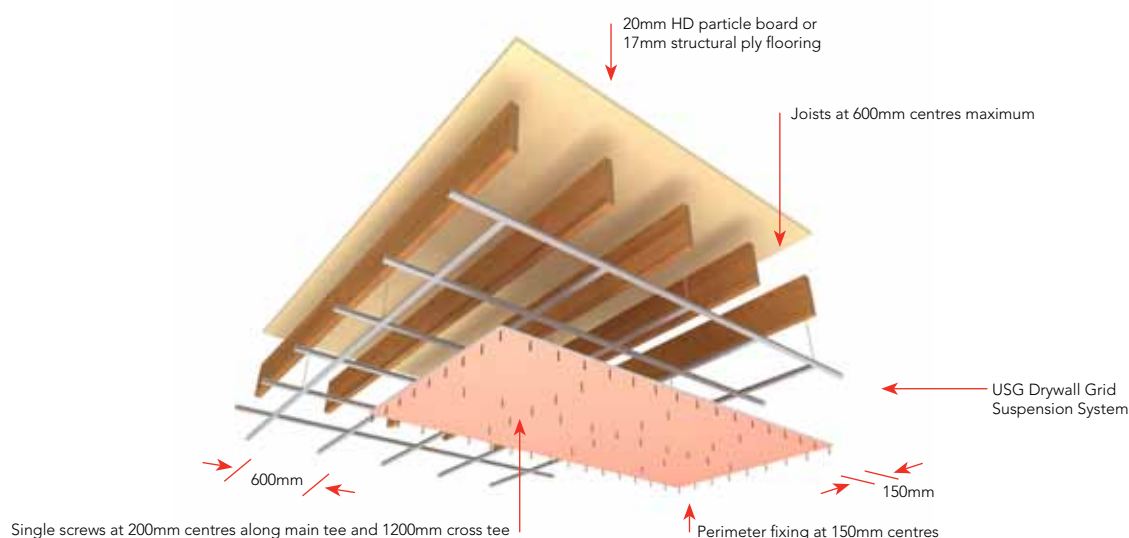
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED FLOOR/CEILING SYSTEMS

SUSPENDED GRID

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	STC	IIC	SYSTEM WEIGHT APPROX
GBSC 90	LB	90/90/90	Timber joists with USG Drywall Grid suspension system & 1 layer of 13mm GIB Fyrelite® + 16mm GIB Fyrelite®	53	43	64kg/m ²

FLOOR FRAMING

Timber floor joists complying with NZS 3604 spaced at 600mm centres maximum.

Alternatively, a proprietary I-joist system may be used subject to specific structural design and approval by the normal building consent process.

FLOORING

Minimum flooring shall be nominal 20mm thick particle board or minimum 18mm thick structural plywood fixed to joists in accordance with the manufacturers specifications.

Note: If tongue and groove sheet flooring is used, verification of performance must be obtained from the supplier of the flooring system.

SUSPENSION SYSTEM

USG Drywall Grid Suspension System comprising 2.5mm wire hangers or DJ4040 wall angles at 1200mm centres maximum. Hangers support DGW55D main tee at 1200mm centres maximum. DGW40D-1200 cross tees installed at 600mm centres.

The distance between the underside of the flooring and the top of the ceiling linings shall be a minimum of 450mm.

Note 1: Additional DGW40D-1200 cross tees are required 200mm both sides of sheet end butt joints.

Note 2: Suspension system must be installed in accordance with manufacturer's specification.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

CEILING LINING

1 layer of 13mm GIB Fyrelite® shall be fixed parallel to the DGL55D main tees and positioned so tapered edges are located on the main tee. Sheet end butt joints must occur on DGW40D-1200 cross tees.

One layer of 16mm GIB Fyrelite® shall be fixed parallel to main tees but offset by 600mm in both directions. Sheet end butt joints must occur on DGW40D-1200 cross tees. Sheets shall be touch fitted.

FASTENING THE LINING

Fasteners

INNER LAYER: 25mm x 6g GIB® Grabber® Drywall Self Tapping Screws.

OUTER LAYER: 41mm x 6g and 38mm x 10g Laminator screws as above.

Fastener Centres

INNER LAYER: 150mm centres around perimeter of each sheet. Single screws at 200mm centres along each DGW40D-1200 cross tee.

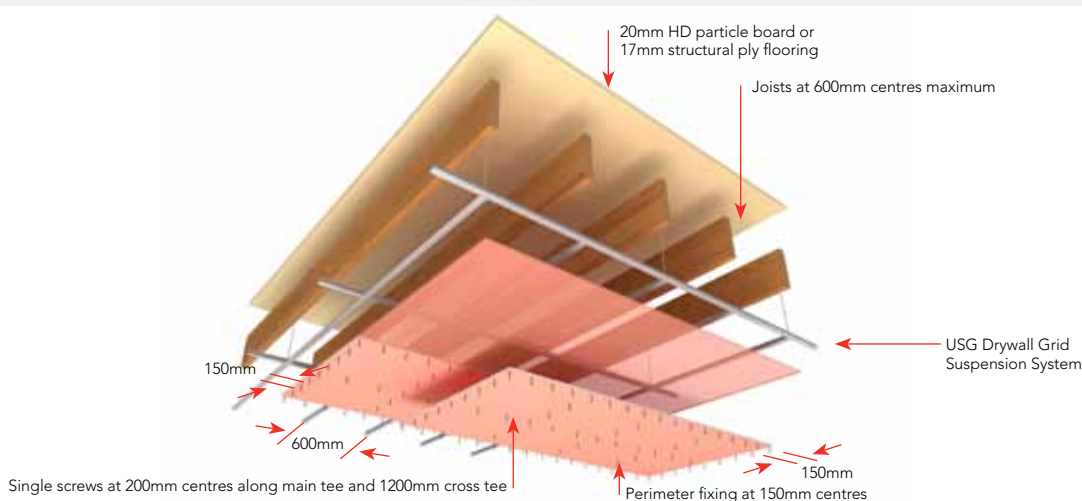
OUTER LAYER: As above. Where sheet perimeter fasteners do not coincide with steel suspension component, GIB® Grabber® Laminator screws are to be used.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ OR PHONE 0800 100 442



FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 15	LB/NLB	(15)/15/15	1 layer 13mm GIB Fyrelite®

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum.

Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

Solid nogs shall be provided at 1200mm centres maximum and to the perimeter of the fire rated ceilings.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

One layer of 13mm GIB Fyrelite® shall be fixed at right angles to the underside of the framing members.

Sheets shall be touch fitted.

All sheet joints must occur over solid framing.

Alternatively longitudinal sheet edges may be back-blocked in accordance with the procedure outlined in the "GIB® Site Guide".

FASTENING THE LINING

Fasteners

TIMBER FRAME	STEEL FRAME
41mm x 6g GIB® Grabber® High Thread Drywall Screws	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws

Fastener Centres

200mm centres around the sheet perimeters, along each intermediate framing member and at 200mm centres where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

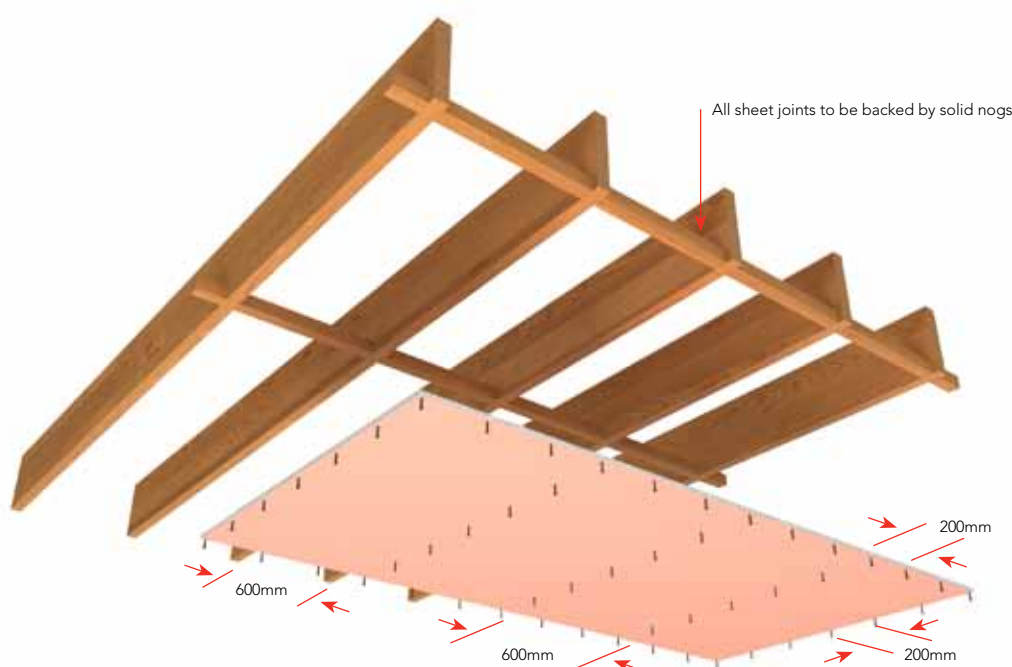
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 30	LB/NLB	(30)/30/30	1 layer 16mm GIB Fyreline®

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum. Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

Solid nogs shall be provided at 1200mm centres maximum and to the perimeter of the fire rated ceiling.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

One layer of 16mm GIB Fyreline® shall be fixed at right angles to the underside of the framing members.

Sheets shall be touch fitted.

All sheet joints must occur over solid framing.

FASTENING THE LINING

Fasteners

TIMBER FRAME	STEEL FRAME
41mm x 6g GIB® Grabber® High Thread Drywall Screws	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws

Fastener Centres

200mm centres around the sheet perimeters, along each intermediate framing member where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

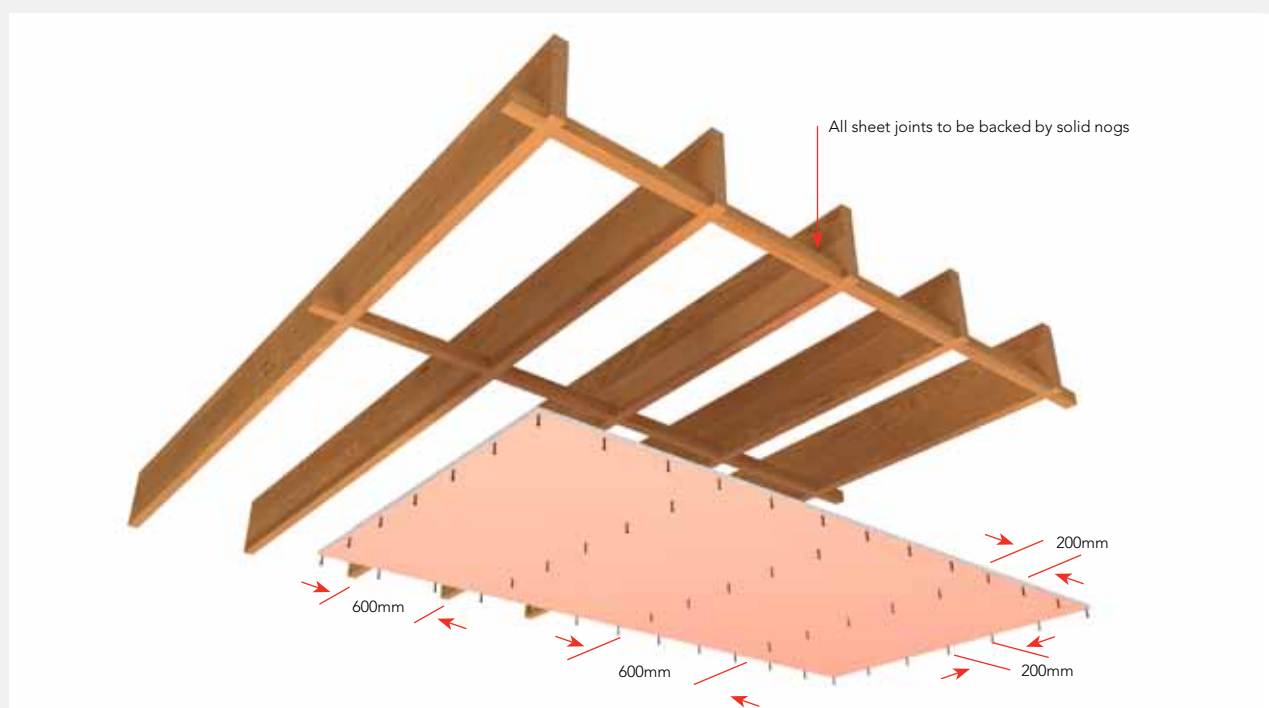
WALL/CEILING JUNCTIONS

The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



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FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 45	LB/NLB	(45)/45/45	2 layers 13mm GIB Fyrelite®

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum.

Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

In respect of the FRR for this particular system, nogs are required only at the perimeter of the fire rated ceiling.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

2 layers of 13mm GIB Fyrelite® shall be fixed at right angles to the underside of the framing members.

The joints of the second layer are offset 600mm from those in the first layer.

Sheets shall be touch fitted.

All sheet end butt joints must occur over solid framing.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer	51mm x 7g screws as above	41mm x 6g screws as above

Fastener Centres (both layers)

200mm centres around the ceiling perimeter, along each intermediate framing member where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

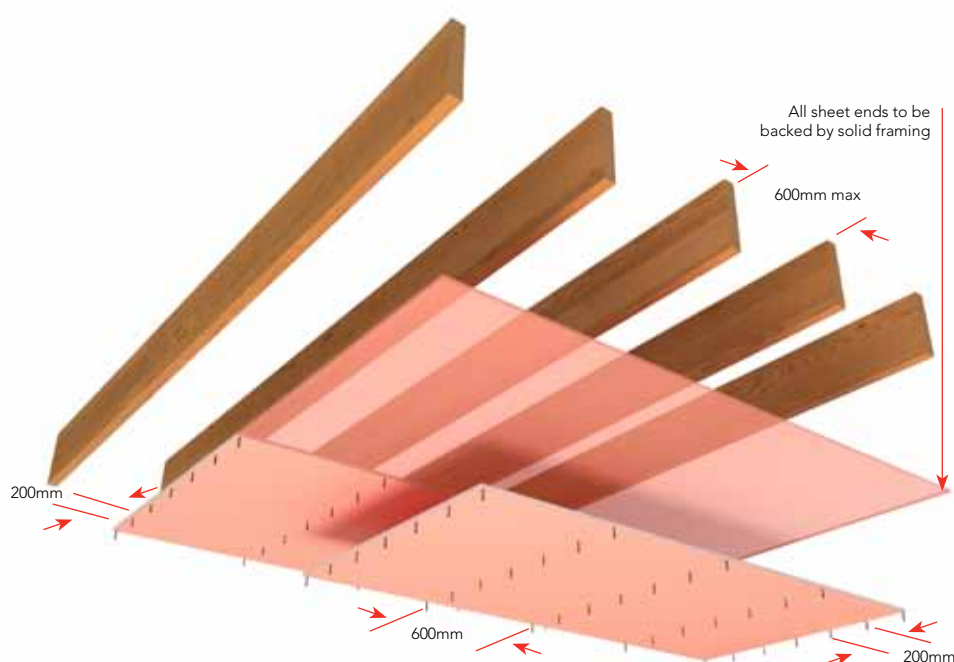
The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

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FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 60	LB/NLB	(60)/60/60	1 layer 16mm GIB Fyrelite®+ 1 layer 13mm GIB Fyrelite®

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum. Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

In respect of the FRR for this particular system, nogs are required only at the perimeter of the fire rated ceiling.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

1 layer of 16mm GIB Fyrelite® (Inner layer) plus 1 layer of 13mm GIB Fyrelite® fixed at right angles to the underside of the framing members.

The joints of the second layer are offset 600mm from those in the first layer.

Sheets shall be touch fitted.

All sheet end butt joints must occur over solid framing.

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer (16mm GIB Fyrelite®)	41mm x 6g GIB® Grabber® High Thread Drywall Screws	25mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer(13mm GIB Fyrelite®)	51mm x 7g screws as above	41mm x 6g screws as above

Fastener Centres (both layers)

200mm centres around the ceiling perimeter, along each intermediate framing member and also at 200mm centres where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

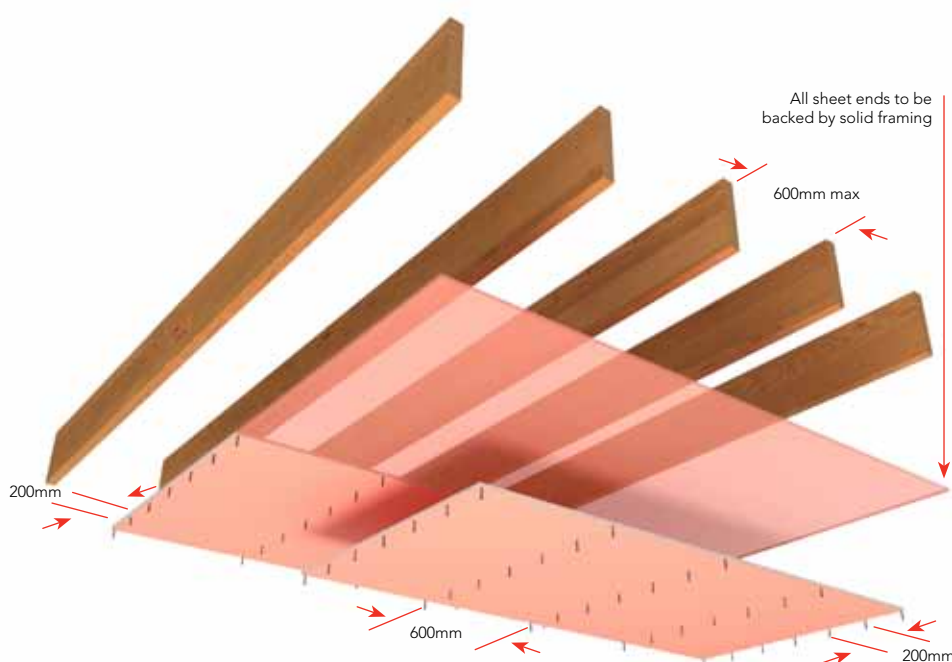
The internal angle between the ceiling and walls must be protected by GIB-Cove® adhered with GIB-Cove® Bond, or boxed corners (square stopped) filled and taped in accordance with the publication entitled "GIB® Site Guide".

JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

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FIRE RATED CEILING SYSTEMS

CEILING SYSTEMS - TIMBER OR STEEL FRAME

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBUC 90	LB/NLB	(90)/90/90	2 layers 19mm GIB Fyreline®
GBUC 120*		(120)/120/120	

FRAMING

Timber or steel roof or floor/ceiling framing designed to meet structural criteria for strength and serviceability under dead and live loads.

The separation distance between the ceiling linings and any flooring or roofing material shall be 90mm minimum.

Linings shall be supported by framing members with a minimum width of 35mm spaced at 600mm centres maximum.

Nogs are required only at the perimeter of the fire rated ceiling.

If timber framed construction applies, the nogs shall be 75 x 40mm minimum.

CEILING LINING

2 layers of 19mm GIB Fyreline® shall be fixed at right angles to the underside of the framing members.

The joints of the second layer are offset 600mm from those in the first layer.

Sheets shall be touch fitted.

All sheet end butt joints must occur over solid framing.

**Note: A 120 minute FRR (GBUC 120) is achieved with the addition of minimum 50 mm thick mineral or ceramic fibre insulation with a minimum density of 80kg/m³ in the floor cavity.*

FASTENING THE LINING

Fasteners

LAYER	TIMBER FRAME	STEEL FRAME
Inner layer	41mm x 6g GIB® Grabber® High Thread Drywall Screws	32mm x 6g GIB® Grabber® Drywall Self Tapping Screws
Outer layer	51mm x 7g screws as above	51mm x 7g screws as above

Fastener Centres (both layers)

200mm centres around the ceiling perimeter, along each intermediate framing member and also at 200mm centres where sheet end butt joints occur.

Place fasteners 12mm from bound sheet edges and 18mm from sheet ends.

WALL/CEILING JUNCTIONS

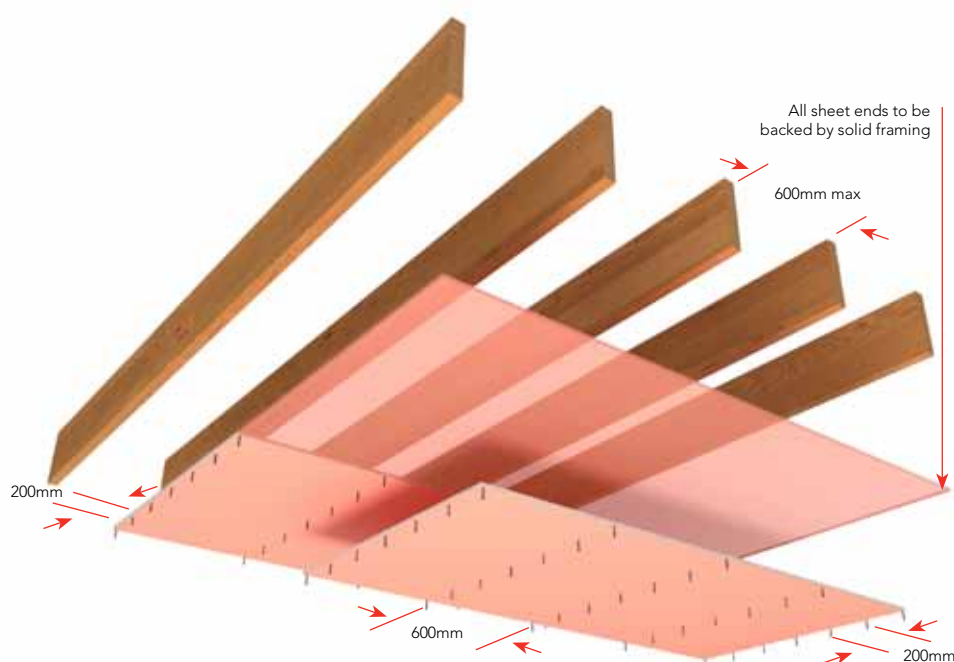
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JOINTING

INNER LAYER: Unstopped.

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

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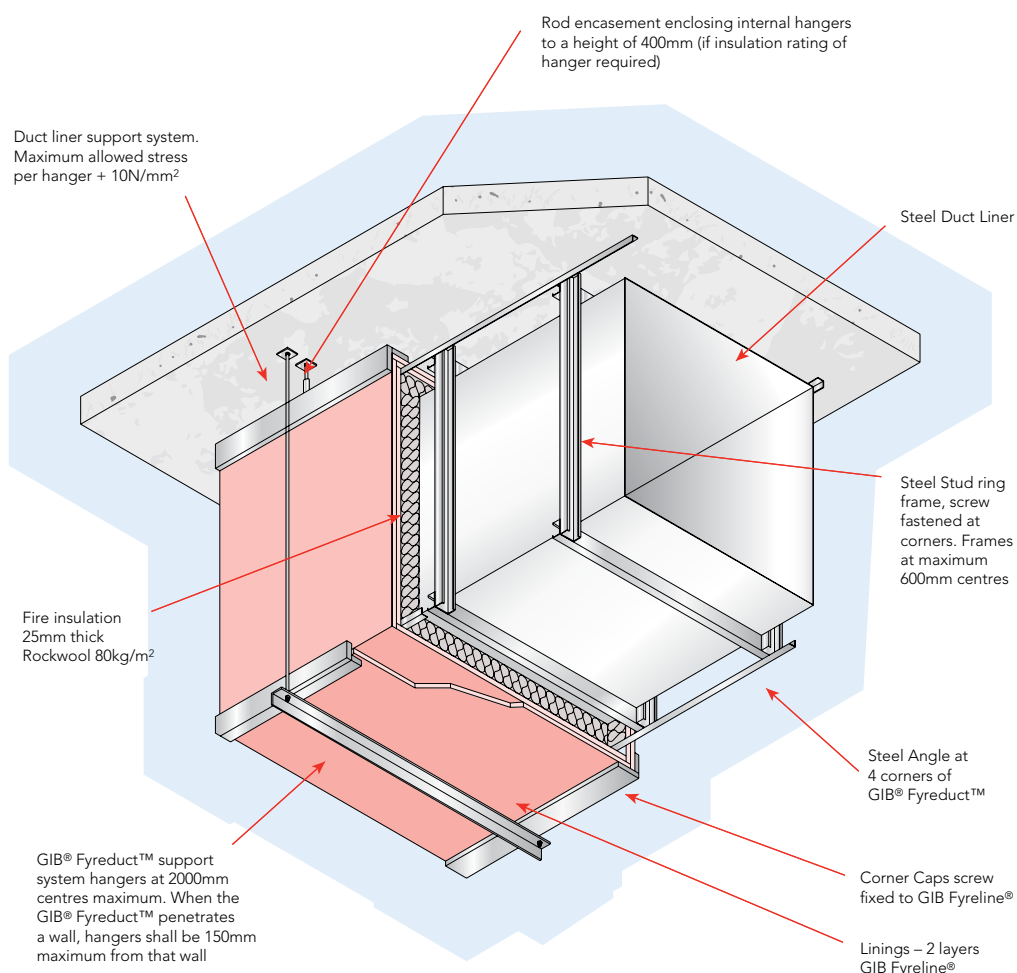
FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® FYREDUCT™ 900

SPECIFICATION NUMBER	LOADBEARING CAPABILITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBFD 900	NLB	-/120/120	2 layers 19mm GIB Fyreline®
		-/90/90	2 layers 16mm GIB Fyreline®
		-/60/60	2 layers 13mm GIB Fyreline®
		-/30/30	2 layers 10mm GIB Fyreline®

DUCT COMPONENTS

- GIB Fyreline®
- 64 x 34 x 0.55mm C-section galvanised steel stud
- 32 x 32 x 0.55mm galvanised steel angle
- GIB® Grabber® Drywall Self Tapping Screws
- 38mm x 10g GIB® Grabber® Laminator Screws
- Rockwool 80kg/m²
- Steel duct liner
- Duct support system

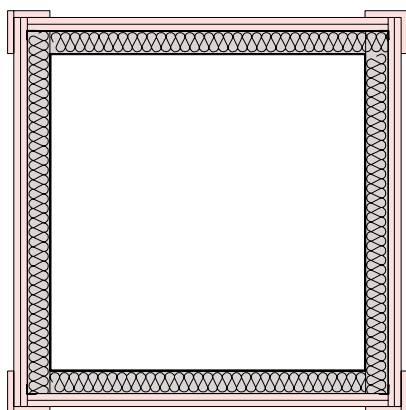
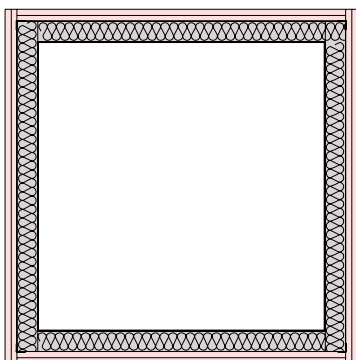
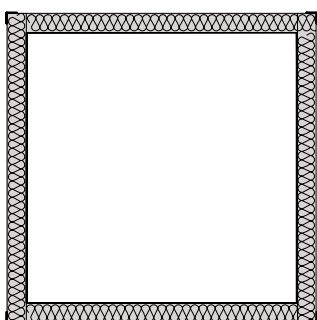
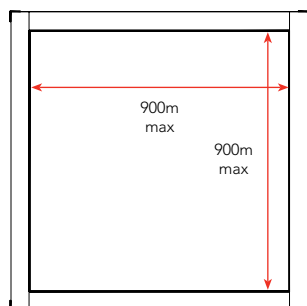


In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® FYREDUCT™ 900



BUILDING THE DUCT

Step 1

Cut C-section studs and screw together at the corners to form ring frames around the steel duct liner. Fit angles to all corners of the steel frames. Space frames at 900mm centres maximum.

Step 2

Insert the Rockwool insulation in between the ring frames around all four sides of the duct.

Step 3

Sheets shall be touch fitted.
Offset joints between layers by 600mm.
All sheet joints must be formed over framing.
INNER LAYER: GIB® Grabber® Drywall Self Tapping Screws at 300mm centres to sheet perimeter and intermediate studs. The screw length must ensure 12mm penetration into the steel frame.
OUTER LAYER: GIB® Grabber® Drywall Self Tapping Screws at 300mm centres to sheet perimeter and intermediate studs. The screw length must ensure 12mm penetration into the steel frame.

Step 4

Fit GIB Fyreliner® caps to all corners.
Fix corner caps with 38mmx10g GIB® Grabber® Laminator Screws.
INNER LAYER: Unstopped.
OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED RISERS, SHAFTS AND DUCTS

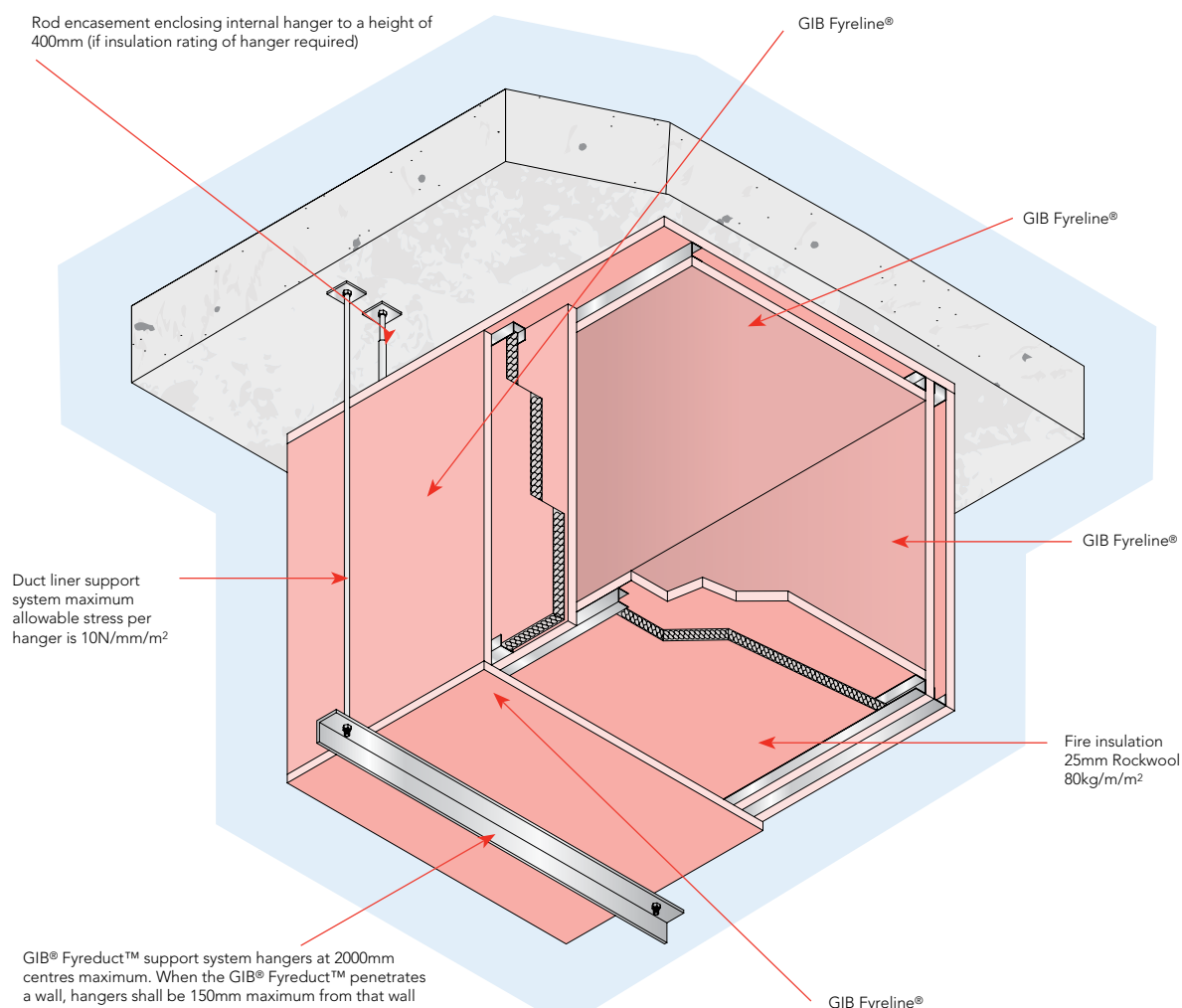
GIB® FYREDUCT™ 600

SPECIFICATION NUMBER	LOADBEARING CAPABILITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS
GBFD 600	NLB	-/120/120	2 layers 19mm GIB Fyreline®
		-/90/90	2 layers 16mm GIB Fyreline®
		-/60/60	2 layers 13mm GIB Fyreline®
		-/30/30	2 layers 10mm GIB Fyreline®

DUCT COMPONENTS

- GIB Fyreline®
- Minimum 30 x 30 x 0.55mm galvanised steel channel
- 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws
- 38mm x 10g GIB® Grabber® Laminator Screws
- Rockwool 80kg/m²
- Duct support system

Note: All sheet end butt joints are to be back blocked with a 200mm wide strip of GIB Fyreline®.

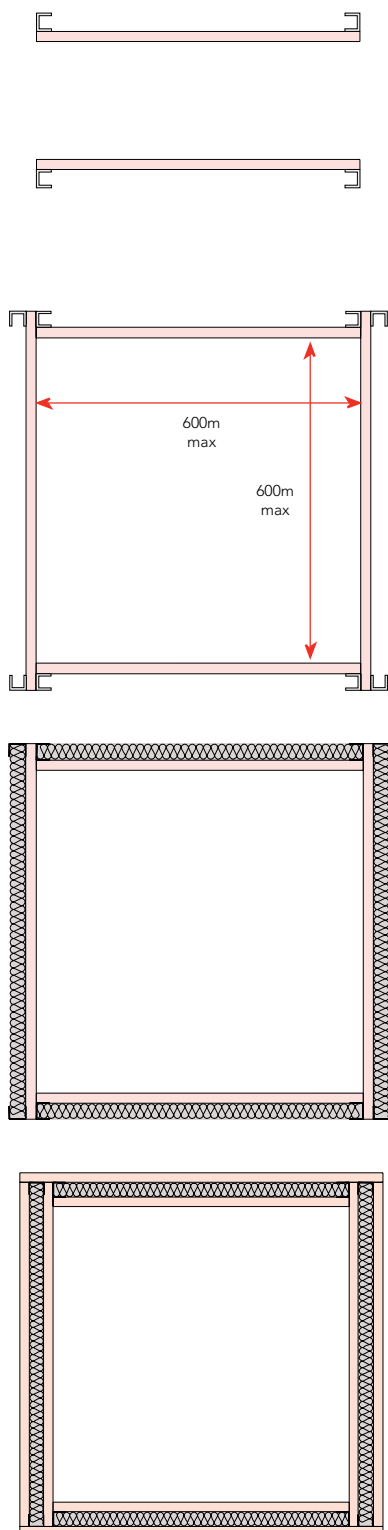


In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® FYREDUCT™ 600



BUILDING THE DUCT

Step 1

Cut 600mm wide strips of GIB Fyrelite® to form the bottom and top of the duct.

Attach 63 x 34 x 0.55mm galvanised steel channels to sheet edges with 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws at 300mm centres.

Cut strips of GIB Fyrelite® to form the sides of the duct. Attach 63x34x0.55mm galvanised steel channels to sheet edges with 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws at 300mm centres.

Step 2

Fabricate the duct by attaching 30x30x0.55mm galvanised steel channels at duct corners with 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws at 300mm centres.

Step 3

Insert the Rockwool insulation around all four sides of the duct. Cut strips of GIB Fyrelite® to form the outer layer of the duct.

Step 4

Sheets shall be touch fitted.

Offset joints between layers by 600mm.

All sheet joints must be back blocked with 200mm wide strips of GIB Fyrelite® attached to outer lining with 38mmx10g GIB® Grabber® Laminator Screws.

OUTER LAYER: 32mm x 6g GIB® Grabber® Drywall Self Tapping Screws at 300mm centres to sheet edges.

Step 5

INNER LAYER: Unstopped.

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.



FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® VENTSHAFT

SPECIFICATION NUMBER	LOADBEARING CAPACITY	FIRE RESISTANCE RATING	LINING REQUIREMENTS	SYSTEM WEIGHT APPROX
GVS60	NLB	-/60/60	3 x 16mm GIB Fyrelime®	45kg/m ²

GIB® Ventshaft is constructed from the landing side of the shaft.

FRAMING

Primary Horizontal Angles

25mm x 50mm (0.75BMT) metal angles fixed to floor slab and slab soffit on all sides. Ensure a good fit of the angle at the corners. Fix with steel masonry anchors at 400mm centres. Mark the position of the anchors on the slab for future layout reference.

Primary Vertical Angles

25mm x 50mm (0.75BMT) metal angles to all corners full height in one continuous straight length ensuring good fit slab to slab. Fix with 16mm panhead self tapping screws.

Secondary Angles

After the first layer of 16mm GIB Fyrelime® has been fixed, fix 25 x 50mm (0.75BMT) metal angles to the base and head positions on all sides ensuring a good fit at all corners. Fix with metal anchors at 400mm centres. Stagger anchors 200mm from primary anchors.

WALL HEIGHT

The wall height is limited to 3000mm.

LINING AND FASTENING

First Layer

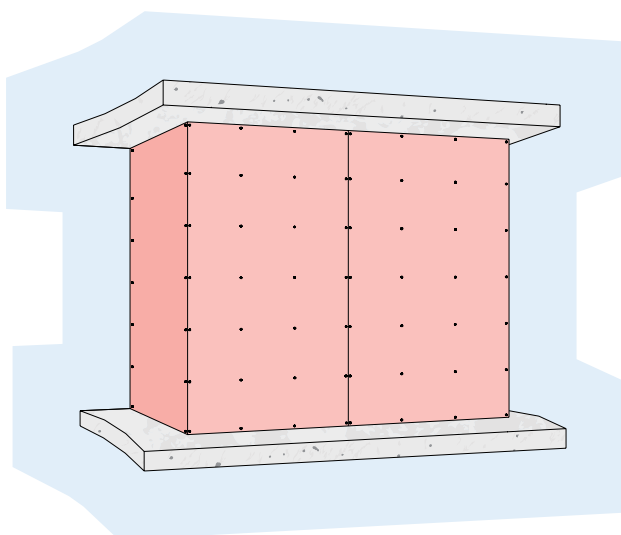
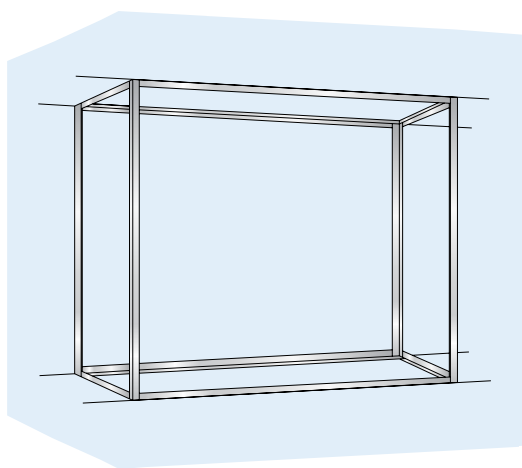
Fix the first layer of 16mm GIB Fyrelime® to the metal angles at 600mm centres horizontally commencing from one end or corner progressively attaching around the shaft using 32mm x 6g GIB® Grabber® Screws. Fix the 16mm GIB Fyrelime® to the metal angles at the corners and walls at 400mm centres commencing 200mm up from the base angle using 32mm x 6g GIB® Grabber® Screws. Plasterboard should be fixed hard to floor slab and slab soffit.

Second Layer Lamination

Cut sheet to provide a good fit slab to slab and/or intersecting walls. Mark up face of the 16mm GIB Fyrelime® sheet at 400mm centres vertically. Note the recesses in the previous layer are supported by an additional double line of laminating screws. Mark up the face horizontally at 400mm centres commencing 200mm up from the base.

Stagger/overlap sheets by no less than 300mm. Fix second layer of 16mm GIB Fyrelime® to the metal angles at 600mm centres commencing from one end or corner using 41mm GIB® Grabber® Screws. Laminate to the first sheet using 38mm x 10g GIB® Grabber® Laminator Screws.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® VENTSHAFT

THIRD LAYER LAMINATION

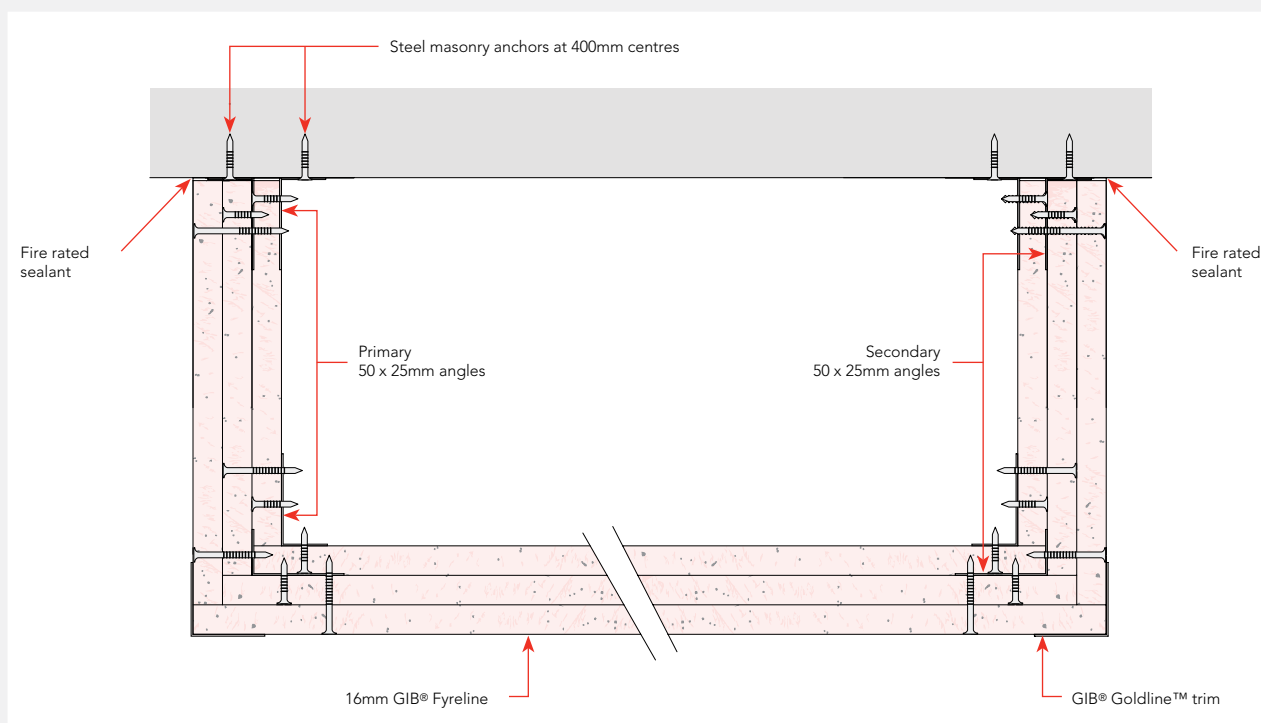
Cut sheet to provide a 10-13mm gap at the base and head where intersecting walls/structures of dissimilar materials occur. Mark up the face of the 16mm GIB Fyreline® at 400mm centres vertically commencing from the recess to provide an even screw stagger. Mark up the face horizontally at 400mm centres commencing from base. Note the recess in the previous layer is supported by an additional double line of laminating screws. Stagger/overlap sheets by no less than 300mm. Screw fix at the perimeter to the metal angles using 63mm GIB® Grabber® Screws ensuring 10-13mm gap is provide for fire rated sealant. Laminate to second layer as first layer sheets using 38mm x 10g GIB® Grabber® Laminator Screws. Apply fire rated sealant to the perimeter. Ensure boards overlap at corners, fix external GIB® Goldline™ trims.

JOINTING

INNER LAYERS: Unstopped.

OUTER LAYER: All screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

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FIRE RATED RISERS, SHAFTS AND DUCTS

CHASE WALLS

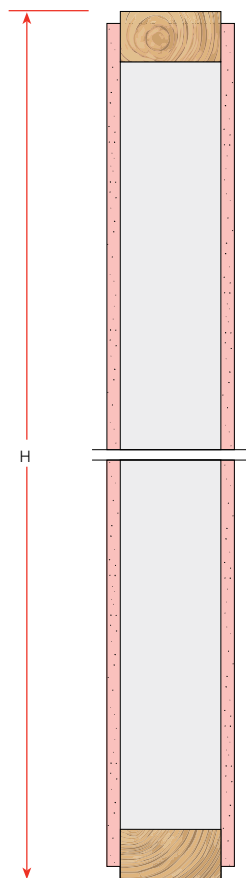
Services may be reticulated within the cavity space between double studded chase walls. Fire protection of fire compartments either side of the chase wall will be achieved when using timber or steel framed non-loadbearing vertical fire separations.

The following conditions apply:

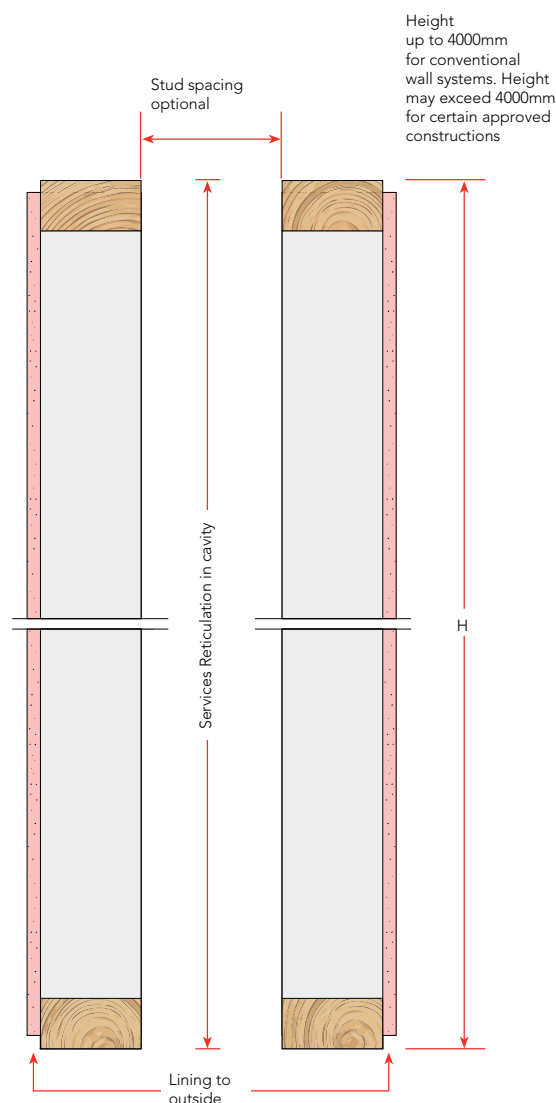
- Any service penetrations must be made in the chase wall as described in this publication, refer pages 73-78

- Non-loadbearing wall constructions only may be used
- Approved variations are:
- Chase Wall systems may be stiffened using cross bracing between opposite framing members comprising either stud sections fastened at intervals to opposing studs or rectangular pieces of GIB® fastened by perimeter fixings to opposing studs
- Stud spacing between walls in the double stud construction is optional

Example of Conventional single stud wall construction for two-way FRR. Framing may be timber or steel.



Example of Chase Wall Construction





FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® SHAFTWALL

Specification number	FRR	Fire side	Landing side lining (Note: Shaft side lining is 2/13 mm GIB Fyrelime® in all cases.)	Sound Transmission Class (STC)*			
				64 mm stud		102 mm stud	
				No fill	Fill	No fill	Fill**
GBSH 30	-/30/30	Either	1/13 mm GIB Fyrelime®	38	44	41	46
GBSH 60a	-/60/60	Shaft					
GBSH 60b	-/60/60	Either	2/13 mm GIB Fyrelime®	42	48	45	49
GBSH 90a	-/90/90	Shaft					
GBSH 90b	-/90/90	Either	Inner layer: 16 mm GIB Fyrelime® Outer layer: 13 mm GIB Fyrelime®	43	49	45	50
GBSH 120a	-/120/120	Shaft					
GBSH 120b	-/120/120	Either	2/19 mm GIB Fyrelime®	45	45	47	50

* To achieve STC ratings an acoustic sealant must be used around the perimeter of the landing linings (between sheets for double layered systems).

** Fill is a minimum 50mm thick glass fibre insulation

GIB® Shaftwall is constructed from the Landing Side of the shaft. All systems are non-load bearing.

FRAMING & WALL HEIGHT

GIB® Shaftwall Framing comprising Rondo® CH stud, Rondo® E stud and Rondo® J-Track.

The Rondo® J-Track is installed at the top and bottom of the wall. Installation starts at one end of the wall using a Rondo® E stud. Rondo® CH studs are spaced at 600mm centres maximum and friction fitted into the top and bottom tracks, there is to be no mechanical fixing. Installation is completed at the other end using a Rondo® J-Track. A 15mm expansion gap is left between the studs and the track at the top of the frame.

Stud depth	Maximum allowable wall height
64mm	3600mm
102mm	4258mm (with lift car)
102mm	4350mm (without lift car)

LINING

2 layers of 13mm GIB Fyrelime® on the shaft side and the appropriate number of layers and type of GIB® Plasterboard as detailed in the above table on the landing side.

On the shaft side a single sheet of 13mm GIB Fyrelime® is cut lengthwise and placed as a 26mm thick 600mm wide plank vertically in the Rondo® CH stud as shown. Position the board 'taper to a cut-end' to facilitate easy installation in the Rondo® CH stud.

The board is fixed hard to floor and a 15mm gap is left at the top of the frame which is filled with an appropriate fire rated mastic sealant of equivalent fire rating (consult the sealant supplier or manufacturer) prior to lining the floor side of the wall.

Floor side linings are fixed vertically, using full height sheets where possible. Where sheet end butt joints are unavoidable they shall be formed over nogs. All sheet joints must be formed over framing. Linings are fixed hard to the floor. Any gaps that are left at the top of the linings are to be filled with an appropriate fire rated mastic sealant of equivalent fire rating (consult the sealant supplier or manufacturer).

FASTENING THE LINING

Shaft Side

Linings are friction fitted into the Rondo® CH or Rondo® E stud. At the end of the wall, linings are fixed to the Rondo® J track using 40mm x 6g GIB® Grabber® Self Tapping Drywall

Screws at 300mm centres.

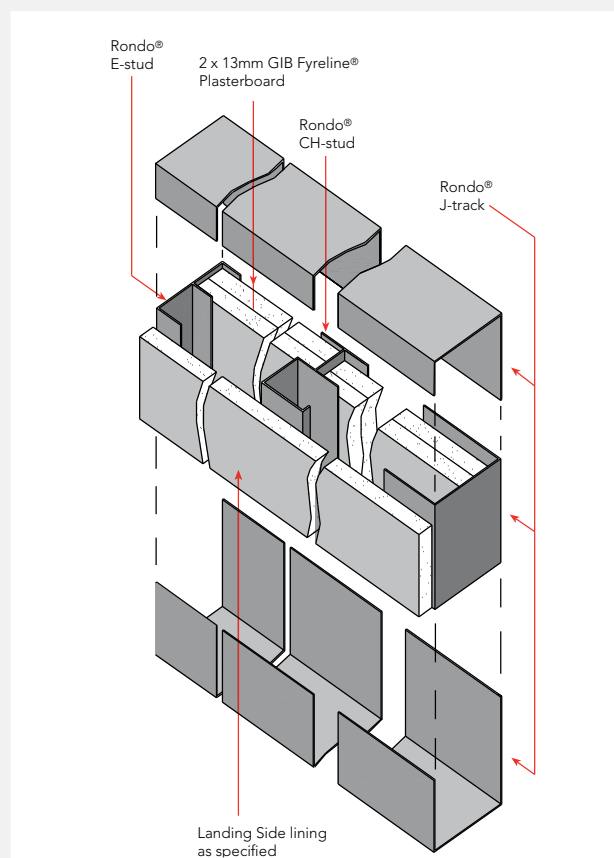
Landing Side

Fix to each stud with 6g GIB® Grabber® Self Tapping Drywall Screws at 300mm centres with the following lengths:

- SINGLE or INNER LAYER (13mm or 16mm GIB® Plasterboard): 32mm
- OUTER LAYER (13mm or 16mm GIB® Plasterboard): 41mm
- 19mm GIB Fyrelime®: INNER LAYER: 32mm; OUTER LAYER: 51mm x 7g screws as above

Note: Do not fix to the top and bottom J tracks.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED RISERS, SHAFTS AND DUCTS

GIB® SHAFTWALL

JOINTING

Shaft Side: Unstopped

Floor Side

INNER LAYER: Unstopped

OUTER LAYER: all screw heads stopped and all sheet joints tape reinforced and stopped in accordance with the "GIB® Site Guide".

INSTALLATION

Top and Bottom Tracks

Rondo® J-Tracks are cut to length and mechanically fixed at each end, and at a maximum of 600mm centres to the floor and upper beam or structural support. Place the long leg of the Rondo® J-Track toward the shaft. For steel frame construction, install Rondo® J-Track prior to any fireproofing spray application.

End Studs

Rondo® E-Stud is cut to full height and mechanically fixed at a maximum of 600mm centres to columns or support structures prior to any fireproofing spray application. A Rondo® J-Track is cut and fixed at the opposite end of the wall in the same manner placing the long leg towards the shaft.

GIB® Plasterboard Linings

Using full height sheets where possible, cut tapered edged 13mm GIB Fyreline® lengthwise in half leaving two 600mm wide panels. In all cases the panels should be cut to length to leave a 15mm clearance between the top of the panel and the Rondo® J-Track. Place the lining back to back with a taper at each side of the 600mm width and starting at the Rondo®

E-Stud the two layers are friction fitted into the Rondo® E-Stud on side nearest the shaft.

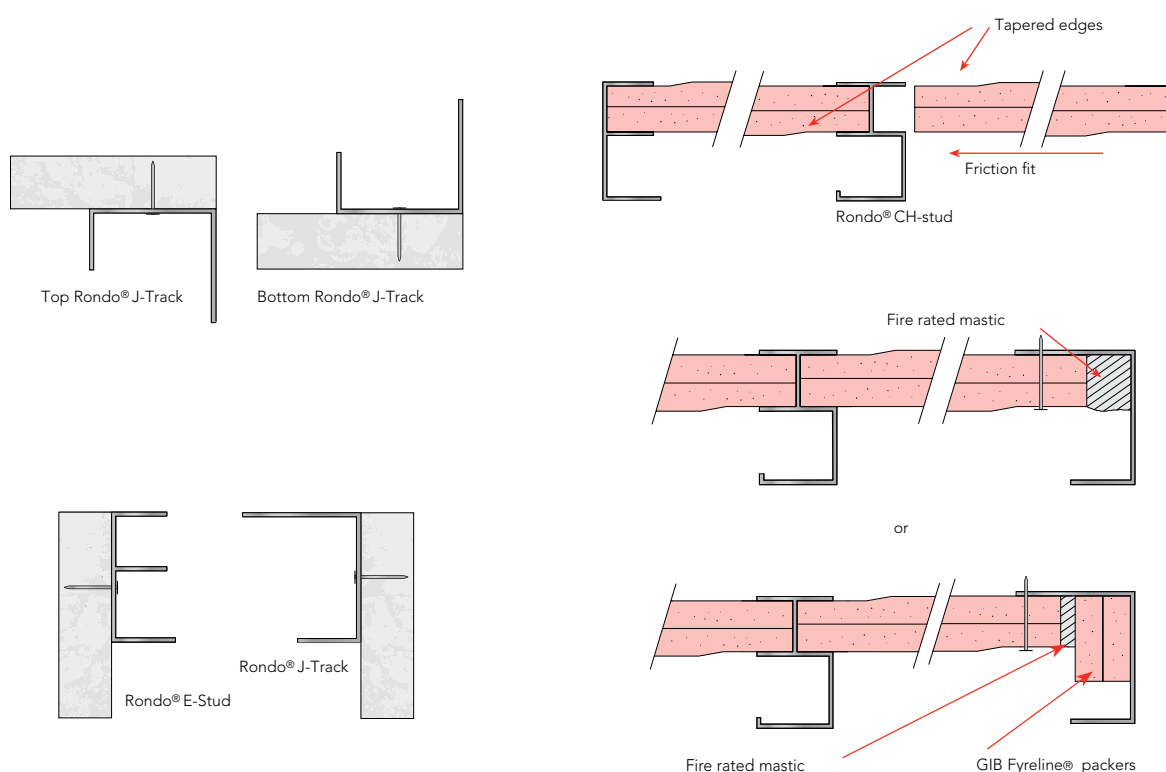
Studs

Rondo® CH-Studs are cut 15mm short of the full height between the top and bottom Rondo® J-Tracks and placed vertically into the Rondo® J-Tracks with the H side of the stud towards the Shaft. The stud is then located so that the GIB® lining slips into the H of the Rondo® CH-Stud. Cutting further 600mm wide panels and locating them into the H section this procedure is repeated until the final gap is 600mm or less.

End Lining Panel

The final lining panel is cut to such a size that it can be angled into the last stud and located into the Rondo® J-Stud already fixed to the structure. This is screw fixed to the long leg of the Rondo® J-Stud using 41mm x 6g GIB® Grabber® Self Tapping Drywall Screws at 300mm centres. To allow entry of the final lining panel, the bottom Rondo® J-Track floor side upstand will require cutting at the last E-Stud and bent down until the liner is in place and then returned to the vertical. Before lining the floor side of the wall the 15mm gap between board and top Rondo® J-Track and the gap between board and Rondo® J-Stud should be completely filled with an appropriate fire rated mastic sealant of equivalent fire rating (consult the sealant supplier or manufacturer). Alternatively the gap can be filled with a GIB Fyreline® packer as shown in the bottom detail below.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED RISERS, SHAFTS AND DUCTS

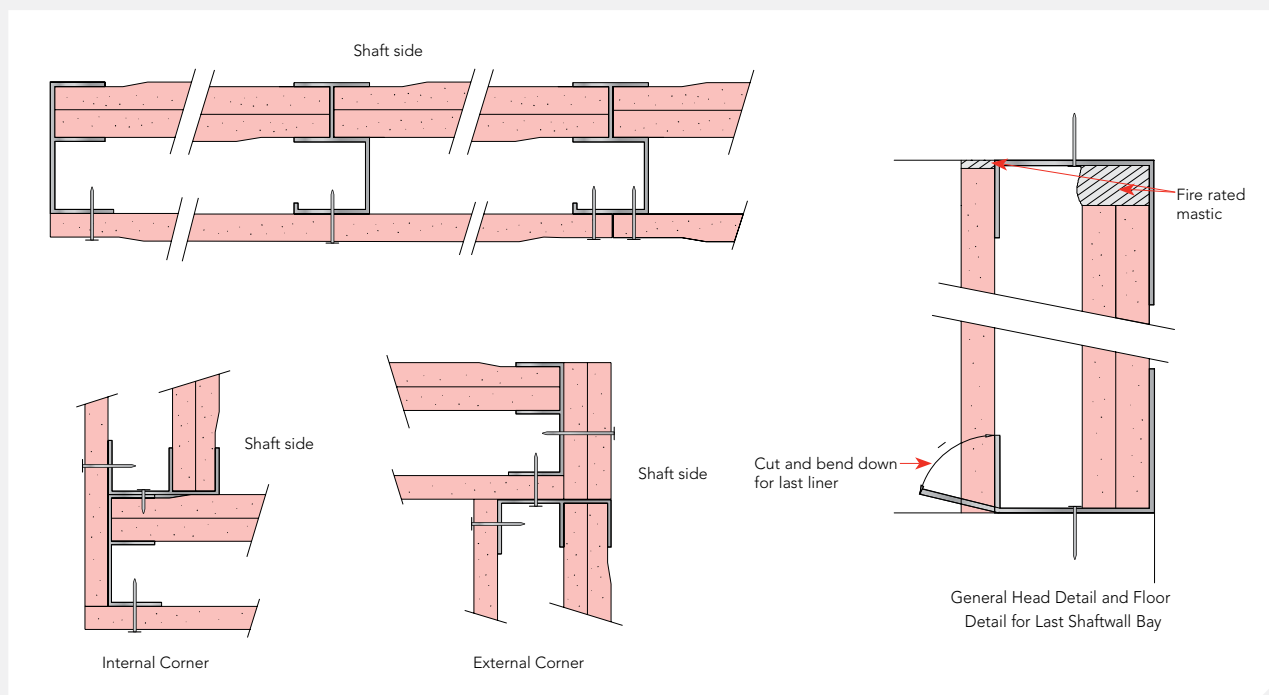
GIB® SHAFTWALL

LANDING SIDE LINING

Using full height sheets where possible, tapered edge GIB® Plasterboard is fixed vertically to each stud with GIB® Grabber® Self Tapping Drywall Screws at 300mm centres. In all cases the sheets are to be cut to length. All sheets should be bearing on to the floor and not fixed to either the top or bottom Rondo® J-Tracks. Systems with more than one layer of lining must have staggered joints at alternate

studs. Any gaps are to be filled with an appropriate fire rated mastic sealant of equivalent fire rating (consult the sealant supplier or manufacturer).

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED SYSTEMS

FIRE RATED PROTECTION OF STEEL COLUMNS AND BEAMS – TIMBER STRAPPING

SCOPE OF USE

The options offered in this section provide quick reference solutions for the fire protection of structural steel columns and beams.

For engineered solutions, tailored to meet specific column and beam sizes and loading conditions, specific fire engineering design is required.

For further assistance contact the GIB® Helpline 0800 100 442.

FRR (STABILITY RATING IN MINUTES*)	LINING REQUIREMENT COLUMNS AND BEAMS
15	1 x 13mm GIB® Standard
30	1 x 16mm GIB Fyreline®, or 2 x 10mm GIB Fyreline®
60	2 x 13mm GIB Fyreline®
90	2 x 16mm GIB Fyreline®
120	2 x 19mm GIB Fyreline®

* The FRR comprises values for structural adequacy/integrity/ and insulation. For loadbearing structural steel members (primary elements) the structural adequacy rating is usually the only requirement and prevents collapse during a fire.

If the structural member is an integral part of a fire rated wall or floor/ceiling system, then integrity and insulation values may apply. In this case the systems will achieve equal values, e.g. 30/30/30.

STRAPPING

Strap column or beams with a nominal 50mm x 50mm timber cradle frame ensuring that the linings are supported by framing members spaced at 600mm centres maximum.

LINING

Install the linings in accordance with the required FRR as specified above. First and second layer joints must be formed over framing. In double layer systems, the joints between the first and second layer must be offset by 300mm minimum.

FASTENING THE LINING

Fasteners

GIB® Grabber® High Thread Drywall Screws.

The fastener length must ensure a 20mm minimum penetration into the timber framing.

Fastener Centres

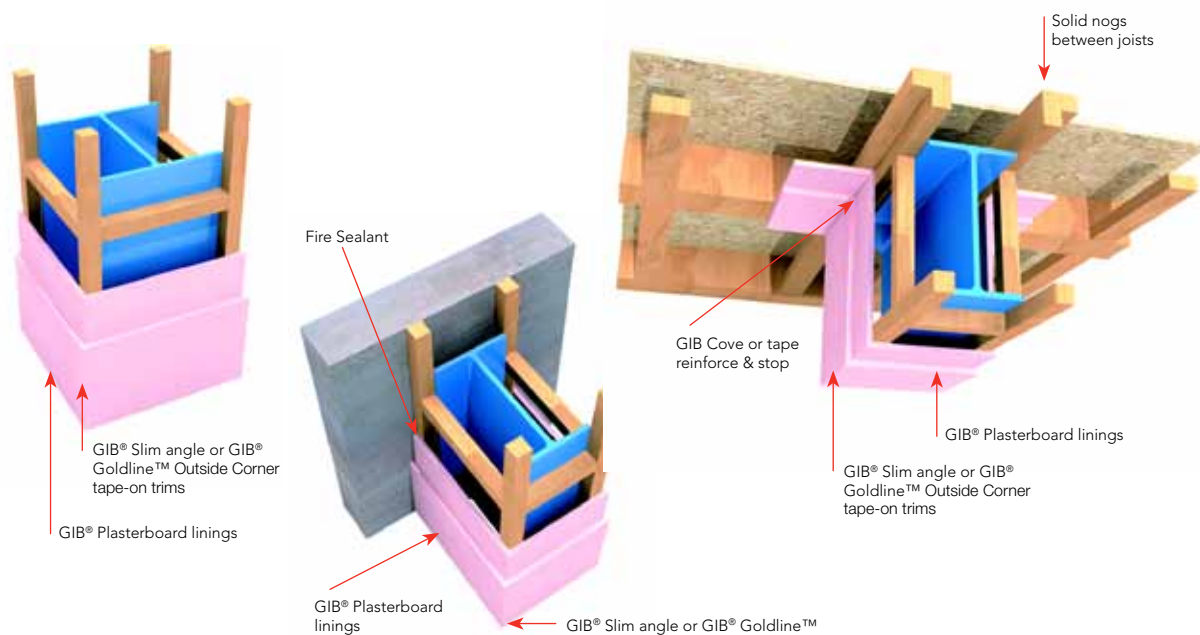
Each layer must be fixed at 300mm centres maximum to framing spaced at 600mm centres maximum.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide"

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





FIRE RATED SYSTEMS

FIRE RATED PROTECTION OF STEEL COLUMNS AND BEAMS – STEEL CLIP AND CHANNEL

SCOPE OF USE

The options offered in this section provide quick reference solutions for the fire protection of structural steel columns and beams.

For engineered solutions, tailored to meet specific column and beam sizes and loading conditions, specific fire engineering design is required.

For further assistance contact the GIB® Helpline 0800 100 442.

FRR (STABILITY RATING IN MINUTES*)	LINING REQUIREMENT COLUMNS AND BEAMS
15	1 x 13mm GIB® Standard
30	1 x 16mm GIB Fyreline®, or 2 x 10mm GIB Fyreline®
60	2 x 13mm GIB Fyreline®
90	2 x 16mm GIB Fyreline®
120	2 x 19mm GIB Fyreline®

* The FRR comprises values for structural adequacy/integrity/ and insulation. For loadbearing structural steel members (primary elements) the structural adequacy rating is usually the only requirement and prevents collapse during a fire.

If the structural member is an integral part of a fire rated wall or floor/ceiling system, then integrity and insulation values may apply. In this case the systems will achieve equal values, e.g. 30/30/30.

CLIP AND CHANNEL

Attach Rondo® Clip (part No. BMCL) to column or beam at 600mm centres maximum. Insert Rondo® 140 Perimeter Channel (part No. 140) into clips. Ensure that the linings are supported by framing members at 600mm centres maximum.

For beams exposed on three sides. Rondo® Perimeter Angle (part No. NZ 18) is to be secured to provide fixing for the linings.

The Rondo® Angle must be fixed to the underside of the floor at 600mm centres maximum. The Rondo® Angles are to be fixed at a maximum of 100mm centres in from each end.

LINING

Install the linings in accordance with the required FRR as specified above.

First and second layer joints must be formed over framing.

In double layer systems, the joints between the first and second layer must be offset by 300mm minimum.

FASTENING THE LINING

Fasteners

Use GIB® Grabber® Drywall Screws. The screw length must ensure a 12mm minimum penetration into the steel framing.

Fastener Centres

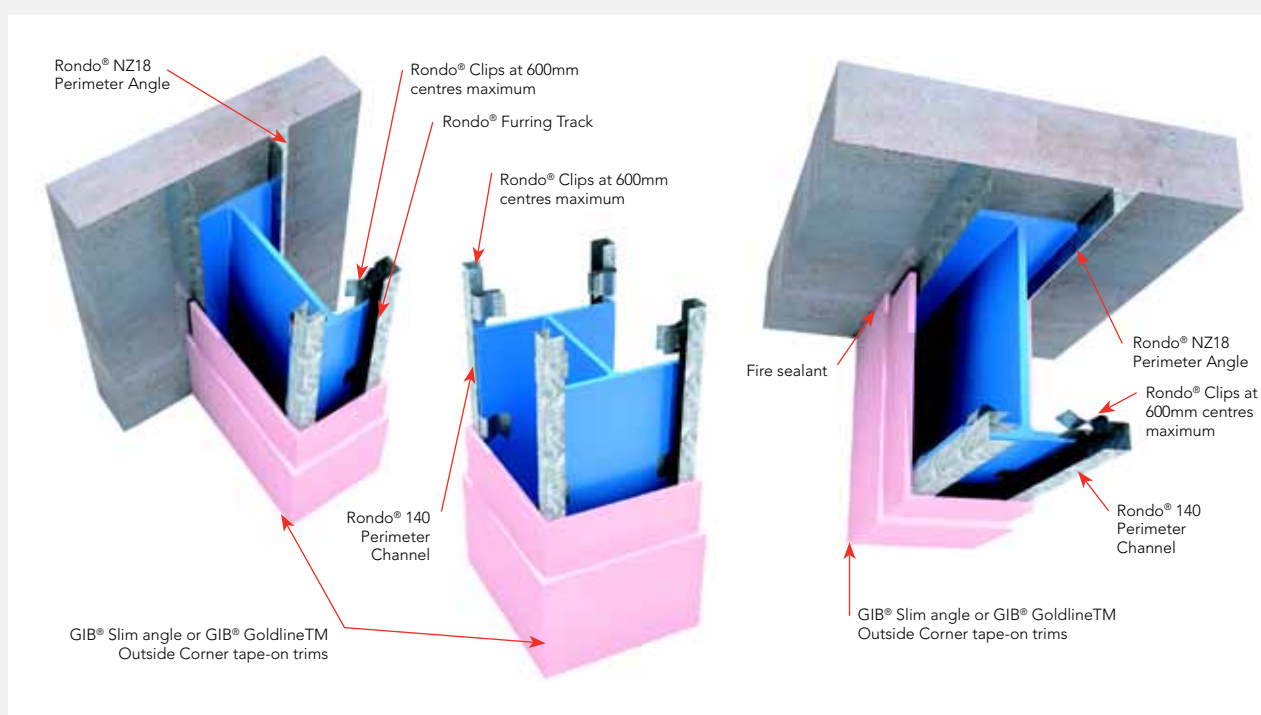
Each layer must be fixed at 300mm centres maximum to framing spaced at 600mm centres maximum.

JOINTING

INNER LAYER: Unstopped

OUTER LAYER: All fastener heads stopped and all sheet joints tape reinforced and stopped in accordance with the publication entitled "GIB® Site Guide".

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.





JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

CONTROL JOINTS

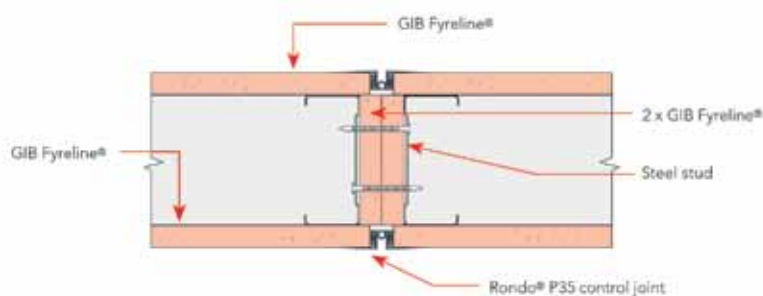
The control joints illustrated here are designed to accommodate small building movements likely to result from the relative movement of different building materials exposed to variations in temperature and humidity. Control joints are intended to eliminate random cracking of gypsum plasterboard joints and must be used in conjunction with our recommendations for installation, fixing, jointing and finishing GIB® Plasterboard.

The control joints illustrated here are not designed to accommodate structural movement such as that required for seismic separation. These building movements joints must be specifically designed.

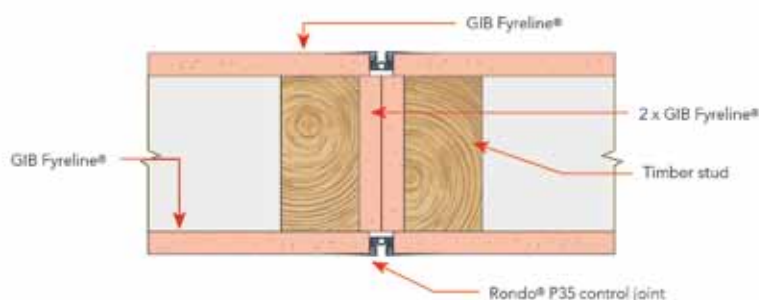
Details below show the principle of creating control joints in GIB® Fire Rated Systems. For assistance with the design of control joints in specific GIB® Systems call GIB® Helpline 0800 100 442.

JOINT POSITION	MAXIMUM CENTRES
Walls	9 metres
Ceilings	9 metres (without perimeter relief) 12 metres (with perimeter relief)

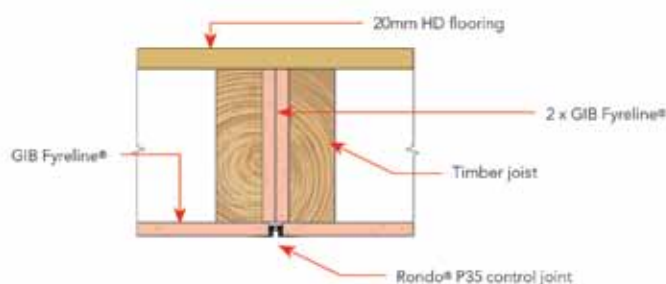
Fire Rated Walls – Steel Frame



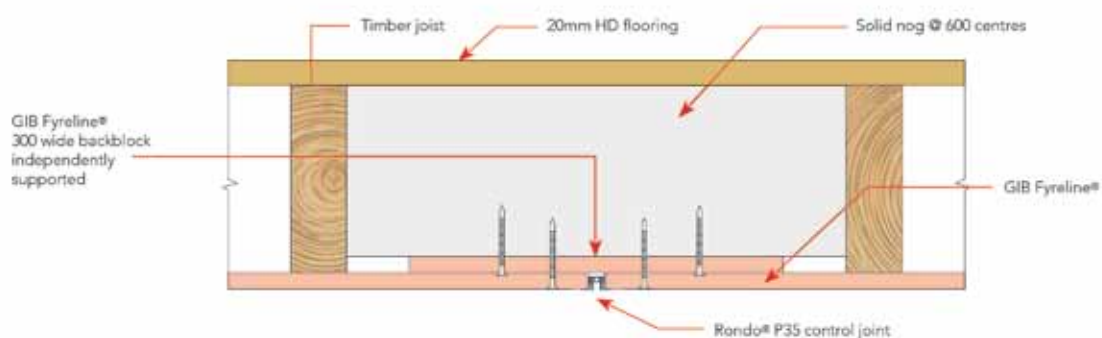
Fire Rated Walls – Timber Frame



Fire Rated Floor/Ceiling



Fire Rated Floor/Ceiling



FOR FURTHER INFORMATION VISIT WWW.GIB.CO.NZ OR PHONE 0800 100 442



JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

WALL AND CORNER JUNCTIONS

WALLS

The following junction details preserve the Fire Resistance Rating of any GIB® Fire Rated System to which they are applied. These junction details may also be used in smoke separations for compliance with the New Zealand Building Code Acceptable Solution C3/AS1. Provided any gaps greater than 0.5mm widths are sealed.

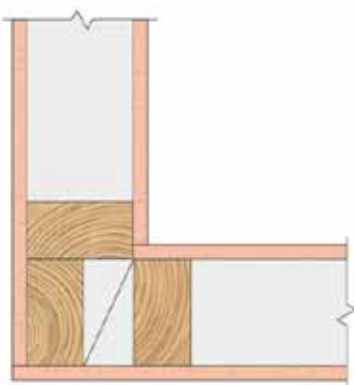
CORNER JUNCTIONS

Internal and external corners may be taped and stopped or reinforced with GIB® Goldline™ tape on trims.

Alternatively, internal and external corners may be reinforced with GIB® Slim Angle.

In order for GIB® systems to perform as tested, all components must be installed exactly as prescribed. Substituting components produces an entirely different system and may seriously compromise performance. Follow system specifications.

GBT or GBTL Systems



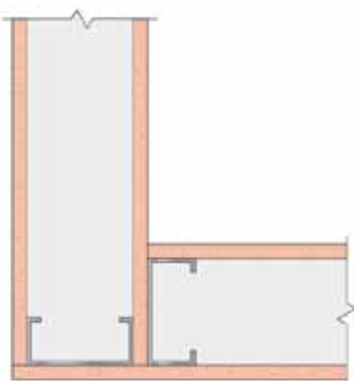
GIB® Goldline™ Outside Corner
Requires less jointing material, gives a truer right angle, thus eliminating nail "pops" and costly maintenance call backs.



Bullnose external corners are not permitted in fire rated systems



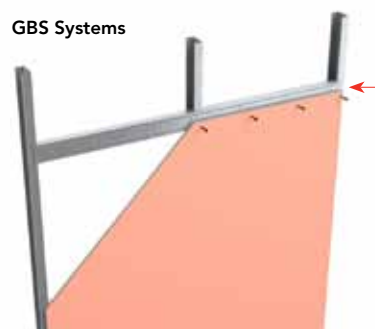
GBS or GBSL Systems



GIB® Goldline™ Internal Coved Corners



GBS Systems



Nog from ex 64 x 30 x 0.55 steel channel. Stagger nogs by at least 400 mm on opposite sides of the wall

Nog detail if sheet end joints are unavoidable

GIB® Goldline™ Inside Corner Gives a perfect "square set" angle with true/straight inner angle. The steel angle provides a guide for finishing tools thus ensuring perfect appearance. The steel and paper tape strengthen the corner and minimise hairline cracks.



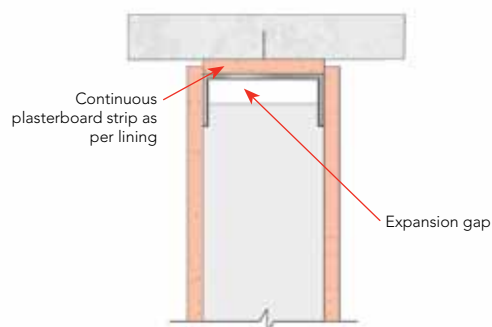
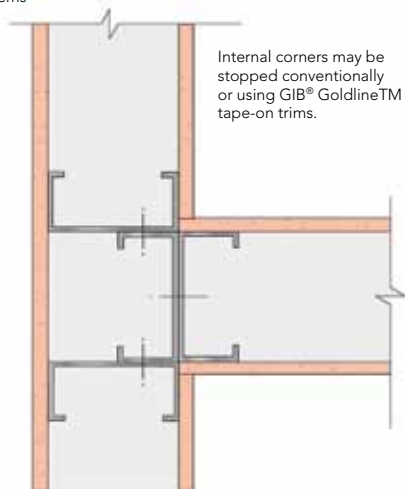


JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

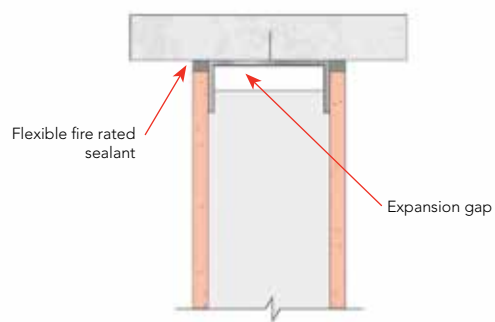
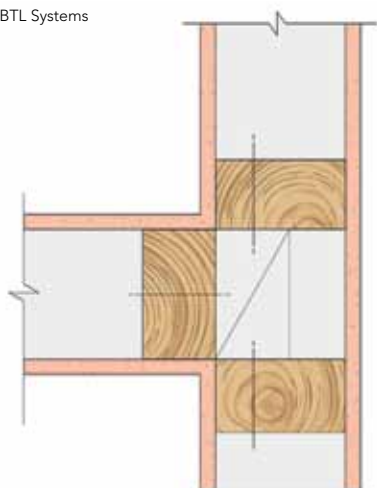
'T' JUNCTIONS

'T' JUNCTIONS FLOOR – WALL JUNCTIONS

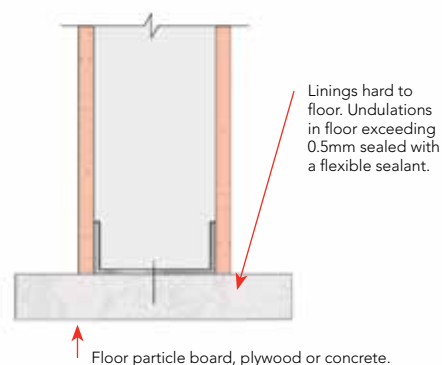
GBS/GBSL Systems



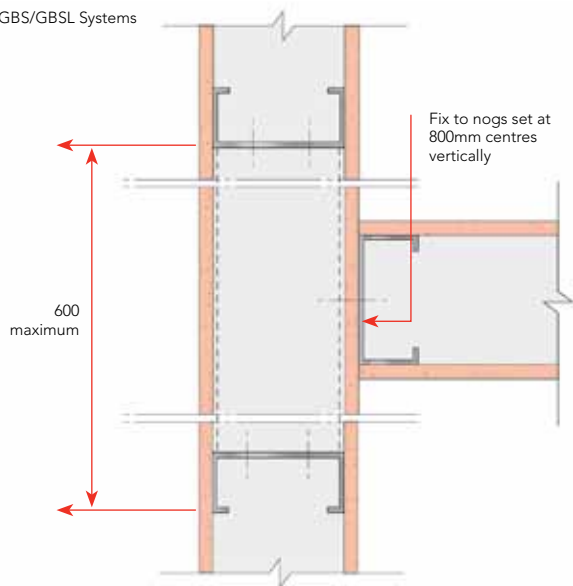
GBT/GBTL Systems



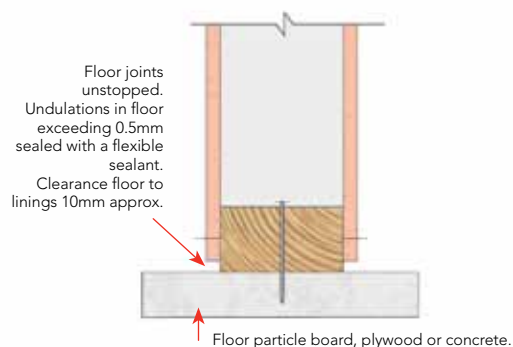
GBS Systems



GBS/GBSL Systems



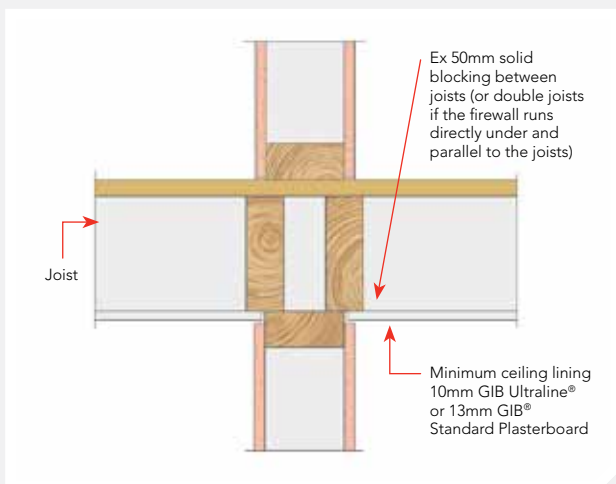
GBT/GBTL Systems



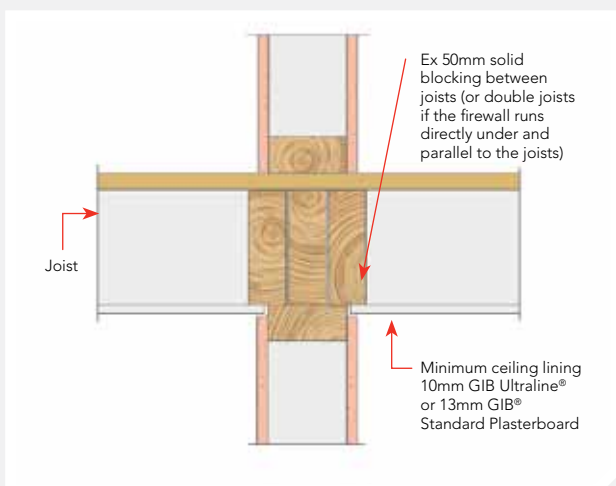


JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

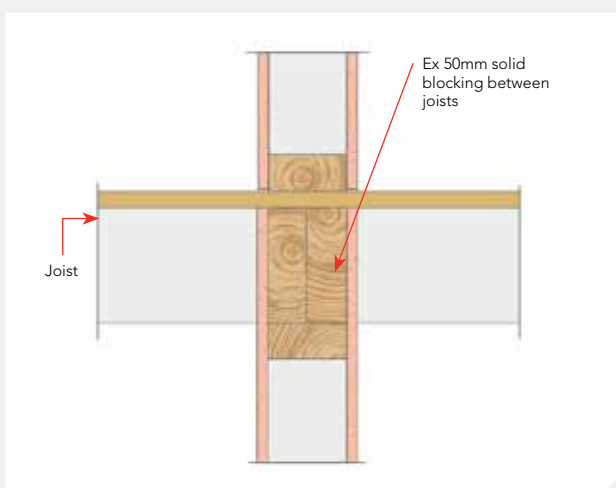
WALL - FLOOR/CEILING JUNCTIONS



Floor/Ceiling junctions where the wall has a FRR of up to 60 minutes. Or greater than 60 minutes if the ceiling has the same FRR as the wall. If the FRR of the wall is less than 60 minutes the ceiling must have the same FRR as the wall.



Floor/Ceiling junctions where the wall has a FRR of 90 or 120 minutes and the FRR of the floor ceiling is less than that of the wall (if the FRR of the ceiling is equal to that of the wall, the top detail applies).



If a ceiling lining is not present, then the void between the wall top plate and the underside of the flooring must be double blocked with solid timber. The fire rated wall linings must be carried up to the underside of the flooring material. Similarly, where the firewall runs directly underneath the joists must be lined in the same manner.

Note: It is the designer's responsibility to consider the collapse mechanism of the building to ensure the stability of the fire rated construction.



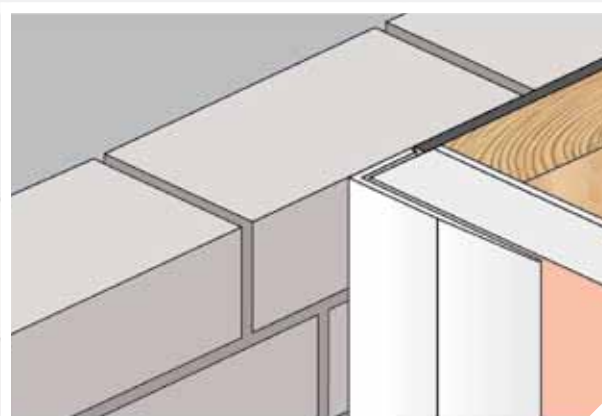
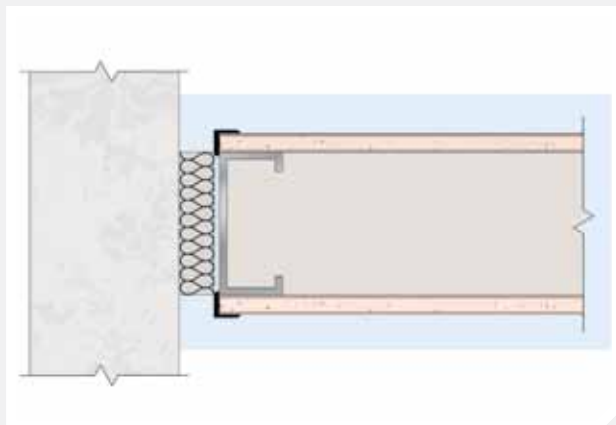
JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

DRYWALL TO MASONRY JUNCTIONS

The details below illustrate rigid joints between GIB® Fire Rated Systems and masonry.

RIGID JOINT:

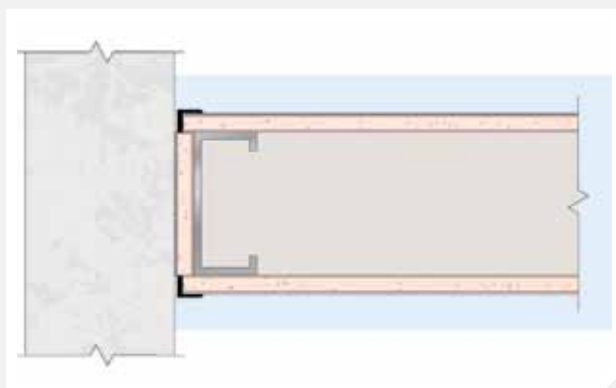
Kaowool packing to full depth of stud. Kaowool may be capped with any sealant (optional). Linings may overlap Kaowool packing (optional).



GIB® Goldline™ L-trims This product is used extensively as a trim for plasterboard that abuts suspended ceilings, beams, plaster, masonry and concrete surfaces as well as non-kerfed door and window jambs.

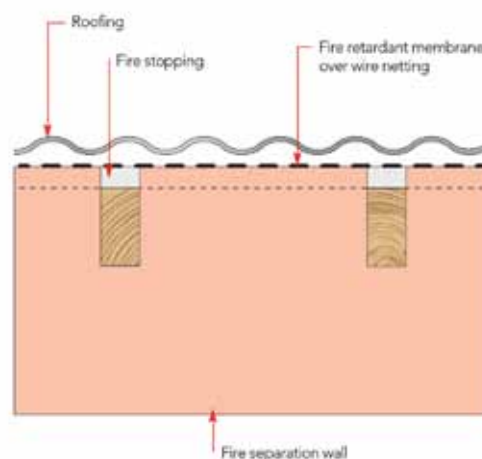
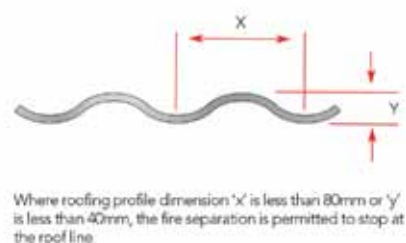
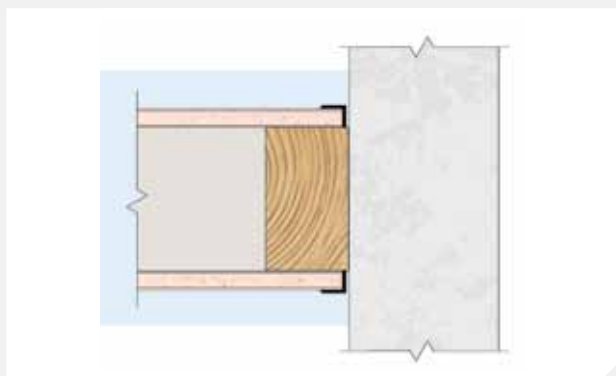
RIGID JOINT:

Continuous GIB® Plasterboard strip as per lining. Lining may be finished with GIB® Goldline™ L-trims.



RIGID JOINT:

Conventional GIB® compound stopping or GIB® Goldline™ L-trims.





JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

DEFLECTION HEAD DETAILS

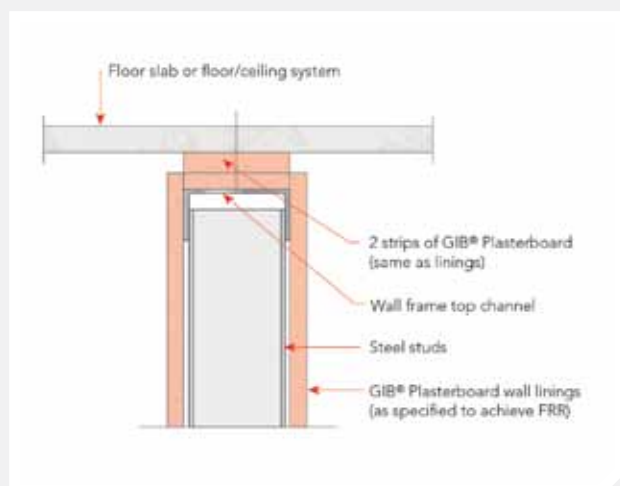
FLOOR-WALL JUNCTIONS

Dead and live loads can cause significant deflection in some long-span floor systems. These deflection head details have been designed to avoid the transfer of floor loads onto non-load bearing steel frame fire separations.

METAL STUD DEFLECTION HEADS



TIMBER STUD DEFLECTION HEADS





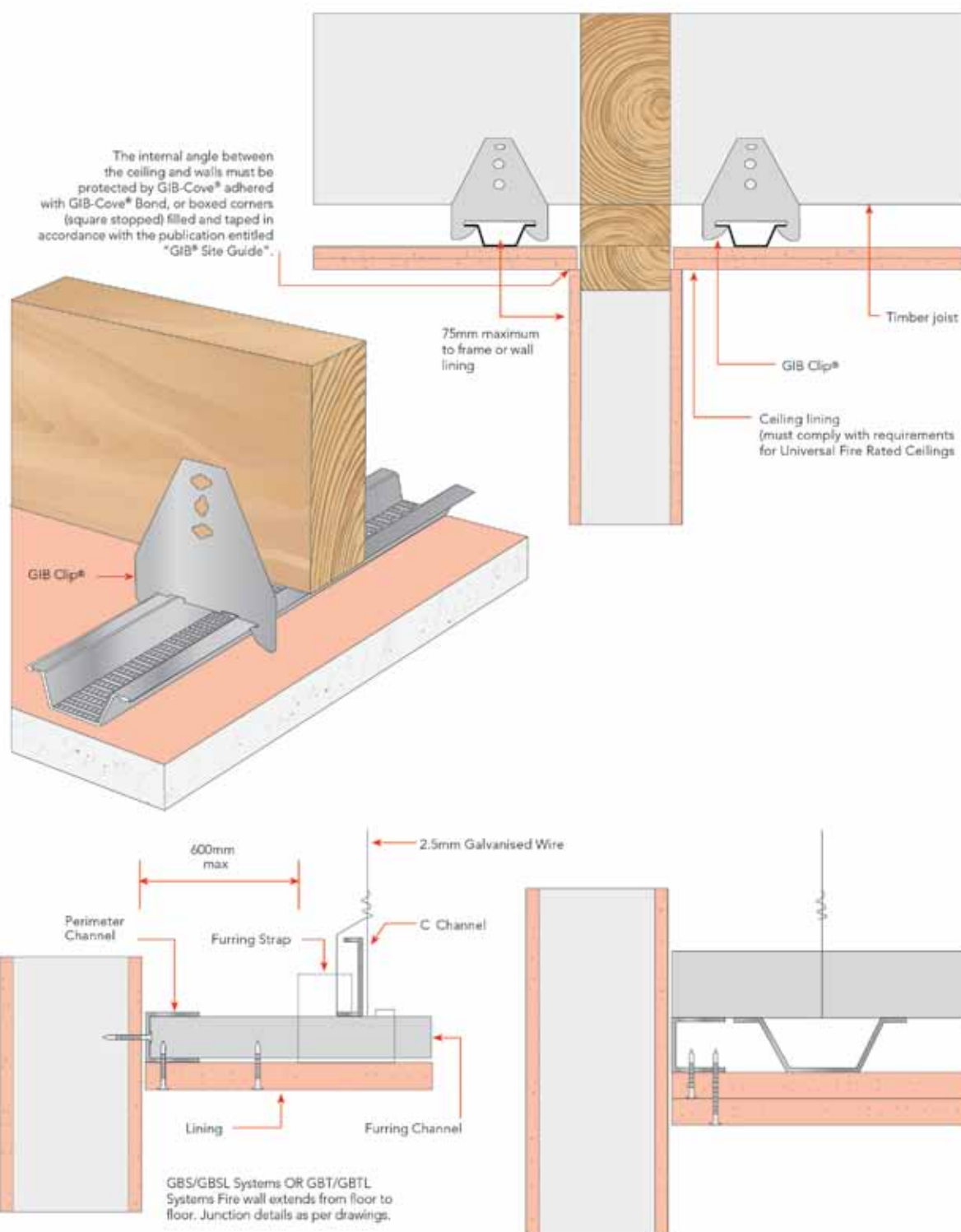
JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

SUSPENDED CEILING TO WALL JUNCTIONS

The junctions below are approved for joining vertical fire separations to fire rated suspended ceiling systems such as suspended grid and the GIB Clip® systems shown below.

GBS/GBSL SYSTEMS OR GBT/GBTL SYSTEMS

Fire wall may extend from floor to floor or may extend only to the ceiling junction as shown. Wall-ceiling junctions without cavity barriers in the concealed space are alternative solutions requiring specific fire engineering justification.





PENETRATIONS IN GIB® FIRE RATED SYSTEMS

INTRODUCTION

Penetrations in fire rated construction can allow spread of fire and smoke from one firecell to another if they are not correctly tested, specified or installed. Penetrations can compromise the FRR and in turn the health and safety of building occupants.

THE NEW ZEALAND BUILDING CODE

Service penetrations through fire rated construction covered by Building Consent must be fire stopped by validated methods in accordance with the requirements of NZBC Clause C and its Supporting Documents for Protection from Fire.

The NZBC requires certain construction elements to provide a FRR. This includes elements such as walls, floor/ceilings, columns, beams, doors and windows. The FRR can arise out of a need to prevent internal fire spread or to prevent fire spread to adjacent property under separate title.

GENERAL NOTES

The following pages give details relating to the installation of penetrations through GIB® Fire Rated Systems.

- The continuity and effectiveness of fire separations must be maintained around penetrations. Where a difference exists between the FRR of the penetration seal or closure and the FRR of the GIB® Fire Rated system, the lower FRR determines the performance of the element
- The penetration details provided in pages 74-78 are generic, have been tested by Winstone Wallboards Ltd, and are covered by BRANZ Appraisal No. 289 [2012]

ONLINE PROPRIETARY PENETRATION SEALS LISTING

Proprietary penetration seals have been listed and continue to be updated on www.gib.co.nz. These proprietary systems have been tested by the penetration seal supplier. Specific details of systems and required installation details must be obtained from the listed supplier. The list does not exclude other proprietary systems where relevant evidence demonstrates suitability for installation in specific GIB® Fire Rated Systems.



**TO VIEW THE GIB® FIRE
SYSTEMS 2012 ONLINE
PROPRIETARY PENETRATIONS
LISTING VISIT www.gib.co.nz
OR SCAN THE QR CODE**



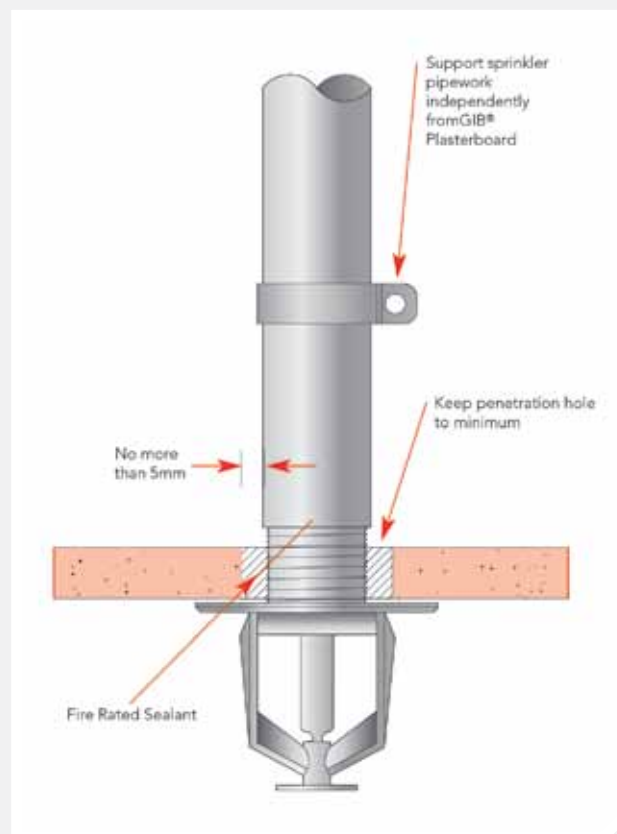
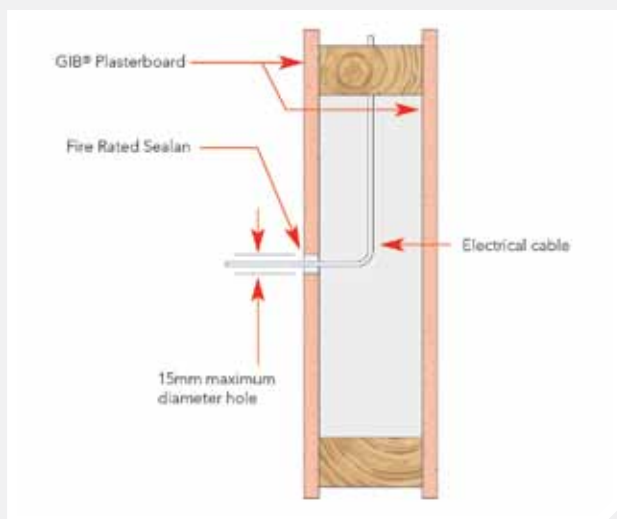
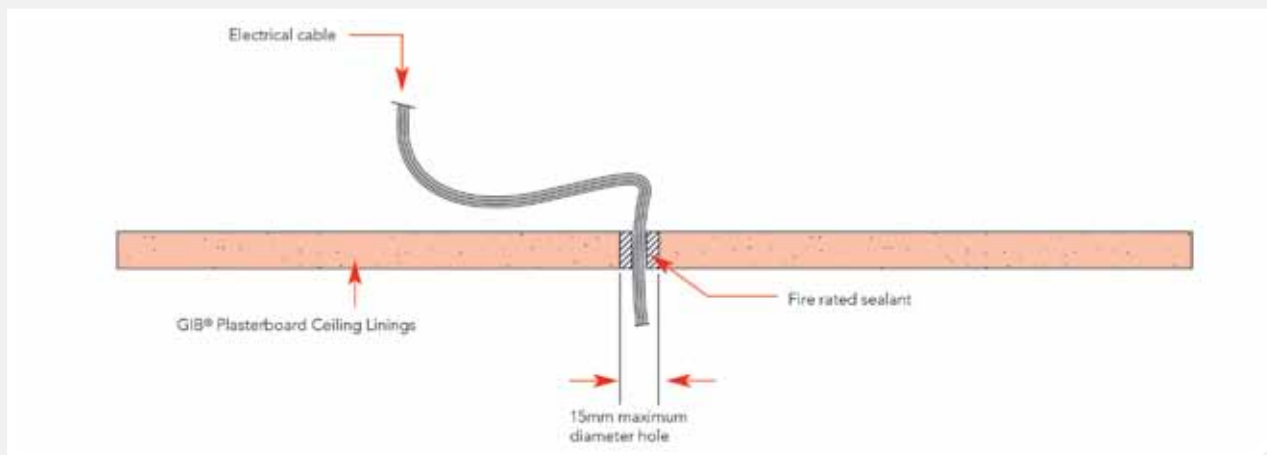
PENETRATIONS IN GIB® FIRE RATED SYSTEMS

The following penetration details show the general principle of forming simple penetrations through one side of a GIB® fire rated system. Many of the details shown rely on plasterboard baffles to retain the system's FRR. The penetration solutions shown are suitable for a FRR up to (120)/120/120 unless otherwise noted.

Sometimes more 'elegant' proprietary penetration seals exist such as metal switch boxes with intumescent pads. For proprietary systems contact the relevant penetration seal supplier.

Through penetrations such as metal or plastic pipes, cable trays, ducts, etc. are not shown here and rely on proprietary products and penetration seals.

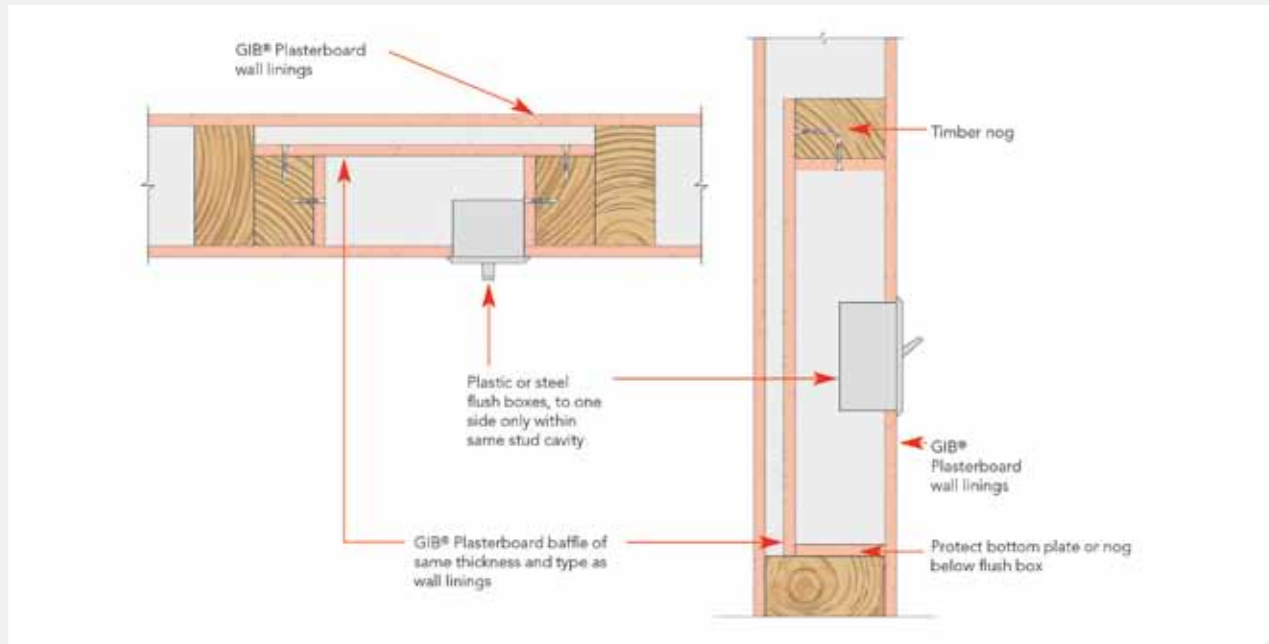
SINGLE CABLE PENETRATION FOR SURFACE MOUNTED ELECTRICAL FIXTURES



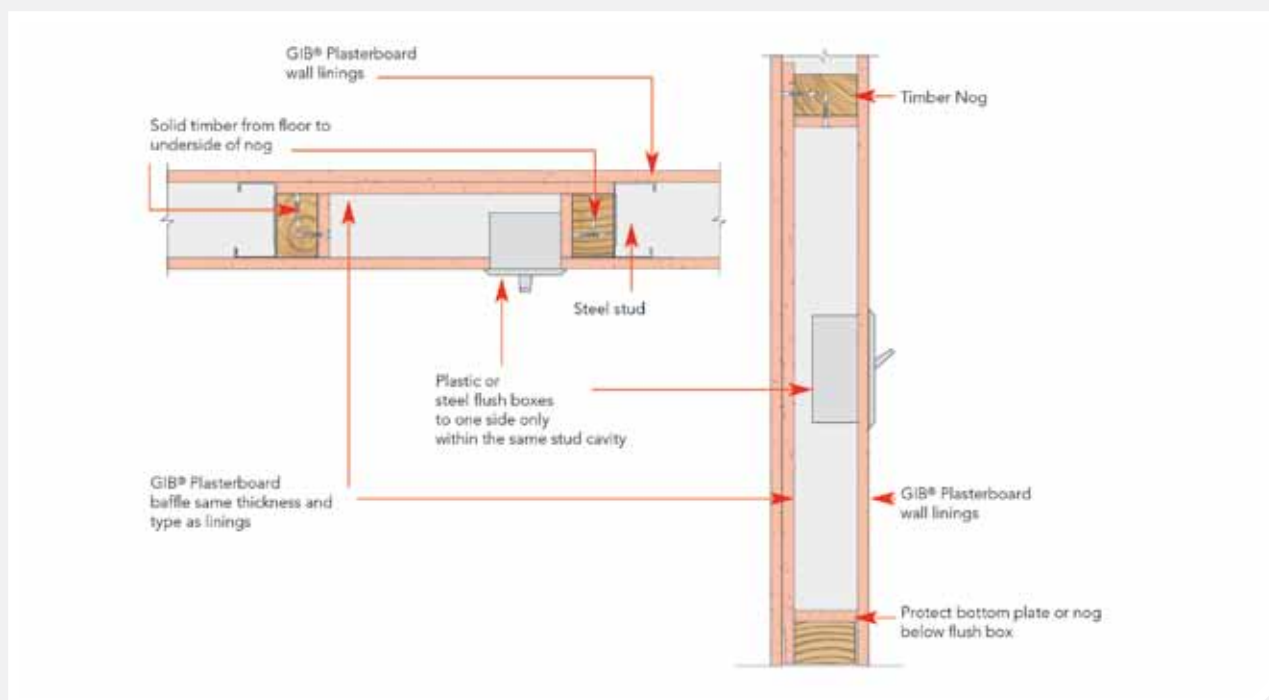


PENETRATIONS IN GIB® FIRE RATED SYSTEMS

FLUSH BOXES IN TIMBER STUD WALLS



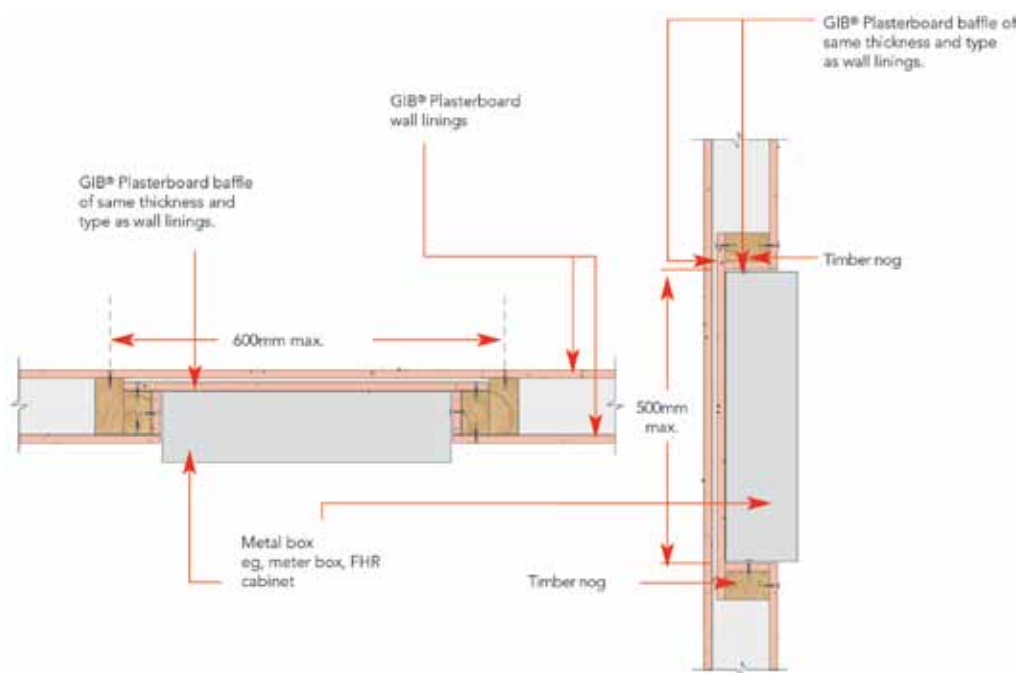
FLUSH BOXES IN METAL STUD WALLS



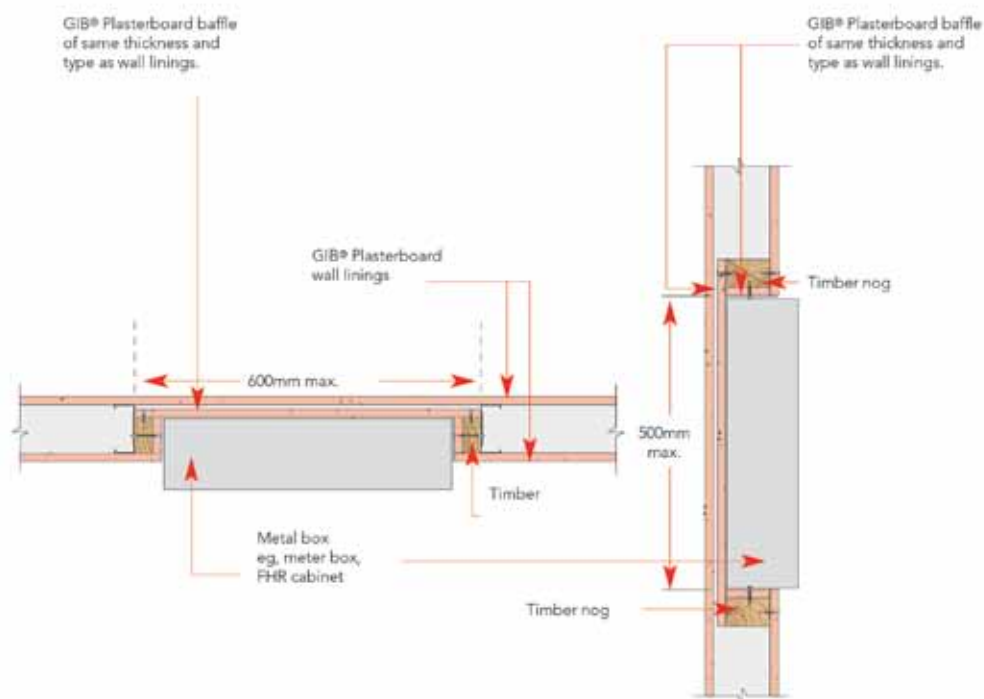


PENETRATIONS IN GIB® FIRE RATED SYSTEMS

LARGER RECESSES IN TIMBER STUD WALLS



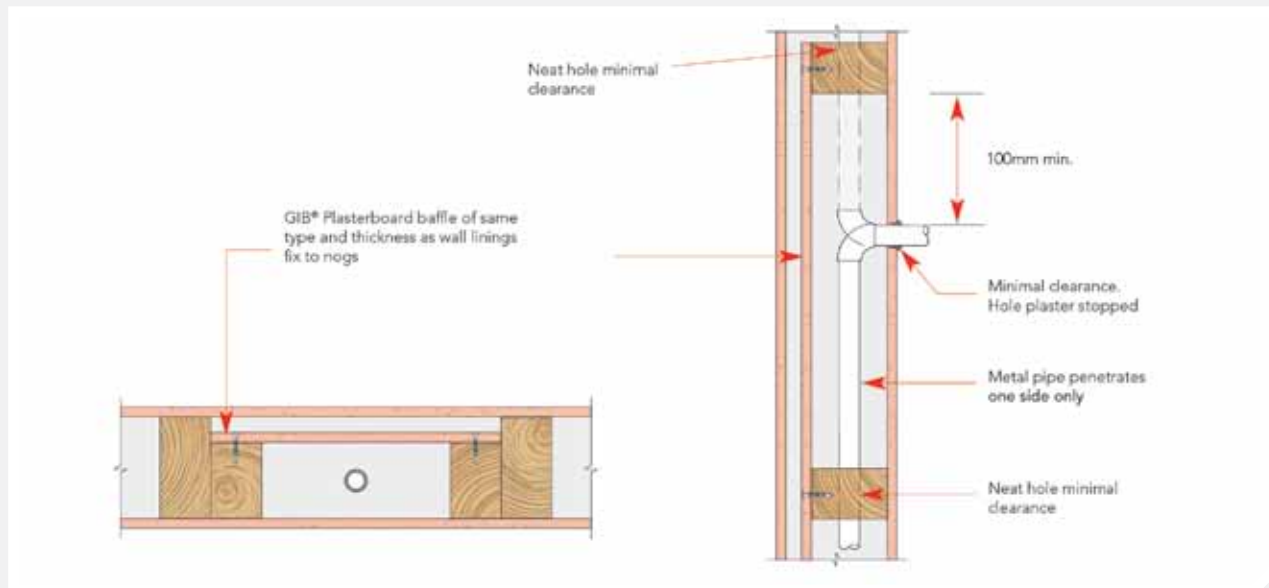
LARGER RECESSES IN METAL STUD WALLS



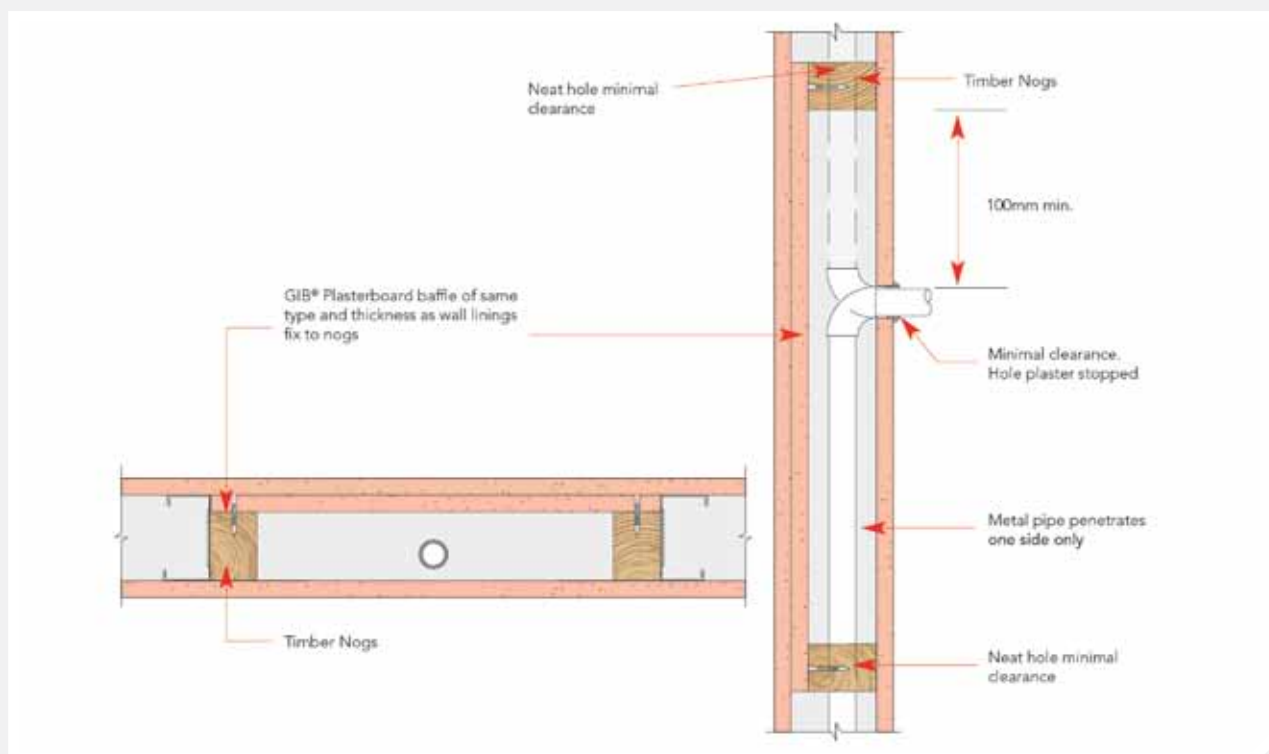


PENETRATIONS IN GIB® FIRE RATED SYSTEMS

METAL PIPE IN TIMBER STUD WALL



METAL PIPE IN METAL STUD WALL





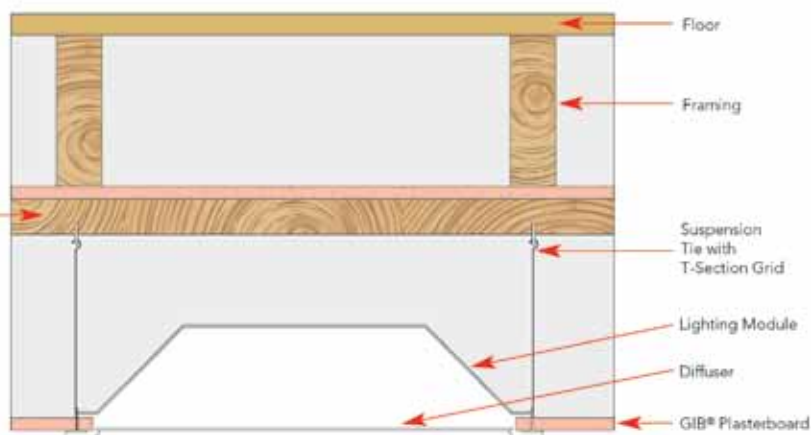
PENETRATIONS IN GIB® FIRE RATED SYSTEMS

SUSPENDED CEILING

GIB® Fire Rated System
Types GBFC,
GBCJ or GBUJ

75mm x 50mm
min batten

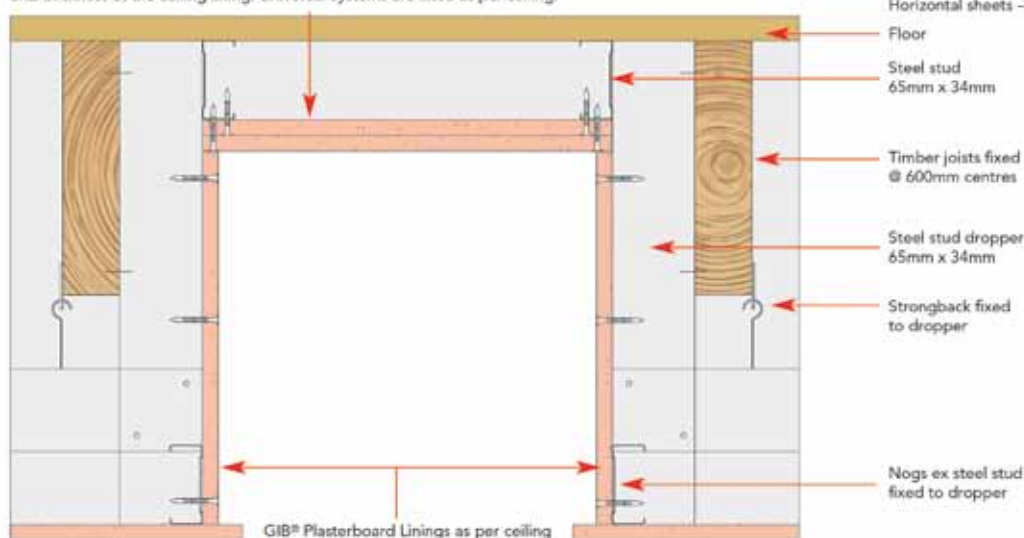
Any suspended ceiling system with ties fixed to battens. Recessed light fittings may be installed conventionally including troffer pack modules (shown), recessed downlights or other light fittings as required.



SPRING OR CLIP FIXED LIGHT FITTING

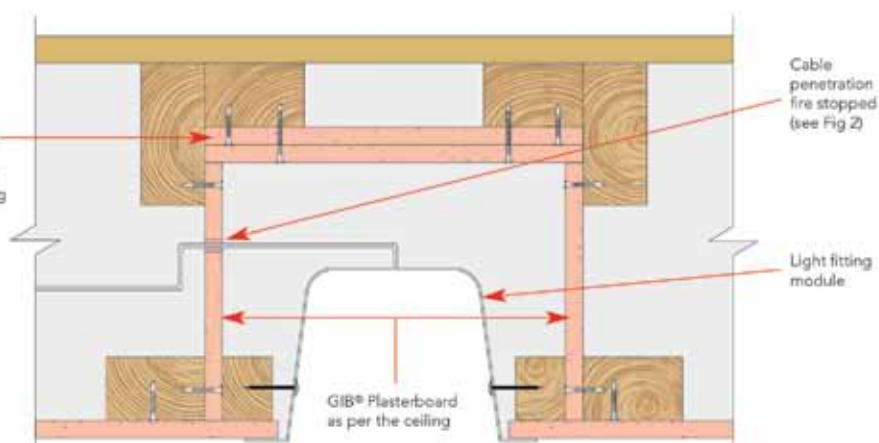
Floor/Ceiling Systems require one extra layer of GIB® Plasterboard of the same type and thickness as the ceiling lining. Universal Systems are lined as per ceiling.

Board Fixing Centres:
Vertical sheets – 300mm centres
Horizontal sheets – 150mm centres



FRAME FIXED LIGHT FITTING

Floor/Ceiling Systems require one extra layer of GIB® Plasterboard of the same type and thickness as the ceiling lining. Universal Systems are lined as per ceiling.



The suitability of these details must be verified with the supplier of the light fitting for each particular installation. Ensure adequate separation distances from surrounding materials.



PROPRIETARY PENETRATION SEALS

Resolve and specify fire rated service penetrations in the design office rather than on-site. Combine services as much as possible in service shafts which can themselves be fire rated, eliminating the need for many different and individual penetrations.

ENSURE FITNESS FOR PURPOSE

Fire test results for penetration seals, such as plastic pipe collars that have been tested in concrete, can not be simply transferred to other types of construction such as framed cavity construction lined with gypsum plasterboard.

Many suppliers of penetration seals in New Zealand rely on overseas or local tests carried out on gypsum plasterboard assemblies with significantly greater fire resistance than what is claimed for the penetration seal.

Check test reports and manufacturer's information carefully. A penetration seal must be suitable for the construction type it is intended to be installed in.

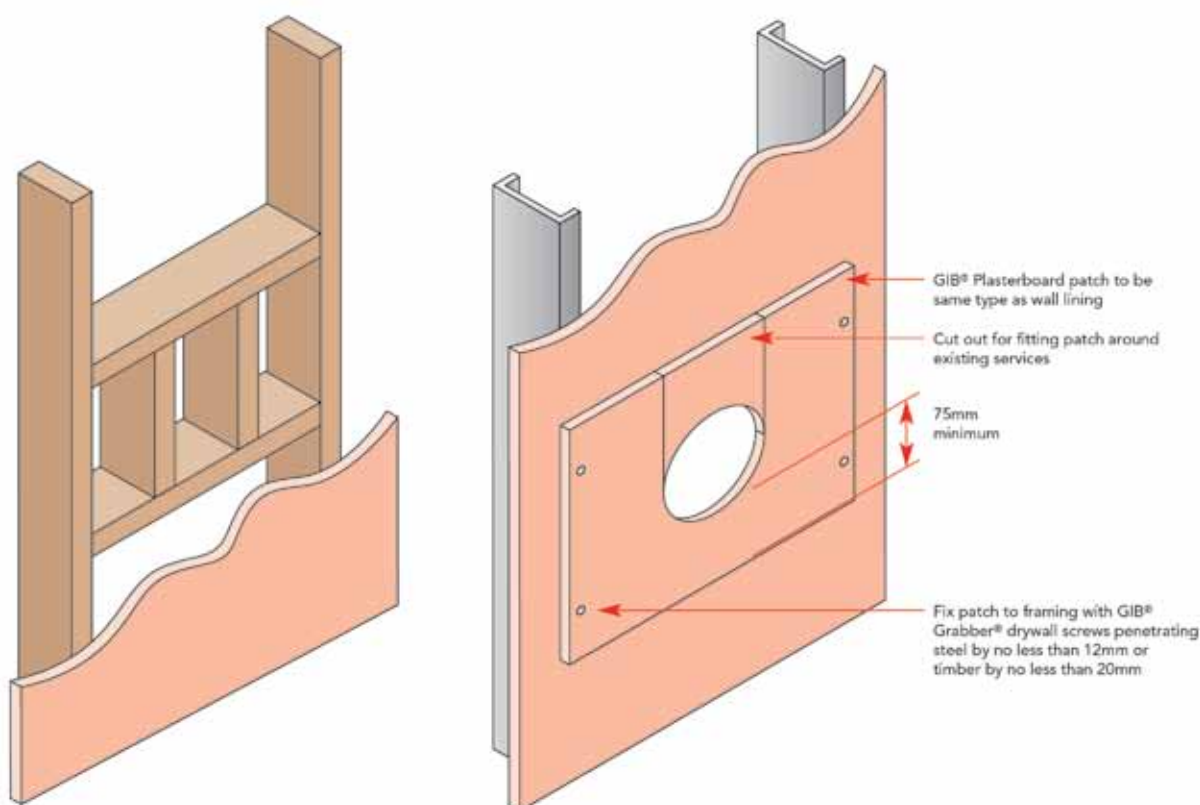
SUPPORT PENETRATION SEALS

To erase doubt, ensure penetration seals are supported by framing around the aperture and not directly by gypsum plasterboard linings. Installation of additional framing members is often required.

Alternatively an additional strip of plasterboard can be installed over the existing lining and supported by adjacent framing members. This option is suitable for penetration seals such as cable bundles, metal pipes and PVC pipe collars.

Penetration patches are not required when penetration seals are installed in one-way universal (UW) systems.

Heavy penetrating items such as cable trays and ducts must have separate supports, such as hangers to the floor above.





STABILITY OF FIRE RATED ELEMENTS

STRUCTURAL STABILITY DURING FIRE

In order to satisfy the requirements of NZBC Clause C4 – Structural Stability during Fire, designers must ensure that fire rated elements are supported by elements having at least the same FRR. Collapse of elements having a lesser FRR shall not cause the consequential collapse of elements required to have a higher FRR.

The stability of an element having a FRR can depend on other elements, such as a column supporting a floor or a section of wall providing lateral support to a firecell boundary wall. Although the supporting element itself may not provide firecell separation, it still needs a FRR no less than the element for which it is providing stability.

A FRR represents a result against a standard furnace test where a wall or floor/ceiling is exposed from one side. A construction element providing stability and located entirely within a firecell will potentially be exposed to fire from more than one side simultaneously. In this case 'universal' or 'one way' lining protection needs to be provided to all relevant sides. If the element provides lateral support or bracing and is located within a firecell, then the bracing must be protected with a 'universal' or 'one way' lining system.

BOUNDARY WALLS, PROPERTY RATINGS AND STABILITY

When a building is located sufficiently close to a property boundary, a fire rating (FRR) is often required to minimise the risk of fire spreading externally to the neighbour's property. NZBC Clause B1 – Verification Method B1/VM1 also provides guidelines for checking the strength and structural stability of boundary elements in the case of a fire. The simplest and most commonly applied criterion for boundary walls is the ability to resist a post-fire force in accordance with Clause 2.2.4 (iii), equal to 'a uniformly distributed face load of 0.5 kPa in any direction'.

The building designer must ensure that structural stability is maintained for the specified time of fire resistance, taking into account all effects of fire and the provisions of NZBC Clause B1. The solution will often require project specific considerations and could involve fire rated return walls, a fire rated ceiling or cantilever detail similar to the one described opposite for simple single storey light timber framed structures. For more complex structures, such as multi-storey buildings or portal frame industrial structures, specific design is required.

SINGLE STOREY LIGHT TIMBER FRAMED BOUNDARY FIRE WALL

The following details have been developed for simple single storey light timber framed structures such as residential garages or other single storey structures designed within the scope of the latest version of NZS3604.

The detail relies on the bottom plate fixing detail and cantilever action of the wall to resist an imposed 0.5 kPa face load in any direction.

Timber framing grade, construction details for the framing and concrete slab, and timber treatment are in accordance with the latest versions of NZS3604 and NZS3602.

The required FRR is determined in accordance with NZBC Clause C/VM2 or C/AS1-7 and the appropriate GIB® specification is selected. Check to see if a one-way protection is permitted.

Install the relevant FRR system in accordance with the appropriate GIB® specification from this literature.

If a two way FRR is required, note that sheet joints and fastener heads in the GIB® plasterboard under the external cladding do not require stopping.

Cladding systems must be separated from GIB® plasterboard by means of a flexible underlay and drained cavity system compliant with NZBC Clause E2/AS1. Sequence installation so that the GIB® plasterboard is kept dry during installation.

This detail which includes a NZBC E2/AS1 compliant cladding system, drained cavity and flexible underlay over GIB® plasterboard, has a serviceable life in excess of 15 years and satisfies the requirements of NZBC Clause B2 - Durability for an external wall cladding.

The cladding system must be maintained so that the GIB® plasterboard remains dry in-service.

Use claddings with exterior surface finish properties that fall within the limits set by NZBC Clause C/VM2 or C/AS1-7.

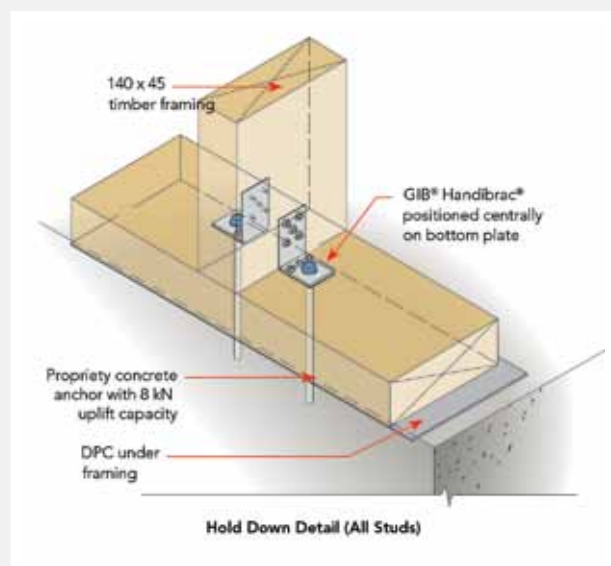
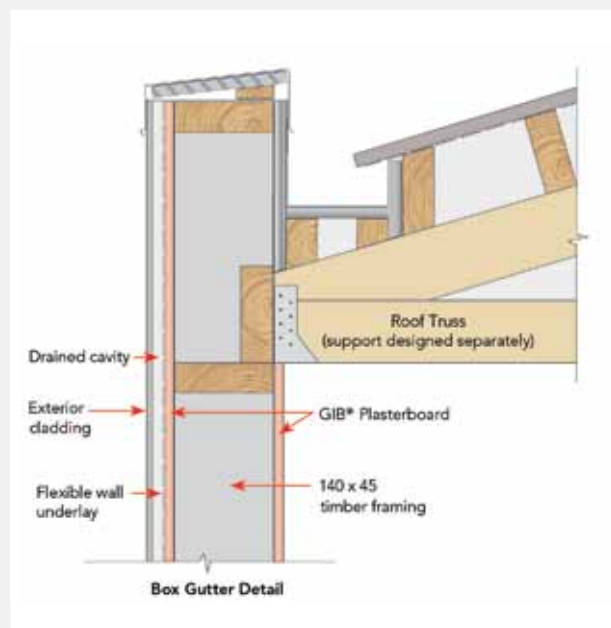
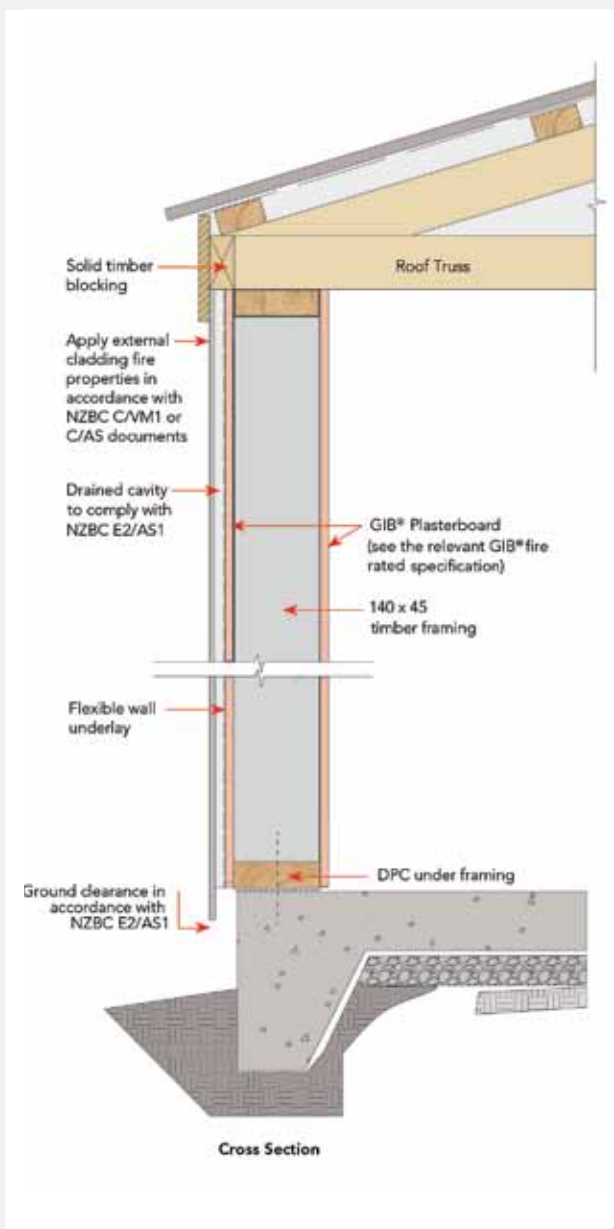
Walls with a stud height of 2.4 metres require a minimum stud size of nominally 140 x 45 mm spaced at 600 mm centres.

Walls with a stud height of 3.0 metres require a minimum stud size of nominally 140 x 45 mm spaced at 400 mm centres.

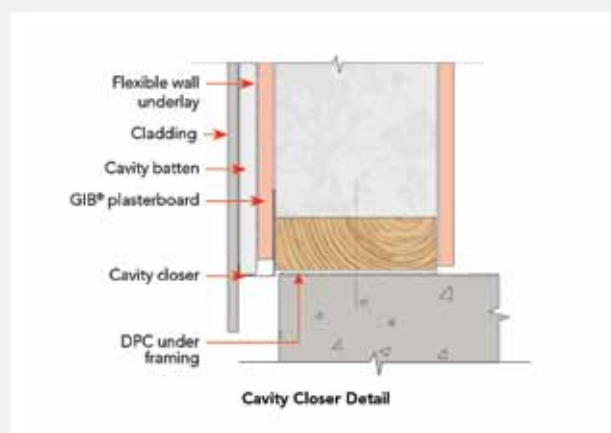
With the GIB HandiBrac® use a proprietary concrete anchor with a minimum characteristic uplift capacity of 8 kN as verified by the supplier.



STABILITY OF FIRE RATED ELEMENTS



These drawings are schematic and full construction and cladding details must comply with NZS 3604 and NZBC E2/AS1 and incorporate a drained cavity for all cladding types



[illegible]



GIB® FIRE RATED SYSTEMS, OCTOBER 2012

Winstone Wallboards Ltd accepts no liability if the GIB® Fire Rated system is not designed and installed in strict accordance with instructions contained in this publication.

Use only the current specification

This publication may be superseded by a new publication. Winstone Wallboards accepts no liability for reliance upon publications that have been superseded. You should check the current index of publications contained in your GIB® Technical Manual before using this publication. If you are unsure whether this is the current publication, simply call the GIB® Helpline on 0800 100 442.

Substitution

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

Trademarks

The names GIB®, GIB Fyreline®, GIB Ultraline®, GIB Braceline®, GIB Toughline®, GIB Noiseline®, GIB Aqualine®, GIB Nail®, GIB Tradeset®, GIB Plus 4®, GIB-Cove®, GIB Lite Blue®, GIB Fix®, the colour mauve for GIB Toughline®, the colour blue for GIB Braceline®, 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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FREE FACSIMILE

0800 229 222

E-MAIL

info@gib.co.nz

INTERNET WEBSITE

<http://www.gib.co.nz>

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NURAFLUX/PREMSEAL PRIMER – TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

Nuraflux Primer is a bitumen based adhesive solvent solution which is specifically formulated to provide excellent adhesion for Nuralite Waterproofing Membranes under many kinds of surface conditions. Nuraflux Primer is an integral part of the Nuralite Waterproofing System and sufficient primer must be used on dry surfaces to condition them to be dust free so that the substrate is suitable for the application of Nuralite Waterproofing Membranes.

Used to prime all structural concrete, masonry, or wood surfaces on which waterproofing membranes will be used.

Designed to be used on applications down to –4 °C.

May be used on horizontal surfaces, but remains tacky, and precautions must be used in this application to prevent contamination of the Primer surface prior to installation of the membrane.

May be used on all concrete block and brick wall conditions.

APPLICATION

Nuraflux Primer may be applied with roller, brush or spray. A roller with a heavy nap should be used to carry sufficient material to the area being primed.

Apply all Nuraflux Primer to a clean, dry, dust free and frost free surface at a coverage of approximately 5 sqm/litre. The primer should be spread sufficiently to avoid areas of excess material. Areas of excess material will lengthen the drying time on the application of the primer.

Nuraflux Primer will dry in a minimum of one hour - may dry quicker due to drying conditions, such as wind and warmth.

This product is black in colour and will remain tacky when dry.

The application of primer should be limited to what can be covered with Waterproofing Membrane in one working day. Any areas not covered with membrane during the day must be reprimed - be sure to cover all open containers when not applying primer, as the primer is volatile.

SAFETY, STORAGE & HANDLING INFORMATION

Nuraflux Primer vapours are flammable. User should review Material Safety Data Sheet (MSDS) for this product and follow safety instructions listed therein.

TRANSPORT CLASSIFICATION

IMDG Class 3.1
UN No. 1294

1

The information in this product data sheet is based on our experience and testing. It represents the latest information available at the time of printing, but no guarantee of its accuracy is made or implied, nor responsibility taken for use to which this information may be put. We reserve the right to alter or up-date information parameters and formulations at any time without notice.

NURASEAL - TECHNICAL DATA SHEET

DESCRIPTION AND AREAS OF USE

ADHESIVE WATERPOOF MEMBRANE SHEETING

NURASEAL is a self-adhesive sheet membrane constructed from an oriented cross laminated high density polyethylene sheeting and a bitumen-polymer adhesive compound. The product is a tough, durable, self-adhesive sheet with an overall thickness of 1.5 mm.

DIMENSIONS

Backing Thickness	mm	0.10
Backing Type		HDPE
Adhesive Thickness	mm	1.40
Total Thickness	mm	1.50
Width	mm	1050
Length	m	19.05
Weight	kg/m ²	1.7
Carton Size	mm	260 x 260 x 1100
Carton Weight	kg	35

MECHANICAL PROPERTIES

Membrane Strength	ASTM D1000 N/mm	5.0
Elongation	ASTM D1000 %	300
Puncture Resistance	ASTM E154 N	230
Adhesion (180° Peel)	ASTM D1000 N/mm	4.0

FUNCTIONAL DATA

Water Vapour Transmission	ASTM E96 g/m ² /24h	0.30
Water Penetration % Joint	MOAT 27 5.1.4	Nil
Dimensional Stability	MOAT 27 5.1.6 % (80°C)	
Longitudinal		-0.1
Lateral		-0.2

The information in this product data sheet is based on our experience and testing. It represents the latest information available at the time of printing, but no guarantee of its accuracy is made or implied, nor responsibility taken for use to which this information may be put. We reserve the right to alter or up-date information parameters and formulations at any time without notice.



Rippon Vineyard, Wanaka

NURALITE TANKING Systems Brochure

Product Description

Horizontal and vertical tanking must prevent the ingress of water and water borne aggressive salts such as chlorides and sulphates penetrating concrete structures.

Any failure or deficiency of inaccessible below ground waterproofing of a structure, can be very difficult and expensive to correct. For that reason Nuralite offers the choice of two proven systems to meet the demanding needs of specifiers.

Nuraply 3PT (M)

(formerly called Nuraunderlay)

Nuraply 3PT is a thick and tough, reinforced bituminous waterproofing membrane, of great strength and durability. The membrane is 3mm thick of APP bitumen with a heavy reinforcing layer of non-woven polyester inside. The 10m x 1m rolls of Nuraply 3PT are laid by heat welding the underside of the membrane to a Nuraflux primed surface.

Nuraply 3PTM has mineral chip aggregated rolled into its surface. This makes it ideally suited for waterproofing underslabs – the chips key into the poured concrete slab.

Combining Nuraply 3PT on the walls with Nuraply 3PTM under the slab ensures the entire building is encapsulated with a tough positive waterproofing system.



Cross-section of a fully encapsulated basement

Nuraseal

(formerly called Premseal 100)

Nuraseal is a totally impervious flexible self-adhesive waterproofing sheet membrane. The self-adhesive bottom surface is laminated with siliconized release foil or paper and the top surface of the membrane is covered with a special, durable high strength coloured polyethylene film.

The elastomeric nature of the synthetically modified coating is designed as a homogeneous mixture of a special bitumen and high quality type SBS elastomer, which ensures totally durable waterproofing.

Nuraseal is suitable for walls not exposed to hydrostatic pressure.

NURALITE
THE FLAT ROOF EXPERTS



When to use Nuralite Tanking systems

Both systems have been developed for positive long-term, low maintenance waterproofing of construction features such as:

- Foundations
- Basements
- Lift Shafts, Pits
- Underslab

Nuraply 3PT (M) provides a robust watertight solution for areas where water is likely. The system can tolerate some hydrostatic pressure but specific design is required for areas of high hydrostatic pressure such as large building sites by the sea.

Nuraseal is suitable for damp proofing walls or areas not exposed to hydrostatic pressure.

BRANZ does not recommend the mixing of materials in tanking situations.⁽¹⁾ To comply, in situations where water is likely Nuraply 3PT should be used to encapsulate the external walls and floor completely.

(1) BRANZ Bulletin 397 pg 5

Warranty

Nuralite warrants both systems against materials defects for 20 years from the date of installation. The warranty must be applied for at the completion of the job.

The product installation is covered by a separate workmanship warranty issued by the applicator.

Things to consider

Ensure surfaces are clean, with no lumps, hollows and holes and are as dry as possible. Flush pointed blockwork is essential and corner fillets formed at wall/footing junctions as one.

Care must be taken once the membrane is installed to ensure it is not damaged prior to backfilling. Carefully supervise placement of protection boards and backfilling, to ensure no damage occurs to the membrane in that work.

If wall insulation is a consideration, install an XPS insulation product such as Composite Goldfoam adjacent to the waterproofing membrane. This will provide insulation and membrane protection. A drainage element will still be required though to encourage waterflow to the drain system at the foot of the wall.

Prevent water build up against the wall with a drainage board such as FormFlow recycled polystyrene. At least 100 mm diameter subsoil drainage pipe should be placed 150mm from the base of the membrane. Have the subsoil pipe at the base of the wall set down a minimum of 200 mm below floor level and with the pipe sloped a minimum of 1:200 to the outlet.

Simple design features assist the performance of the system.

- ▶ Slope the surrounding area away from the wall with a minimum 1:30 slope
- ▶ Seal the surface adjacent to the wall with a clay cap or concrete mowing strip
- ▶ Provide channels or drains to lead water away from the building
- ▶ Install subsoil drainage where the surrounding ground is very wet



A – Nuraflux primer applied to substrate



B – Gussets installed in high stress areas



C – Roller used to ensure good seal

When you should not use Nuralite Tanking systems

Not with deep multi-storey basements or subject to high hydrostatic pressure. Specialist design and installation is required in these situations.

Not where tree roots are prevalent – specify the Nuraply 3PG membrane instead of Nuraply 3PT to ensure the roots will not attack the membrane.

Not in situations where the tanking may be damaged mechanically.

Not where there is insufficient room for an applicator to work on the substrate in a safe manner.

General Application Method – 3PTM

1. The surface must be compacted and free of protrusions.
2. Roll out the Nuraply 3PTM with the chip side facing up.
3. Weld the lap joints in the traditional way, ensure a large bitumen bleed is evident along the joint.
4. Ensure there is sufficient material at the sides to fold up the footing.
5. Pour the slab directly onto the membrane.

General Application Method – 3PT

1. The surface to be waterproofed should be dry, smooth, free from dust, dirt, protrusions and cavities.
2. The surface should be primed thoroughly with Nuraflux Primer and allow to dry. The drying time depends on the porosity of the substrate and the environmental conditions (approx. 0.5 - 3 hrs).
3. Nuraply 3PT is adhered to the substrate by heat fusing the base of the sheet as it is rolled up the substrate.

4. All lap joints are welded as a separate process. As this step is vital, a three pass method is used so that the quality of the weld is checked during the process.
5. Top edges overflashed or secured to ensure there are no loose or uncovered edges above or below ground level.

General Application Method – Nuraseal

1. The surface to be waterproofed should be dry, smooth, free from dust, dirt, protrusions and cavities.
2. The surface should be primed thoroughly with Nuraflux Primer and allow to dry. The drying time depends on the porosity of the substrate and the environmental conditions (approx. 0.5 - 3 hrs.) **(Photo A)**
3. Apply gussets to high stress areas such as internal and external corners **(Photo B)**
4. Install Nuraseal by removing the release foil and unrolling the membrane along with it. The membrane especially at the overlaps should be firmly pressed down from the center to the sides, to ensure a good seal and to remove entrapped air. **(Photo C)**
5. Top edges overflashed or secured to ensure there are no loose or uncovered edges above or below ground level.

Applicators

All Nuralite authorized applicators have been trained in Nuralite's systems followed by on-site monitoring. Most Nuralite applicators have been working with Nuralite systems for many years.

We work closely with applicators to ensure quality standards are maintained. If clients require an independent quality check during the course of a job or at completion, please contact a Nuralite technical advisor and a site report will be provided.

Technical Information

A comprehensive set of design details and specifications are available at www.nuralite.co.nz

Nuralite technical advisors are all very experienced and willing to help either on the phone, in your office or on site.
Call **09 579 2046** or **0800 Nuralite (0800 687254)**.

Description – Nuraseal

Waterproofing membrane consisting of polyethylene film bonded to a layer of bitumen/polymer adhesive.

Finishing

- ▶ Polyethylene anti corrosive film.
- ▶ Siliconized removable foil / paper.

Technical specifications (average values)

- ▶ Tensile strength (U.E.A.t.c.)
L: 450 N T: 300 N
- ▶ Elongation at break (U.E.A.t.c.)
L: 30% D: 45%

Dimensions

- ▶ Thickness: 1.5 mm
- ▶ Length: 19.05 m
- ▶ Width: 1.05 m
- ▶ Surface: 20 m²
- ▶ Average weight: 34 kg

Description – Nuraply 3PT

Waterproofing membrane consisting of straight run bitumen heavily modified with polymers (APP = Atactic Polypropylene) and reinforced with non-woven polyester.

Finishing

- ▶ Top surfaced with white calibrated sand.
- ▶ Underside finished with a smooth thermofusible film.

Composition

- ▶ Reinforcement: non-woven polyester 180 g/m²
- ▶ Coating mass: plastomer bitumen, consisting of ±70% bitumen and ±30% atactic polypropylene (APP).

Technical specifications (average values)

- ▶ Tensile strength (U.E.A.t.c.)
L: 600 N T: 550 N
- ▶ Elongation at break (U.E.A.t.c.)
L: 40% D: 40%

Dimensions

- ▶ Thickness: 3 mm
- ▶ Length: 10 m
- ▶ Width: 1 m
- ▶ Surface: 10 m²
- ▶ Average weight: 41 kg

Description – 3PTM

Waterproofing membrane consisting of straight run bitumen heavily modified with polymers (APP = Atactic Polypropylene) and reinforced with non-woven polyester.

Finishing

- ▶ Top surface finished with dense mechanically rolled aggregate chip.
- ▶ Underside finished with a smooth thermofusible film.

Composition

- ▶ Reinforcement: non-woven polyester 180 g/m²
- ▶ Coating mass: plastomer bitumen, consisting of ±70% bitumen and ±30% atactic polypropylene (APP).

Technical specifications (average values)

- ▶ Tensile strength (U.E.A.t.c.)
L: 650 N T: 500 N
- ▶ Elongation at break (U.E.A.t.c.)
L: 45% D: 45%

Dimensions

- ▶ Thickness: 3 mm
- ▶ Length: 10 m
- ▶ Width: 1 m
- ▶ Surface: 10 m²
- ▶ Average weight: 36 kg

Nuraply 3PT, Nuraply 3PTM and Nuraseal are non-hazardous products. Nuraflux, primer is a Class III Dangerous Goods and is flammable. Care is required in use.

To the best of our knowledge, the information in this brochure is accurate at the time of printing. Nuralite Waterproofing Ltd reserves the right to alter information, formulation or parameters at any time without notice.

Nuralite Waterproofing Ltd

53A Victoria Street, Onehunga, Auckland 1061

Ph 09 579 2046 Fx 09 579 5136

E info@nuralite.co.nz



Designed for discreet wall hung toilet installations. Featuring a depth of only 146mm the SANIPACK fits easily inside a wall cavity.

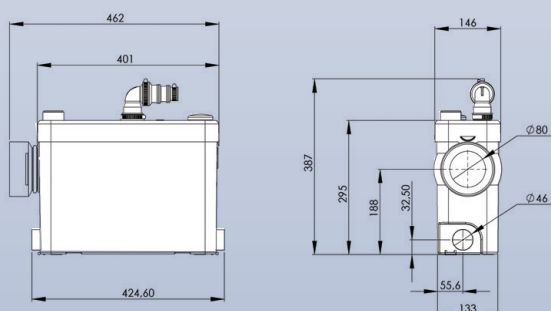
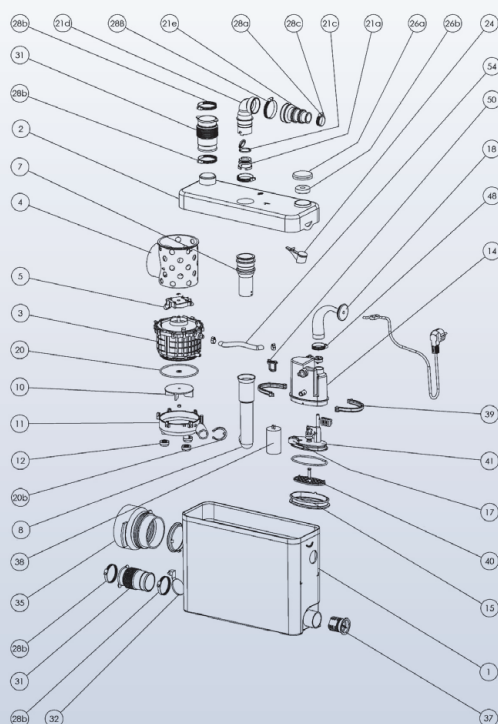
PUMPING DISTANCE UP TO 5M



2 YEAR WARRANTY



PUMPING DISTANCE UP TO 100M



POSSIBLE CONNECTIONS

Wall hung WC, vanity basin, shower;

VERTICAL PUMPING HEIGHT

Up to 5m

HORIZONTAL PUMPING DISTANCE

Up to 100m (refer to pumping graph below)

RECOMMENDED DISCHARGE PIPE DIAMETER

20mm uPVC Pressure Pipe

NORMAL OPERATING TEMPERATURE

35°C

ELECTRICAL POWER SUPPLY

220-240V / 50Hz

MOTOR POWER RATING

400W

OVERALL MEASUREMENTS (W x H x D)

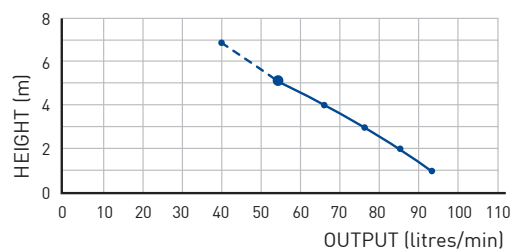
401 x 295 x 146mm

ACCESSORIES

- Factory pre mounted non return valve (supplied)
- Can be equipped with SaniAlarm (sold separately) (Isolation valve not supplied)

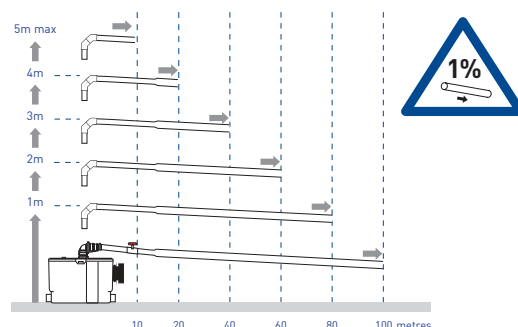
All horizontal pipework requires a minimum of 1:100 fall

FLOW RATE PERFORMANCE



PUMPING DISTANCE PERFORMANCE

Increase size of horizontal run by one pipe size after 5m





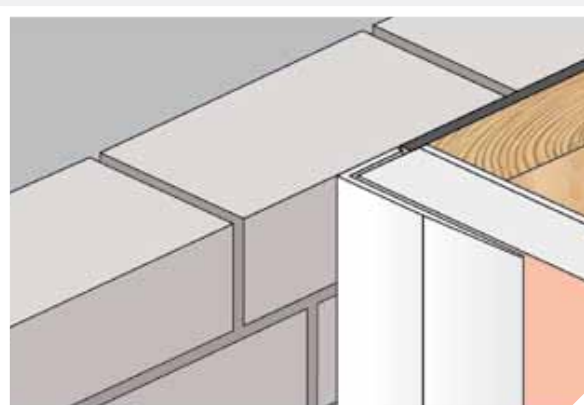
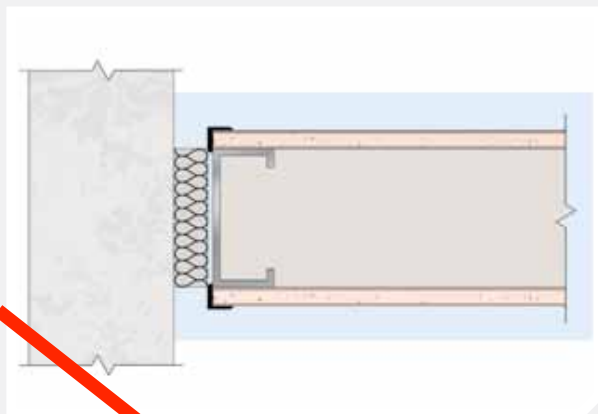
JUNCTION DETAILS FOR FIRE AND SMOKE SEPARATIONS

DRYWALL TO MASONRY JUNCTIONS

The details below illustrate rigid joints between GIB® Fire Rated Systems and masonry.

RIGID JOINT:

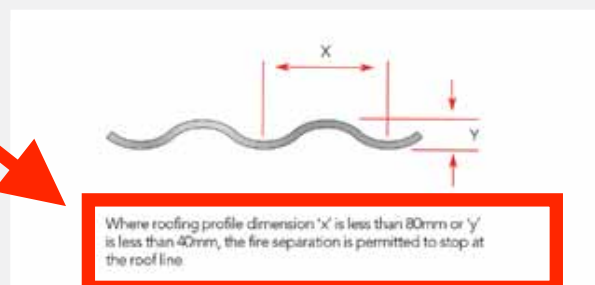
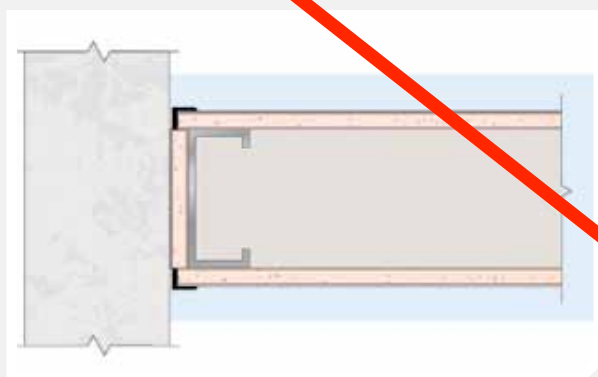
Kaowool packing to full depth of stud. Kaowool may be capped with any sealant (optional). Linings may overlap Kaowool packing (optional).



GIB® Goldline™ L-trims This product is used extensively as a trim for plasterboard that abuts suspended ceilings, beams, plaster, masonry and concrete surfaces as well as non-kerfed door and window jambs.

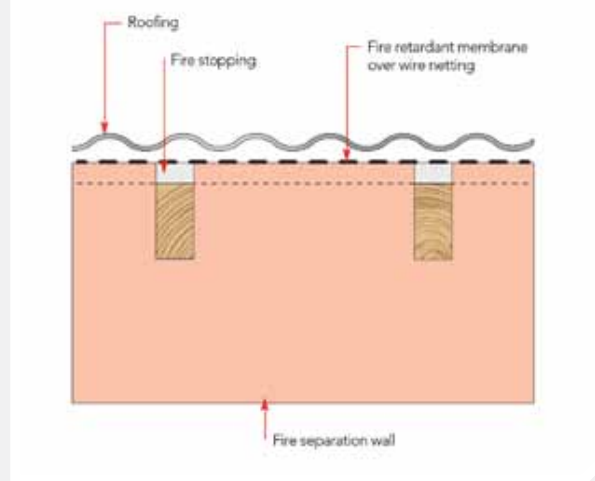
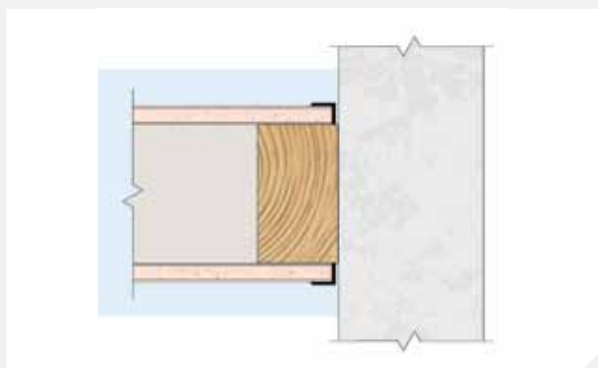
RIGID JOINT:

Continuous GIB® Plasterboard strip as per lining. Lining may be finished with GIB® Goldline™ L-trims.



RIGID JOINT:

Conventional GIB® compound stopping or GIB® Goldline™ L-trims.



PRODUCT GUIDE

ROOFING SOLUTIONS

ROOFING, CLADDING AND RAINWATER SYSTEMS





ABOUT STEEL & TUBE

Steel & Tube is the leading supplier of steel products and services in New Zealand. Proudly supporting local businesses for over 60 years, we are New Zealand owned and among the New Zealand Stock Exchange's top 50 companies.

Our network of service and distribution centres provides specialist knowledge and solutions to service all sectors of the economy. From infrastructure development to commercial and residential construction, the rural sector, manufacturing and engineering, whatever your project, we have the steel solution to meet your needs.

The wide range of products includes: a variety of steel merchandise, specialist stainless steel products, piping systems, reinforcing and fasteners, along with roofing, cladding and rainwater systems. Our processing services such as plate cutting, profiling, coil slitting and sheeting, mean that we can customise to your project requirements.

ROOFING SERVICES

Steel & Tube manufacture and market long run roofing materials, rainwater goods and accessories, with manufacturing sites around the country.

Our high-strength galvanised cold-formed steel purlins also provide a complete system suitable for supporting a wide range of roofing and cladding materials.

We offer a comprehensive range of services to accompany and support our product portfolio, these include product specialists and technical experts who are trained to assist with technical inquiries, design specifications and product selection, and are available to all our customers through our local branch network.

QUALITY

All our services adhere to the strictest quality controls and our facilities are Telarc ISO 9001 certified and our practices comply with international and local manufacturing standards.

CHOOSING THE RIGHT PRODUCT

New Zealand has a wide range of environmental conditions, from harsh West Coast beaches to moderate inland locations to industrial and geothermal sites like no other on earth.

Prior to selecting a product from this guide discuss your particular site requirements with a Steel & Tube representative to ensure the profile and finish will perform to your requirements.

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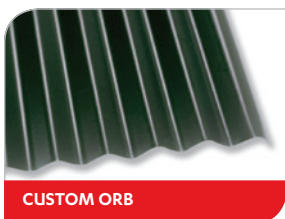
SUPPLIER DETAILS

ROOFING



CORRUGATED

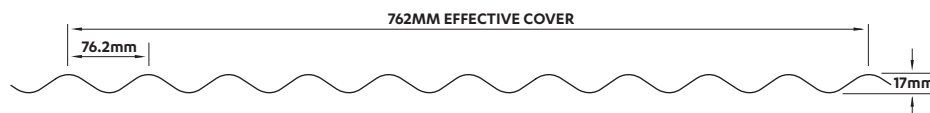
Corrugated roofing offers the timeless elegance and matchless adaptability of the traditional corrugate profile, together with unrivalled technical advice, quality control and after-sales service.



CUSTOM ORB

☐ RECOMMENDED

CUSTOM ORB



TRAPEZOIDAL

Trapezoidal, or rib, profiles have sloping-sided ribs and are fastened through the profile. They are available in a number of configurations to suit a vast range of performance and appearance criteria.

They can be categorised by common application into Residential/Commercial and Commercial/Industrial groups.

RESIDENTIAL AND COMMERCIAL PROFILES

Steel & Tube offer four trapezoidal rib products with rib heights varying between 20mm and 30mm. These are typically utilised in domestic roofing, or for commercial roofing and cladding applications where spanning ability is not a prime requirement.

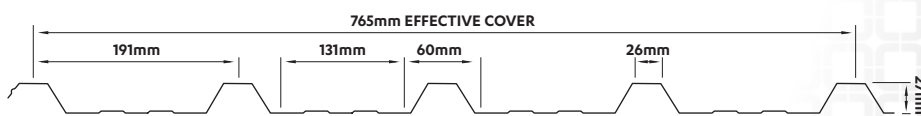
Because both Plumbdek and Trimform profiles feature a strong rib design coupled with wide economical cover, they are equally at home in residential applications or at work in commercial situations.

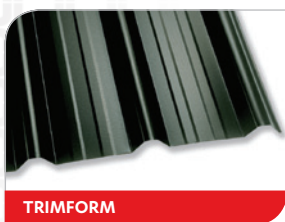


PLUMBDEK

☐ RECOMMENDED

PLUMBDEK

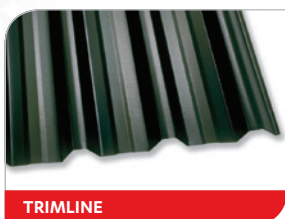
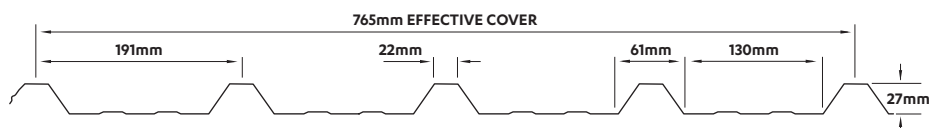




TRIMFORM

☐ RECOMMENDED

TRIMFORM

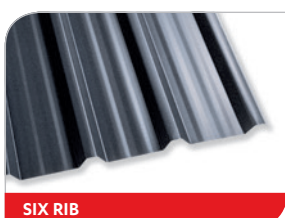
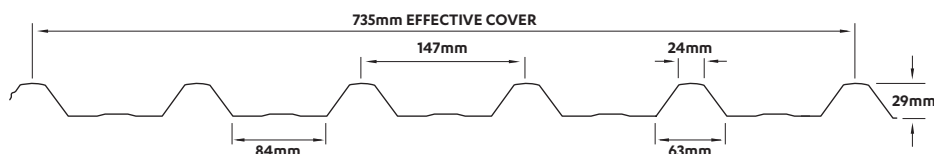


TRIMLINE

☐ RECOMMENDED

TRIMLINE

Trimline has six bold ribs making it an exceptionally attractive and high performing roofing and cladding profile.

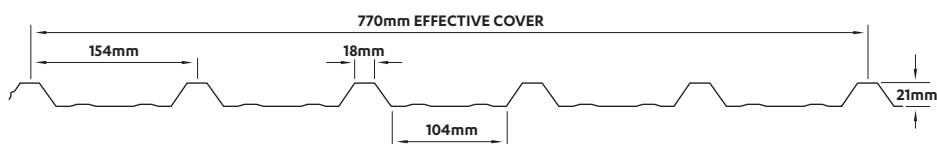


SIX RIB

☐ RECOMMENDED

SIX RIB

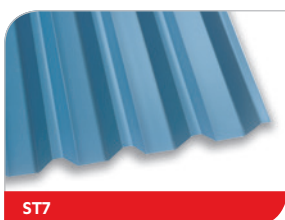
Six Rib has a more subtle rib and wider pan, for an attractive, economical solution to most domestic roofing applications.



COMMERCIAL/INDUSTRIAL PROFILES

Where larger spans or greater robustness is required, the higher-ribbed trapezoids make their mark.

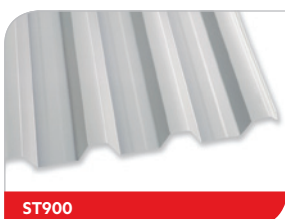
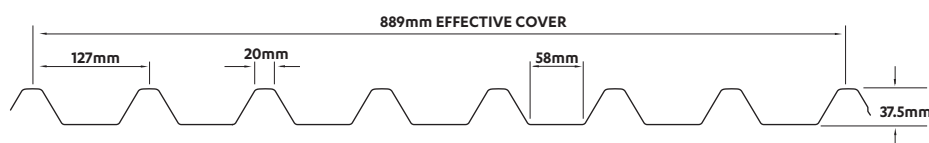
ST7 and ST900 have medium height ribs of 38mm, giving a bolder look for residential applications and enhanced strength for commercial and industrial work.



ST7

☐ RECOMMENDED

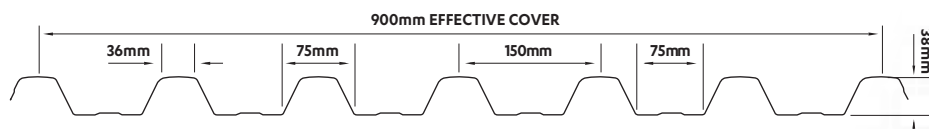
ST7



ST900

☐ RECOMMENDED

ST900



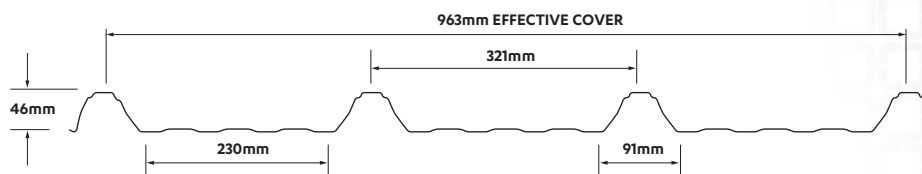


ST963

☐ RECOMMENDED

ST963

ST963 is a profiled metal roofing and cladding profile manufactured by Steel & Tube, having four trapezoidal ribs of 46mm in height. Unique design enhancements stiffen the rib shape to provide industry-leading resistance to both wind uplift and point load distortion.

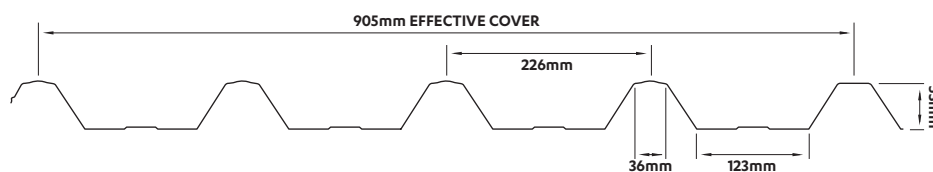


MULTISPAN

☐ RECOMMENDED

MULTISPAN

Multispan has a 53mm high rib, giving it exceptional strength which in turn offers construction economies through purlin/roofing design optimisation. The underlap is fully supported making it a favourite with installers, and the patented crested rib ensures a snug fit around the fastener head.



TROUGH SECTION

Steel & Tube's roofing products trough section profiles are designed to meet a variety of needs from low pitch and long lengths to steep pitches where the clean lines are enhanced by the secret fixings.

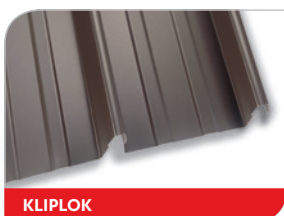
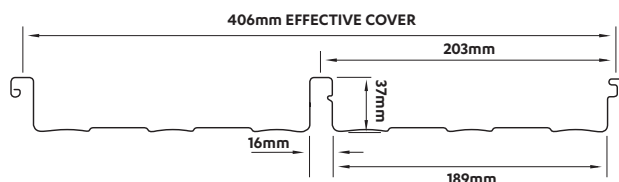
Paneldek, with its unique hinge locking action, is a favourite with designers and installers while **Kliplok** and **Hi Rib** deliver exceptional performance capabilities because they are both manufactured from High Tensile Steel.



PANELDEK

☐ RECOMMENDED

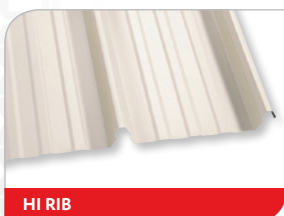
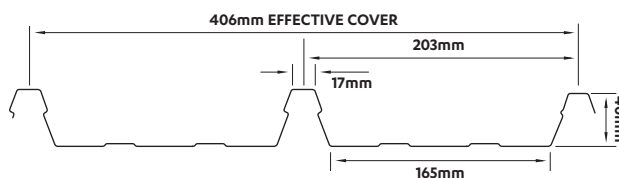
PANELDEK



KLIPLOK

☐ RECOMMENDED

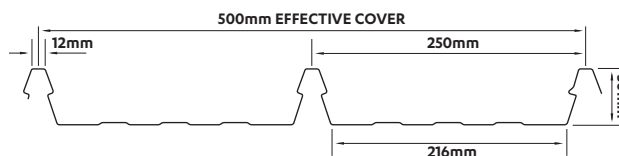
KLIPLOK



HI RIB

☐ RECOMMENDED

HI RIB



Note: All profile dimensions are nominal.

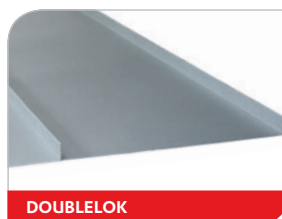


EUROLINE

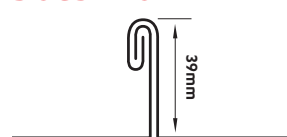
EuroLine is an elegant descendant of eighteenth century standing seam roofing which, because of Steel & Tube's modern rollforming technology, is now available in continuous lengths.

EuroLine is obtainable in three profiles: Battenlok, Seamlok and Doublelok. Each profile is available in nominal widths of 300mm, 400mm and 500mm. Custom pan widths or tapered pans are also available.

For wall cladding, Seamlok is the recommended profile.



DOUBLELOK



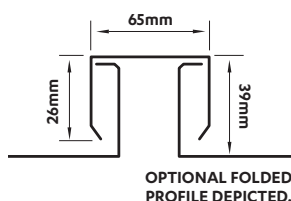
DOUBLELOK

☐ RECOMMENDED



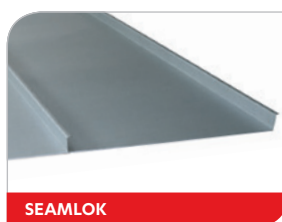
BATTENLOK

BATTENLOK



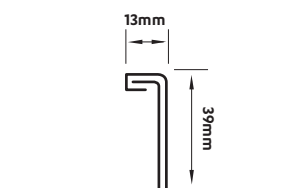
OPTIONAL FOLDED PROFILE DEPICTED.

☐ RECOMMENDED



SEAMLOK

SEAMLOK

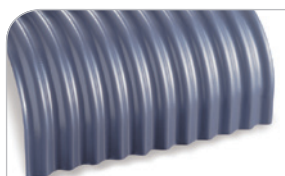


☐ RECOMMENDED



CURVED

Steel & Tube is equipped to precurve corrugate and four trapezoidal profiles in residential or commercial designs where radii exceed the limits for drape or spring curving. Guidelines on Spring Curving are available from your nearest Steel & Tube roofing branch.



CUSTOM ORB

CUSTOM ORB

Custom Orb may be roll curved to the fashionable barrel roll or to the tighter, more traditional bullnosing; both requiring a special grade of material which may need to be ordered in advance.

☐ RECOMMENDED



CRIMP CURVED

CRIMP CURVED

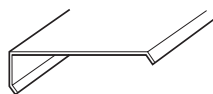
Crimp curved Trimline, Plumbdek, Six Rib, ST900, ST7 and Multispan will meet most modern industrial or residential design expectations.

Convex curved (bullnosed) sheets are available in all six trapezoidal profiles with concave curving available in most profiles.

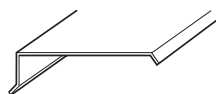
☐ RECOMMENDED

COMMON FLASHINGS

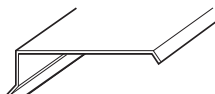
KICK IN BARGE



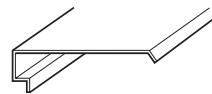
KICK OUT BARGE



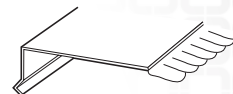
BIRDS BEAK BARGE



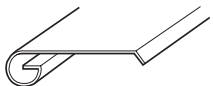
SQUARE BARGE



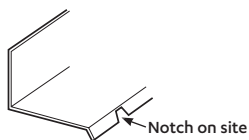
SOFT EDGE BARGE



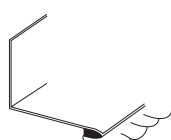
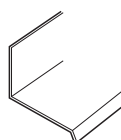
BARGE ROLL



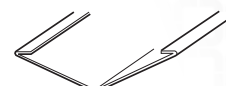
NOTCHED APRON



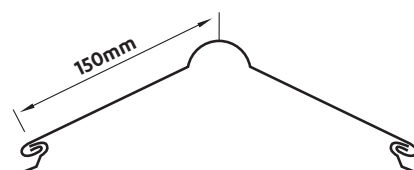
SOFT EDGE APRON

ABUTMENT OR
SIDE FLASHING

STANDARD VALLEY



For corrugate barges, your supplying branch will have dimensions standard for their area. For other profiles dimensions should be specified by the installer. Internal angles on soft edge or notched barge or apron also need to be specified.



*200mm wide cover ridge is also available.

WALL CLADDING

Steel & Tube's roofing products cladding profiles are specifically designed for installations where wide, economical cover is a necessity. All can be laid horizontally or vertically.

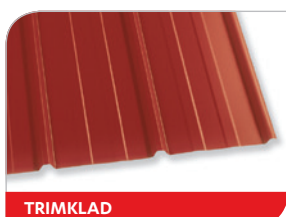
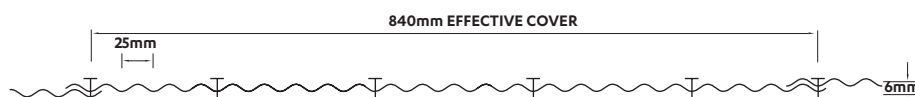


MINI ORB

☐ RECOMMENDED

MINI ORB

Mini Orb is defined by its close sinusoidal curves. Originally developed for interior design applications, Mini Orb is finding increasing utility as exterior cladding and for external decorative features.

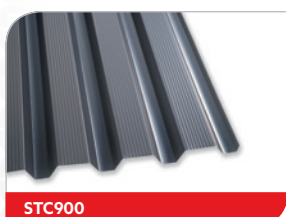
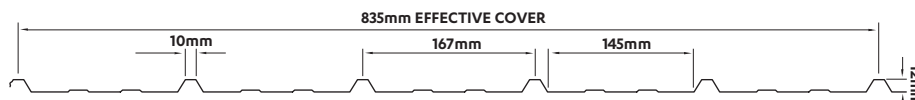


TRIMKLAD

☐ RECOMMENDED

TRIMKLAD

Trimklad has an unobtrusive rib and a very wide swaged pan for any installation where a neat appearance and lower labour costs are an essential design criteria.

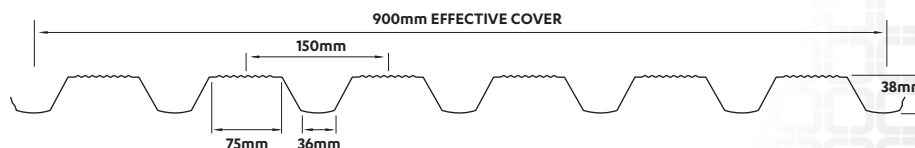


STC900

☐ RECOMMENDED

STC900

STC900 is specially designed for pan-out wall cladding or canopies where the normal underside of the profile is exposed to view. Fine flutes in the face highlight the surface and accentuate the negative detail, while modifications to the side lap detail means that weatherproofness and good looks are maintained on both sides of the profile.



Note: All profile dimensions are nominal.



RAINWATER SYSTEMS



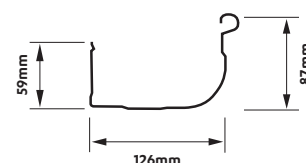
TRADITIONAL

MULTILINE QUAD

☐ RECOMMENDED

- Multiline Quad captures the colonial look with its gentle radiused front and strong swaging, blending traditional design with the styles of today.
- Multiline Quad is fitted using fully concealed brackets.

CROSS SECTIONAL AREA
6850mm²

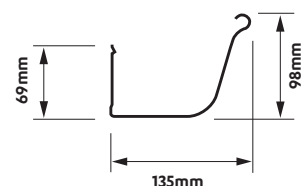


CUSTOMLINE

☐ RECOMMENDED

- Customline is a larger, longrun version of the classic quarter round, and is deeper than other designs, for greater water carrying capacity and enhanced aesthetic appeal.
- Customline can be fitted with fully concealed brackets to enhance the clean smooth lines or with external brackets, for a timeless classic look.

CROSS SECTIONAL AREA
7163mm²



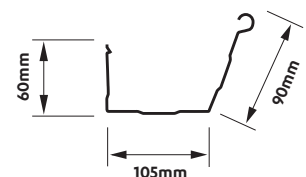
CONTEMPORARY

HIGHLINE

☐ RECOMMENDED

- Highline is one of the most attractive domestic spoutings available, and has a high, sloping face to better cover the end view of domestic roofing systems.
- Highline is fixed using fully concealed brackets to maintain its clean line.

CROSS SECTIONAL AREA
6600mm²

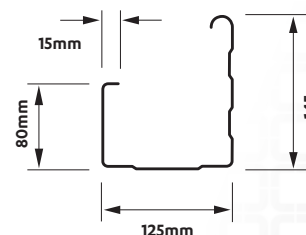


PLUMBLINE

☐ RECOMMENDED

- Plumline provides a large capacity domestic spouting which is also at home on smaller commercial work.
- Plumline has a strong profile with a double swaged face and swaged base.
- Plumline is fixed using concealed clips for emphasis of its bold lines.

CROSS SECTIONAL AREA
10000mm²





FASCIA SYSTEMS

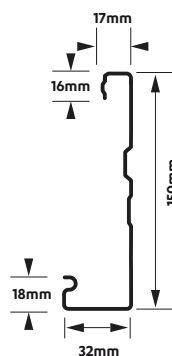
MULTILINE FASCIA

- An attractive and economical advance over timber fascias, Multiline Fascia can be fitted with a range of spoutings for contemporary or traditional appearances.
- Multiline Fascia uses a uniquely designed rafter bracket to prevent denting and damage in metal fascias due to differential movement of trusses and rafters.

Steel & Tube's fascia systems are available exclusively through qualified installers.

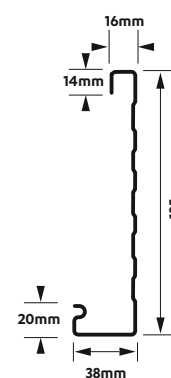
MULTILINE FASCIA 150

☐ RECOMMENDED



MULTILINE FASCIA 185

☐ RECOMMENDED



COMMERCIAL GUTTERS

The most commonly specified commercial gutters are 175mm and 300mm however as each are specifically folded the dimensions can be varied greatly to suit any application provided appropriate fixing brackets are sourced.

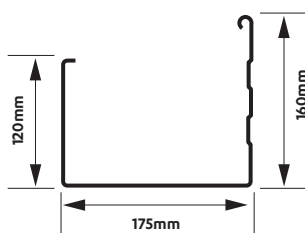
Standard pressed internal brackets are available for the 175 gutter, however for extra strength specially fabricated steel external brackets are recommended (colour matched if required).

Steel & Tube provide details regarding industrial gutter bracket design and placement, as part of the *Steel & Tube Roofing & Cladding Solutions* available from our website www.steelandtube.co.nz.

175 GUTTER

☐ RECOMMENDED

CROSS SECTIONAL AREA
21,000mm²



300 GUTTER

☐ RECOMMENDED

CROSS SECTIONAL AREA
31,350mm²



Note: All profile dimensions are nominal.



TECHNICAL DETAILS

MATERIALS

All our products are available in a wide range of materials and finishes. The following are some of the options:

Metallic Coated: Galvanised Steel, Zinc/Aluminium coated steel.

Pre-Painted Steel: Colorsteel Endura, Colorsteel Maxx, Colorcote ZR8, Colorcote ZRX, Colorcote ZM8 and Colorcote ZMX.

Pre-Painted Aluminium: Colorcote ARX and Colorcote AR8.

Other: Aluminium plain or mill finished, stainless steel, pure copper or solid zinc, all subject to profile choice and material availability.

MINIMUM PITCH

To comply with E2/AS1 the recommended minimum pitch for roofing is:

CUSTOM ORB	SIX RIB	ALL OTHER ROOFING PROFILES
8°	4°	3°.

STORAGE

Products are despatched from the factory in top condition, however the material can be damaged before installation by incorrect storage practices. Premature deterioration due to incorrect storage may be avoided if these simple guidelines are followed:

- On arrival, ensure sheets are dry. If wet, open the pack and separate the sheets to allow them to dry. Store packs of the product off the ground in a sheltered position providing some fall to allow water to run off. Protect packs with a loose fitting waterproof cover, allowing air to circulate.
- Contact with wet cement should be avoided at all times.

INSTALLATION

The installation of metal roofing products is a specialised field requiring knowledge and experience of numerous issues with regard to trade practice and material compatibility.

- Poor handling prior to or during installation can cause damage which may affect the appearance and ultimate performance of the product. Don't handle sheets roughly or carelessly or drag or slide sheets over each other or rough surfaces, as damage to the coating may occur. Equipment used to handle the sheets should be clean and free of dirt and grit.
- Soft soled shoes should be worn whenever walking on the product to prevent damage to the coating; traffic up the roof should be in the pans of the profile and across the roof should be on the purlin line.
- Prior to installation ensure that the tops of the purlins or girts are all in the same plane; if packing or easing is necessary ensure this is not to the detriment of the connection between the fastener and the structure.
- Sheets should be lapped away from the line of sight wherever possible to enhance aesthetic appeal and all sheets should be stop ended at the top, and lipped at the bottom on pitches below 8°.
- Ensure that the anti-capillary edge is fitted as the external overlap and is visible from the top side.
- The use of touch-up paints is not recommended; if a pre-painted sheet is excessively damaged by scratching it should be replaced. Accessories should be colour matched prior to installation.
- Regularly clean up the area by sweeping swarf, offcuts, rivet shanks and loose fasteners with a soft-bristled broom. Collect and remove all debris daily as unsightly staining from swarf and other unprotected steel items can occur overnight.
- The strippable film applied to some prepainted products must be removed within two weeks of installation, or earlier if storage is in direct sunlight.
- Recommended references are the *New Zealand Steel Installer's Guide* and *NZMRM Profiled Metal Roofing Code of Practice*.

DESIGN FOR DURABILITY

Steel & Tube roofing and cladding solutions are available on our website providing design and installation details for residential and commercial applications. Contact your local branch or the Technical Helpline on 0800 333 247 for specific advice.

With correct product selection, installation and maintenance, your Steel & Tube roof will remain attractive and weatherproof for many years. Unfavourable design practices will detrimentally affect the performance of your roof and should be avoided. If any of the following situations are evident in your design you should contact your Steel & Tube representative for advice.

- Areas of roofing, cladding and rainwater systems unwashed by rainfall will accumulate atmospheric debris which can become corrosive when damp. These areas will require maintenance depending on the product used and the environment. Refer to the Maintenance section of this publication.
- Do not discharge water runoff from inert materials such as Zinalume steel, pre-painted roofing, tiles or clear sheeting onto unpainted galvanised roofing and gutters, as the corrosive salts formed in this situation are unstable and can lead to premature corrosion.
- Where two different metals are in contact one metal will tend to sacrifice itself to protect the other. A similar effect can occur with water flowing over dissimilar metals. In particular, avoid runoff from copper or brass onto Zinalume steel roofing, and avoid contact with, or runoff from unpainted lead onto Zinalume steel.
- Fasteners should be compatible with the roofing material chosen and have durability not less than the material being fastened. Stainless steel or aluminium fasteners should be used with pre-painted aluminium roofs.
- Wall cladding should terminate at least 50mm above ground level. Lower edges of sheets must be kept clear of vegetation and debris.

WARRANTIES & ENVIRONMENTS

WARRANTYPLUS

Steel & Tube offer exclusively to our clients, the unparalleled peace of mind afforded by **WarrantyPlus**.

WarrantyPlus is the most comprehensive warranty available in the industry today. **WarrantyPlus** covers an extended range of criteria, is supported back to back by our suppliers, includes site-specific maintenance requirements and is transferable to subsequent owners.

WarrantyPlus for pre-painted products in residential roofing applications is available for up to 30 years against perforation as a result of corrosion, and up to 18 years against flaking,

peeling and excessive fade of the coating, depending on the environment and coating system.

WarrantyPlus guarantees that your roof will be a suitable surface for the collection of rain water for drinking.

Non-residential warranties are for a maximum of 15 years duration.

Refer to your nearest Steel & Tube representative or *New Zealand Steel's Specifiers & Builders Guide* for information on warranty periods.

ENVIRONMENTS

The following guide is an indication of product recommendations for residential roofing, rainwater systems and walling. Wall cladding and rainwater systems are often less effectively rain washed than roofing, so selecting a suitably durable material is important.

Your nearest Steel & Tube representative will be happy to give you specialist advice for your area.

Marine environmental category is better expressed by way of defining characteristics rather than distance from water, typical zones are given for additional guidance only.

CHOOSING THE RIGHT PRODUCT

CATEGORY	CHARACTERISED BY	TYPICAL ZONES	SUGGESTED MATERIAL	
			ROOFING AND RAINWATER SYSTEMS	WALL CLADDING
VERY SEVERE MARINE	• Heavy salt deposits • Almost constant smell of salt spray in air	Within 50 metres from breaking surf on East Coast, and 100 metres from breaking surf on West Coast	Colorcote, ARX	Colorcote, ARX
		Within 50-100 metres from breaking surf on East Coast, 100-200 metres from breaking surf on West Coast	Colorsteel, Maxx	Colorcote, ARX
SEVERE MARINE	• Light salt deposits • Frequent smell of salt in the air	Commencing from Very Severe zone up to 500 metres or more inland from breaking surf; or in the immediate vicinity of calm salt water such as harbour foreshores	Colorsteel, Maxx or Colorsteel, Endura	Colorsteel, Maxx
MODERATE MARINE	• Little or no salt deposits • Occasional smell of salt in the air	500 metres to 1km from breaking surf; or in the immediate vicinity of calm salt water such as estuaries	Colorsteel, Endura or Zinalume	Colorsteel, Endura
MODERATE INLAND	• No obvious marine influences	More than 1000 metres from salt water	Colorsteel, Endura or Zinalume	Colorsteel, Endura or Zinalume

Note: Industrial and Geothermal areas are subject to individual assessment. The above terms are subject to correct design, storage, installation and maintenance provisions. Marine environments may be extended inland by prevailing winds and local conditions.

MAINTENANCE

Few products are absolutely maintenance-free and all Steel & Tube profiles are subject to the cumulative effects of weather, dust and other airborne deposits, some of which are extremely aggressive. WARRANTIES & ENVIRONMENTS on Page 9 will assist in identifying the category into which the site fits. In order to ensure the maximum service life from the chosen coating system, the property owner should note the following maintenance advice:

- Soft soled shoes should be worn whenever walking on roofing to prevent damage to the coating; walk only in the pans of the profile, and on the purlin line whenever possible.
- Normal rainwashing will remove most accumulated atmospheric debris, but manual washing is required for areas which do not receive adequate rainwashing. These areas, such as wall cladding under eaves, or sheltered areas where overlapping of roof areas occurs due to the design, are known as unwashed areas.
- Other high risk areas that require manual washing include around flues and extractor vents, under television aerials and trees and sites prone to mould, lichen, bird droppings or debris.
- Spoutings and gutters must be regularly inspected to remove debris, which may cause ponding.
- Surfaces may be washed with water and a soft-bristled brush, or for larger areas waterblasting at pressures up to 20 MPa may be more appropriate.
- The following table shows maintenance requirements for roofing products relative to the environment in which the building is located.

THESE RECOMMENDATIONS ARE DEPENDANT ON SELECTION OF THE APPROPRIATE ROOFING MATERIAL FOR THE PREVAILING ENVIRONMENT.

MATERIAL	ENVIRONMENT	MAINTENANCE REQUIREMENT			
		ROOF	WALLS	RAINWATER SYSTEMS	UNWASHED AND HIGH RISK AREAS
PRE-PAINTED STEEL	Very severe	Rainwashing Only	Wash every 3 months	Wash monthly	Wash monthly
	Severe	Rainwashing Only	Wash every 6 months	Wash every 3 months	Wash every 3 months
	Moderate	Rainwashing Only	Wash every 12 months	Wash every 6 months	Wash every 3 months
ZINCALUME	Moderate	Rainwashing Only	Wash every 6 months	Wash every 3 months	Wash every 3 months

OVERPAINTING

- Galvanised or Zincalume products can be overpainted immediately or after weathering. Use primer and top coat from a reputable paint manufacturer suitable for galvanised steel.
- Do not use calcium plumbate primers if rain water is to be collected for drinking purposes.
- Pre-painted roofing is best left weathered for at least twelve months prior to overpainting, unless special steps are taken to improve adhesion.
- As with all paint systems preparation is the key. For more information on overpainting Steel & Tube's roofing pre-painted materials, refer to the *New Zealand Steel Specifiers and Builders Guide*.

DRINKING WATER

- Pre-painted and metallic coated products are suitable for the collection of drinking water.
- On new installations the first 25mm of rainfall should be discarded to avoid contamination from any manufacturing or installation residue.
- Some post-painted systems are unsuitable for the collection of drinking water, check with the paint supplier for compatibility.

Note:

Trademarks apply to the following products presented in this publication:
 Customline, Colorcote, ARX, Colorsteel, Endura, Maxx, EuroLine, Multiline, Multispan,
 Paneldek, Plumbdek, Plumbline, ST900, STC900, ST7, Trimlad, Trimline, Trimform, Zincalume.

STRO205