Boundary Wall System

Design & installation guide for zero-lot-line construction
Introduction

Gyprock Boundary Wall systems are responsive solutions that can evolve from single boundary walls into double wall systems that perform as intertenancy walls. They allow non-sequential development of adjacent buildings in zero-lot-line developments, maximise liveable space, and have the necessary fire rating and weather resistance for buildings that are close to a boundary. They also provide a high level of acoustic separation.

Gyprock Boundary Wall systems allow non-concurrent development of adjacent dwellings with the flexibility of individual financing and titles. They provide a boundary wall solution that can be built from one side where a neighbouring wall exists.

Applications

Gyprock Boundary Walls are timber framed systems intended for use in the staged construction of adjacent Class 1 buildings. As an alternative to building row houses as a single block, a Gyprock Boundary Wall system allows individual units to be completed before the construction of adjoining units. The wall first performs as an external wall to meet fire, thermal and weatherproofing requirements, then when an adjoining tenancy is added, the combined system can act as an intertenancy wall that may be required to satisfy an acoustic separation function.

Advantages

Specify Gyprock Boundary Wall for detached dwellings to:

- Achieve compliance as an external wall
- Provide a narrow footprint
- Build without access from the adjoining property

Specify Gyprock Boundary Wall for zero-lot-line developments to:

- Evolve boundary walls into intertenancy walls
- Stage financing and sales with individual titles
- Maximise land use
Figure 1: Typical Overview Of Gyprock Boundary Wall System Application

Existing Structure
With completed boundary wall and weather resistant external face

Construction From One Side
Timber framed modular prefabrication and simple assembly processes enable construction from one side only

Gyprock Boundary Wall Modules
Floor-to-floor with supplementary fire protection infill at floor frame level
Floor-to-ceiling to accommodate internal linings
Roof void with supplementary fire protection infill

Plumbing Services
May be installed within stud framing with penetration through internal linings (backing of 16mm fire grade plasterboard and acoustic rated wet area sealant are required)

Electrical Services
May be installed within stud framing with penetration through internal linings (backing of 16mm fire grade plasterboard is required)

Bradford Glasswool Insulation
Ensures the required acoustic performance, and delivers outstanding thermal characteristics

Traditional Internal Lining Methods
Linings are fixed as per normal Gyprock residential installation specifications, and are installed after the building reaches weather resistance
Gyprock Plasterboard Selection

Gyprock plasterboard products are available in a large range of sheet lengths. Lengths vary by state, and a full list is available at www.gyprock.com.au. Standard width is 1200mm. Some products are also available in 900, 1350 and 1400mm widths (lead times may apply). Shaft Liner Panel is supplied in 600mm width only. Colour shading behind each product name approximates the colour of the product face liner sheet.

Table 1: Gyprock Plasterboard Features, Applications & Specifications

<table>
<thead>
<tr>
<th>GYPROCK® PLASTERBOARDS</th>
<th>APPLICATIONS – WALLS &amp; CEILINGS</th>
<th>THICKNESS (mm)</th>
<th>MASS (kg/m²)</th>
<th>FIRE RESISTANT</th>
<th>IMPACT RESISTANT</th>
<th>SOUND RESISTANT</th>
<th>MODULANT RESISTANT</th>
<th>LOW VOC</th>
<th>SENSITIVE CHOICE ACCREDITED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential – Select Range</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Plus™                  | A 10mm thick sheet primarily designed for residential walls. Long edges are recessed to assist in producing a smooth, even and continuous surface once jointed.  
Made with Optimised Core technology that delivers an advanced performance-to-weight ratio, meaning greater breaking strength in a substantially lighter board that continues to exceed the performance requirements of AS/NZS2588.  
Optimised Core technology delivers improved handling and installed performance, as well as crisper score and snap. | 10 | 5.7 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Supacell™              | A 10mm thick sheet designed to span up to 600mm in ceiling applications. Can also be used for wall applications. Long edges are recessed to assist in producing a smooth, even and continuous surface once jointed.  
Made with Optimised Core technology that delivers an advanced performance-to-weight ratio, meaning greater breaking strength in a substantially lighter board that continues to exceed the performance requirements of AS/NZS2588.  
Optimised Core technology delivers improved handling and installed performance, as well as crisper score and snap. | 10 | 6.1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Aquachek™              | Both the core and linerboard facing are treated in manufacture to withstand the effects of moisture and high humidity.  
Recessed long edges allow flush jointing to other Recessed Edge plasterboards. | 10 | 7.9 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Residential – Specialty Options |
| Soundchek™             | Designed to provide enhanced acoustic resistance.  
A machine made sheet composed of a high density gypsum core encased in a heavy duty linerboard.  
Long edges are recessed for flush jointing. | 10 | 9.3 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Sensitive              | Approved by the National Asthma Council's Sensitive Choice® program as a better choice for asthma and allergy sufferers.  
Gyprock Sensitive provides moisture and mould resistance.  
Long edges are recessed for flush jointing. | 10 | 7.9 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Superchek™             | Manufactured with a very dense core and heavy duty facing producing high impact and sound resistance. Superchek has a white paper face to assist in paint coverage.  
Will span 600mm in ceiling applications.  
Double the force to impose a discernible surface indentation compared to standard plasterboard.  
Walls lined with Superchek provide a clearly noticeable reduction in perceived loudness compared to standard plasterboard.  
Long edges are recessed for flush jointing. | 10 | 10.4 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Commercial – Select Range |
| Standard Plasterboard  | RE – Recessed Edge  
Long edges are recessed to assist in producing a smooth, even and continuous surface once jointed.  
RE/SE – 1 Recessed Edge, 1 Square Edge  
Typically used on walls with a single horizontal joint. One long edge is recessed to assist in producing a smooth, even and continuous surface once jointed.  
One long edge is square to enable easy fixing of skirting and cornice at the top and bottom of walls.  
SE – 2 Square Edges  
Long edges are square, and can be butted together without jointing, or covered with aluminium, timber or vinyl mouldings. | 13 | 8.5 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
### Table 1: Gyproc Plasterboard Features, Applications & Specifications

<table>
<thead>
<tr>
<th>GYPROC® PLASTERBOARDS</th>
<th>APPLICATIONS – WALLS &amp; CEILINGS</th>
<th>THICKNESS (mm)</th>
<th>MASS kg/m²</th>
<th>FIRE GRADE RESISTANT</th>
<th>MOISTURE RESISTANT</th>
<th>ENHANCED SOUND RESISTANCE</th>
<th>ENHANCED MOULD RESISTANCE</th>
<th>ENHANCED MOULD RESISTANCE</th>
<th>LOW VOC</th>
<th>GBCA ACCREDITED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquachek™</td>
<td>• Refer to Residential Select Range for details.</td>
<td>13</td>
<td>9.8</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Soundchek™</td>
<td>• Refer to Residential Specialty Options for details.</td>
<td>13</td>
<td>13.0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
| Impactchek™            |  • Fire grade board reinforced with a woven fibreglass mesh to produce a high strength plasterboard which resists soft body impact damage.  
  • Ideal for high traffic areas such as hallways, stairways, playrooms and garages.  
  • Long edges are recessed for flush jointing. | 13             | 10.5       | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
| Fyrchek™               |  • Fire grade board composed of a specially processed glass fibre reinforced gypsum core encased in a heavy duty linerboard.  
  • Ideal for high performance fire and acoustic rated walls and ceilings.  
  • Long edges are recessed for flush jointing. | 13             | 10.5       | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
| Fyrchek™ MR            |  • Fire grade board with moisture resistant properties.  
  • Both the core and the liner board are treated in manufacture to withstand the effects of high humidity and moisture.  
  • Long edges are recessed for flush jointing. | 13             | 10.8       | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
|                       |  | 16             | 12.9       | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
| Commercial – Specialty Options |  |  |  |  |  |  |  |  |  |  |
| EC08™ Impact           |  • This product features higher levels of recycled content, making it a superior choice for Green Building projects.  
  • EC08 Impact is a fire grade board offering increased density for greater resistance to soft and hard body impact for high traffic areas such as hallways and stairs in education and health facilities.  
  • Long edges are recessed for flush jointing. | 13             | 12.1       | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
| EC08™ Impact MR        |  • This product features higher levels of recycled content, making it a superior choice for Green Building projects.  
  • A fire grade board specially treated for wet area/high humidity locations subject to increased impact risk, such as bathrooms, kitchens, laundries, walkways for hospitals, aged care, educational and commercial buildings.  
  • Long edges are recessed for flush jointing. | 13             | 12.4       | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
| EC08™ Complete         |  • This product features higher levels of recycled content, making it a superior choice for Green Building projects.  
  • Approved by the National Asthma Council’s Sensitive Choice® program as a better choice for asthma and allergy sufferers. Gyproc EC08 Complete is a premium internal lining solution which integrates an efficient mould inhibitor, scuff resistance, soft and hard body impact resistance, moisture resistance, sound resistance and fire resistance into a low VOC plasterboard.  
  • Long edges are recessed for flush jointing. | 13             | 12.4       | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
|                       |  | 16             | 14.8       | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
| Shaft Liner Panel      |  • Fire grade board used extensively in Gyproc shaft systems, services systems, party wall and intertenancy wall applications.  
  • A 25mm thick sheet composed of a glass fibre reinforced gypsum core encased in a heavy duty linerboard.  
  • 600mm wide square edge sheets. | 25             | 19.8       | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
| Flexible               |  • A 6.5mm thick plasterboard with an enhanced core to allow bending to small radii for curved walls and ceilings.  
  • Designed for installation as a two layer system.  
  • Long edges are recessed for flush jointing. | 6.5            | 4.3         | ✓                   | ✓                 | ✓                          | ✓                        | ✓                        | ✓      |                 |
Components

Fasteners & Stud Adhesive

- Type S, bugle head, needle point coarse thread screw for fixing plasterboard/wallboard linings to timber framing, and for laminating plasterboard. Fine thread screws and clouts may also be used for fixing to timber.

<table>
<thead>
<tr>
<th>Application</th>
<th>Size (Framing)</th>
<th>Pack</th>
<th>Qty</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x10mm/ Laminating 16mm</td>
<td>6g x 25mm (softwood/hardwood)</td>
<td>Loose</td>
<td>1000</td>
<td>169067</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collated</td>
<td>1000</td>
<td>162775</td>
</tr>
<tr>
<td>1x13/16mm</td>
<td>6g x 32mm (softwood/hardwood)</td>
<td>Loose</td>
<td>1000</td>
<td>169070</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collated</td>
<td>1000</td>
<td>162777</td>
</tr>
<tr>
<td>2x10mm</td>
<td>6g x 32mm (hardwood)</td>
<td>Loose</td>
<td>1000</td>
<td>169070</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collated</td>
<td>1000</td>
<td>162777</td>
</tr>
<tr>
<td>2x10mm</td>
<td>6g x 45mm (softwood)</td>
<td>Loose</td>
<td>500</td>
<td>169074</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collated</td>
<td>1000</td>
<td>162778</td>
</tr>
</tbody>
</table>

- Galvanized clouts for fixing 6mm Cemintel Cladding Sheets to timber framing over 16mm plasterboard.

Gyprock Acrylic Stud Adhesive

- Gyprock Acrylic Stud Adhesive is used in conjunction with fasteners for fixing internal linings. It is coloured blue for easy identification. It can be used in temperatures not less than 5°C.
- Contact surfaces must be free of oil, grease or other foreign materials before application. The adhesive is applied with a broad knife to form 25mm diameter by 15mm high walnuts. This product is suitable for use with pre-painted metal battens and some treated timbers. Always follow directions on packaging.

WARNING

- Stud adhesive must not be relied on in fire rated systems.
- Daubs of adhesive must never coincide with fastener points.
- Stud adhesive does not constitute a fixing system on its own and it must be used in conjunction with nail or screw fasteners.

Sealants

- Gyprock Fire Mastic. Fire and acoustic rated, exterior grade sealant for use where detailed.

<table>
<thead>
<tr>
<th>Pack</th>
<th>Qty</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sausage</td>
<td>600ml</td>
<td>10924</td>
</tr>
</tbody>
</table>

- Sikaflex 11-FC. Weather resistant sealant for use where detailed.

<table>
<thead>
<tr>
<th>Pack</th>
<th>Qty</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube</td>
<td>1 x 310ml</td>
<td>39378</td>
</tr>
</tbody>
</table>

Flashing

- Z-flashing for flashing the base and side of Gyprock Boundary Wall modules. Supplied by others.

<table>
<thead>
<tr>
<th>Pack</th>
<th>Qty</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sausage</td>
<td>900g</td>
<td>95082</td>
</tr>
<tr>
<td>Bucket</td>
<td>5.5kg</td>
<td>10091</td>
</tr>
</tbody>
</table>

WARNING

- Stud adhesive must not be relied on in fire rated systems.
Jointing Products

- CSR Gyprock has a wide range of compounds, cements, and accessories for finishing plasterboard and fibre cement installations.

For plasterboard finishing information, please refer to GYP547 Gyprock Residential Installation Guide.


- Cemintel Expresswall Backing Strip.

Cladding Sheet vertical joints may be formed as sealed expressed joints in lieu of H-joiner. Manufactured from high tensile Colorbond steel, and black in colour. A bond-breaker tape is to be applied over the backing strip behind the sealant.

System Acoustic/Thermal Insulation

- CSR Bradford Gold Batts R2.0 and R2.5 for insulation of the Boundary Wall system.

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Qty/Pack</th>
<th>Cover/Pack</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2.0</td>
<td>1160 X 430 X 90 mm</td>
<td>22</td>
<td>11.0m²</td>
<td>13250</td>
</tr>
<tr>
<td></td>
<td>1160 X 580 X 90 mm</td>
<td>18</td>
<td>12.2m²</td>
<td>12368</td>
</tr>
<tr>
<td>R2.5</td>
<td>1160 X 420 X 90 mm</td>
<td>8</td>
<td>3.0m²</td>
<td>153646</td>
</tr>
<tr>
<td></td>
<td>1160 X 570 X 90 mm</td>
<td>8</td>
<td>5.3m²</td>
<td>153651</td>
</tr>
</tbody>
</table>
System Fire Insulation

- CSR Bradford Fibertex 450 for use in wall areas where internal room linings are not present, such as in the roof space and in floor/ceiling spaces.

<table>
<thead>
<tr>
<th>Size</th>
<th>Qty/Pack</th>
<th>Cover/Pack</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200 x 600 x 75mm</td>
<td>4</td>
<td>2.88m²</td>
<td>116302</td>
</tr>
</tbody>
</table>

- CSR Bradford Fireseal Party Wall Sealer. Fire protection for cavities at roof and wall cladding voids.

<table>
<thead>
<tr>
<th>Size</th>
<th>Qty/Pack</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000 x 300 x 50mm</td>
<td>2</td>
<td>125565</td>
</tr>
<tr>
<td>4000 x 300 x 75mm</td>
<td>2</td>
<td>125566</td>
</tr>
<tr>
<td>4000 x 360 x 50mm</td>
<td>2</td>
<td>134494</td>
</tr>
<tr>
<td>4000 x 360 x 75mm</td>
<td>2</td>
<td>136571</td>
</tr>
</tbody>
</table>

Wall Wrap/Sarking

- CSR Bradford Enviroseal Proctorwrap RW, used on the external side of the Fyrchek MR plasterboard for moisture and thermal performance.

<table>
<thead>
<tr>
<th>Size</th>
<th>Qty/Pack</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RW light duty</td>
<td>1500mm</td>
<td>75</td>
</tr>
</tbody>
</table>

- CSR Bradford Thermoseal Wall Wrap. Alternative wall wrap products for use on the external side of the Fyrchek MR plasterboard for moisture and thermal performance. Acoustic performance values of Gyprock Boundary Wall systems may be affected.

<table>
<thead>
<tr>
<th>Product</th>
<th>Roll Width</th>
<th>Roll Length</th>
<th>Cover/Roll m²</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermoseal Resiwrap</td>
<td>1350mm</td>
<td>30m</td>
<td>40.5</td>
<td>116531</td>
</tr>
<tr>
<td>Thermoseal Wall Wrap</td>
<td>1350mm</td>
<td>60m</td>
<td>81.0</td>
<td>10576</td>
</tr>
<tr>
<td>Thermoseal 733</td>
<td>1350mm</td>
<td>60m</td>
<td>81.0</td>
<td>86166</td>
</tr>
</tbody>
</table>

System Ancillary Items

Typical Boundary Wall assemblies may require the following ancillary items (supplied by others):

- Dampcourse flashing for wall base to slab.
- Custom folded, corrosion resistant ridge/parapet capping and boundary cavity flashings including fixings and brackets.
- Face or groove fixed reglet flashings to suit adjacent wall types.
- Box gutter profiles with brackets, fixings and support pans.
- Cup head bolts/washers/nuts for fixing framing modules together.
- Exterior paint system.
- Lifting eyes/brackets/slings, fixings and associated lifting equipment.
Design Considerations

Design Responsibility
This guide represents good practice, though it is not intended as an exhaustive statement of all relevant information. It remains the responsibility of the building designer to verify that the chosen system is suitable for the requirements of the project.

CSR recommends that a comprehensive assessment of the BCA performance requirements for the external walls be undertaken prior to selection of the external wall and cladding system, including:

- Structural Design
- Weatherproofing
- Fire Resistance
- Energy Efficiency
- Acoustic Performance

It is the responsibility of the developer, builder, or owner to ensure that appropriate title arrangements such as easements (where required) are in place to allow for the installation of wall capping to seal the boundary cavity.

It is the builders’ responsibility to ensure that BCA termite protection and resistance to damp requirements are addressed.

Additional design considerations relating to exterior claddings are included in the Cemintel Cladding Systems Design and Installation manual.

Structural Design
All walls must be designed for the applied loads. Loadbearing walls and walls subject to wind pressures shall be appropriately designed to meet the relevant Australian Standards or construction manuals. Boundary Wall stud framing must be timber of at least 45 x 90mm in section to meet requirements of the Fire Resistance Level.

Lifting
Safe handling, erection and temporary bracing of wall modules must be considered by the builder, including the provision of safe lifting and crane attachment methods for the modules prior to erection.

The approximate weight of wall modules with external linings in place is provided in Table 2.

Table 2: Approximate Weight Of Wall Modules

<table>
<thead>
<tr>
<th>Wall Height</th>
<th>Length of Wall Module</th>
<th>2.4m</th>
<th>3.6m</th>
<th>6.0m</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4m</td>
<td>175kg</td>
<td>260kg</td>
<td>440kg</td>
<td></td>
</tr>
<tr>
<td>2.7m</td>
<td>195kg</td>
<td>290kg</td>
<td>490kg</td>
<td></td>
</tr>
<tr>
<td>3.0m</td>
<td>220kg</td>
<td>330kg</td>
<td>540kg</td>
<td></td>
</tr>
</tbody>
</table>

Wind Loading
Cemintel™ Cladding Sheet is suitable for buildings within the geometric limits of AS4055 – Wind Loads for Housing. These limits include a roof height less than 8.5m, eaves height less than 6m, and a building width less than 16m.

Stud spacing and board fixing specifications are provided for wind classifications up to N4 and C2 for timber framing. It is the responsibility of the building designer to determine the wind class of the building and the suitability of the system. Stud spacing and board fixing is to be in accordance with the appropriate specifications detailed in this guide.

Internal Linings
Internal linings are to be designed for the applicable wind pressures calculated in accordance with AS1170 or AS4055. For Gyprock plasterboard linings, the sheet fixing details are to be in accordance with this guide and GYP547 Gyprock Residential Installation Guide. For other lining materials, consult the manufacturer.

Structural Bracing
Boundary Wall systems are not intended to provide wall bracing. Bracing must be provided in the structural framing in the normal manner by using methods such as sheet or strap bracing.

Fire Resistance
The Gyprock Boundary Wall systems in this manual have been assessed by BRANZ in accordance with the general principles of AS1530.4.

Gyprock Boundary Wall Systems are suitable for FRL 60/60/60 applications when designed in accordance with the building and structural considerations above, and installed in accordance with the details in this manual.

Neatly formed penetrations may be made in internal wall linings provided approved wall cavity supplementary fire protection is installed. Refer to Figure 2, Figure 8 and Figure 9.

Where indicated, additional blocking must be of structural grade timber, 90 x 45mm minimum, and shall be mechanically fixed to the structural framing.

CSR Bradford Fireseal Party Wall Sealer Strips may also be used to maintain fire protection continuity in specific areas such as voids between non-combustible roof cladding and framing, and wall end details where a cavity wall cladding system has been installed.
Supplementary fire protection for wall areas where internal wall linings are not present can be achieved via the alternative methods detailed in Figure 2.

**Figure 2: Supplementary Fire Zone Protection**

Acoustic Performance

Acoustic performance values are provided for Boundary Wall systems individually and as pairs. Although there are no requirements for external walls to have a sound rating in the acceptable construction practices of the BCA, systems with values $R_w + C_r$ of 50 or higher are proposed as suitable to meet the performance requirements for the sound insulation of walls separating dwellings.

Boundary Wall systems have been assessed by PKA Acoustic Consulting based on laboratory testing, and the ratings refer to expected laboratory performance. The site performance of the systems may be affected by sound flanking, the effectiveness of workmanship, the reduction of framing centres and the inclusion of structural elements and bridging items. The building designer must pay special attention to airborne and structural flanking paths to minimise the difference between laboratory and field performance.

At junctions of floors and roof to the Boundary Wall, interior wall linings are absent. For flanking sound control, it is required that each story ceiling consists of Gyprock 10mm Supaceil or Gyprock plasterboard of greater mass, and has insulation over the ceiling that extends to 1200mm minimum from the wall. The insulation is to be 8kg/m$^3$ minimum density and 75mm or thicker, such as Bradford R1.5 Gold batts. There must be no penetration to the ceiling in rooms adjacent to the Boundary Wall within 1200mm of the wall.

It is assumed no rating is required between the two adjoining roof spaces and that the spaces are not able to be occupied. It is proposed that these details represent an alternative solution and its acceptance is to be confirmed by the certifier.

Penetrations to the interior wall linings for GPOs require no acoustic treatment. Services for wet areas can be located within the cavity with penetrations to the interior wall linings made in close cut holes and then sealed with acoustic rated sealant such as Gyprock Fire Mastic.

Termite Protection

As there is a wide variety of methods for managing termite entry to buildings, and selecting the appropriate method for any structure depends on specific risk factors and the form of construction, measures for termite management have not been addressed in this guide.

Refer to your local pest management service, the BCA, AS3660 : Termite management, and your local building authorities for more information about the requirements for the design of a suitable termite management system.

Weather Resistance

The Boundary Wall system has been assessed by AECOM Australia as suitable for use with serviceability wind loads of up to 1.19kPa. This relates to AS4055 Wind Classifications up to and including N4/C2. The assessment is based on weather testing at the CSR Research facility based on the procedures of AS4284 Testing of Building Facades.

The system features a horizontal Z-flashing at storey junctions and vertically at adjoining wall modules. Intermediate cladding joints are formed using either traditional H-moulds or as sealed joints over a backing strip.

All framing, sarking, flashings, damp proof courses and sealants must be installed in accordance with the relevant product manufacturer’s instructions, applicable standards and building codes.
Insulation And Energy Efficiency
Compliance with thermal performance requirements can be achieved by meeting the minimum system R-values for the appropriate climate zones. The level of insulation provided in a wall is described by its R-value. The higher the R-value, the greater the insulation provided.

R-values for Boundary Wall systems are given in the system selection tables. Additional information can be obtained by contacting CSR DesignLINK.

Condensation Management
This is a complex problem and can occur under a variety of conditions (not just in cold and tropical climates). Selection of the right wall wrap/sarking needs to consider the local climate, building use and orientation, material R-value of the insulation, as well as the degree and location of ventilation.

Gyprock Boundary Wall systems include Bradford Enviroseal ProctorWrap RW in accordance with testing for acoustic performance. This wrap is vapour permeable and recommended for buildings in Climate Zones 3 to 8. For other Climate Zones a vapour impermeable wrap may be required. Note that wraps other than Enviroseal ProctorWrap RW may affect the published acoustic performance of the Boundary Wall.

Substitution
To achieve system fire and acoustic compliance, plasterboard and fibre cement linings must be as specified in this manual. Additional systems are available, contact CSR DesignLINK for details.

Substitution of insulation materials, (excluding rockwool supplementary fire protection and cavity seal), is permissible however no statement of acoustic performance will be provided by CSR where other suppliers’ materials are used.

Painting
Cemintel Cladding Sheet must be painted where it is exposed to the weather. Painting of the sheets is recommended in all cases, as future demolition of adjacent buildings may leave the wall exposed. CSR recommends the application of a priming coat and a minimum of two coats of exterior grade acrylic paint applied to the manufacturer’s specifications.

Flashings & Capping
In general, flashings shall be designed and installed in accordance with SAA-HB39 1997 - Installation code for metal roofing and wall cladding. All flashings are supplied by others.
System Selection

### SYSTEM SPECIFICATIONS

**Gyprock Boundary Wall System – Timber Frame – Single Wall**

![Diagram of wall system](image)

- **Cemintel 6mm Cladding Sheet.**
- **Bradford Enviroseal Proctorwrap RW.**
- **1 x 16mm Gyprock Fyrchek MR to external side.**
- **Timber studs at 600mm centres.**
- **Cavity insulation as per system table.**
- **Lining material as per system table to internal side.**

#### SYSTEM SPECIFICATION

<table>
<thead>
<tr>
<th>FRL Report/Opinion</th>
<th>SYSTEM N°</th>
<th>WALL LININGS</th>
<th>STUD DEPTH mm</th>
<th>THERMAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CSR 5905</strong></td>
<td></td>
<td>EXTERNAL WALL SIDE • 1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs)</td>
<td>90</td>
<td>(a) 90 Gold Batts 2.0</td>
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<tr>
<td>60/60/60 (from outside)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>FAR 2303</td>
<td></td>
<td>• 1 x 6mm Cemintel Cladding Sheet.</td>
<td></td>
<td>(b) 90 Gold Batts 2.5</td>
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<tr>
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<td></td>
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<tr>
<td>FAR 2303</td>
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<td></td>
<td>INTERNAL WALL SIDE • 2 x 10mm Gyprock Sensitive Plasterboard.</td>
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<td>Wall Thickness mm</td>
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</tr>
<tr>
<td>60/60/60 (from outside)</td>
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</tr>
<tr>
<td>FAR 2303</td>
<td></td>
<td>• 1 x 6mm Cemintel Cladding Sheet.</td>
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<td>(b) 90 Gold Batts 2.5</td>
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<td></td>
<td></td>
<td>INTERNAL WALL SIDE • 2 x 10mm Gyprock Aquachek Plasterboard.</td>
<td></td>
<td>Wall Thickness mm</td>
</tr>
</tbody>
</table>

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## SYSTEM SPECIFICATIONS

### Gyprock Boundary Wall System – Timber Frame – Single Wall

<table>
<thead>
<tr>
<th>SYSTEM N°</th>
<th>WALL LININGS</th>
<th>STUD DEPTH mm</th>
<th>90</th>
<th>THERMAL</th>
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<tbody>
<tr>
<td>CSR 5920</td>
<td>60/60/60 (from outside)</td>
<td>1 x 16mm Gyprock Fyrchek MR Plasterboard (against studs)</td>
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<td>1 x 6mm Cemintel Cladding Sheet.</td>
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<td></td>
<td>1 x 6mm Cemintel Cladding Sheet.</td>
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<td>Wall Thickness mm</td>
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</table>

- [Image of Gyprock Boundary Wall System – Timber Frame – Single Wall]
### System Specifications

**Gyprock Boundary Wall System – Timber Frame - Double Wall**

<table>
<thead>
<tr>
<th>FRL Report/Opinion</th>
<th>SYSTEM N°</th>
<th>WALL LININGS</th>
<th>STUD DEPTH mm</th>
<th>BUILDING GAP mm</th>
<th>CAVITY INFILL</th>
<th>RW / Rw+Ctr</th>
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<tr>
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<td>Wall Thickness mm</td>
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<td>304</td>
<td>324</td>
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<td>69/53</td>
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<td>1 x 6mm Cemintel Cladding Sheet.</td>
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<td></td>
</tr>
<tr>
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<td>INTERNAL WALL SIDE</td>
<td>2 x 10mm Gyprock Aquachek Plasterboard.</td>
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<td></td>
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<tr>
<td></td>
<td>Wall Thickness mm</td>
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<td>324</td>
<td>344</td>
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<td>CSR 5950</td>
<td>EXTERNAL WALL SIDE</td>
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<tr>
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<td>1 x 13mm Gyprock Aquachek Plasterboard.</td>
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<td>330</td>
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<td>66/49</td>
<td>67/51</td>
<td>68/52</td>
</tr>
<tr>
<td></td>
<td>(): 90 Gold Batts 2.5</td>
<td>1 x 6mm Cemintel Cladding Sheet.</td>
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<tr>
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<td>INTERNAL WALL SIDE</td>
<td>1 x 13mm Gyprock Fyrchek Plasterboard.</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Wall Thickness mm</td>
<td>270</td>
<td>290</td>
<td>310</td>
<td>330</td>
<td></td>
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</table>
Module Preparation

- Framing modules can be prepared on-site or prefabricated off-site in a controlled manufacturing environment. Modules can also be pre-fabricated by truss/framing manufacturers, transported and then lined externally on-site prior to erection.
- Modules have been designed with simplified junctions that allow relatively easy assembly, with the ability to accommodate minor framing deviations and construction tolerances.
- Internal wall linings are installed in the traditional manner once the building has been enclosed.
- Internal wall system linings are non-fire grade, simplifying installation and ongoing maintenance.

Figure 4: Gyprock Boundary Wall Module Assembly Overview
Figure 5: Gyprock Boundary Wall Module – Shown From Outside With Framing To Accommodate Floor Connection

Module length as required

- Gyprock Fyrchek MR plasterboard fixed at 600mm max. centres to edges and field
- Supplementary fire protection can be either 1 layer 16mm Gyprock fire grade plasterboard or 75mm Bradford Fibertex 450
- Additional framing for fixing internal linings
- Noggings behind horizontal joints of Gyprock Fyrchek MR plasterboard
- studs at 600mm max. centres

NOTE: Where Fyrchek MR is installed vertically, offset vertical joints in cladding layer by one stud spacing

Bradford insulation to system specifications

Bradford Enviroseal RW Wall Wrap overlapped with taped joins

Cemintel Cladding Sheets installed vertically with H-jointer or sealant filled joints

Exterior sealant to fill gap between cladding sheets and Z-flashings

Gyprock Fire Mastic to fill gap between Fyrchek MR sheets and Z-flashings

Table 3: Stud & Fastener Spacing – Gyprock Boundary Wall System

<table>
<thead>
<tr>
<th>Wind Classification</th>
<th>Stud Spacing (mm)</th>
<th>Fastener Spacing for Gyprock Fyrchek MR Plasterboard</th>
<th>Fastener Spacing for 6mm Cemintel Cladding Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>600</td>
<td>600mm max. to edges and field 10-16mm from sheet edges</td>
<td>300mm max. to edges and field 12mm min. from sheet edges</td>
</tr>
<tr>
<td>N2</td>
<td>600</td>
<td></td>
<td>12mm min. from sheet edges</td>
</tr>
<tr>
<td>N3/C1</td>
<td>450</td>
<td></td>
<td>50mm min. from sheet corners</td>
</tr>
<tr>
<td>N4/C2</td>
<td>300</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Supplementary Fire Zone Protection

The internal (room) wall linings form part of the system fire rating. In areas where linings are omitted, additional treatment is necessary. These areas may occur at the junction with floor framing, with roof framing, in the roof space, and at service penetrations. Treatment options are:

1. Addition of 75mm Bradford Fibertex 450 rockwool within the supplementary fire zone. Fit the batts tightly within surrounding framing.

2. Addition of a 16mm Fyrchek or Fyrchek MR plasterboard layer, laminated to the module Fyrchek MR lining within the supplementary fire zone. Fit closely to surrounding frame and fill any gaps between 3mm and 10mm with Gyprock Fire Mastic. Fix strips with 25mm coarse thread screws at 400mm maximum centres at the perimeter and field of each strip. Minimum 4 screws per strip.

Refer to Figure 7 and Figure 8 for details.
Installation Procedures

Constuction Of The Wall Module

Step 1: Frame Fabrication
Wall frame modules can be built on-site or be prefabricated and delivered to site. They can be built to any length to suit lifting or tilting into position. Modules should be designed based on the project stud centres and available Cemintel Cladding Sheet lengths. Studs are to be at 600mm max. centres.

Where Fyrchek MR is installed horizontally, noggings must be installed in-line and to align with the horizontal Fyrchek MR plasterboard sheet joint.

Where floor framing is to be accommodated, an additional row of in-line noggings is to be positioned behind the top edge of the internal linings.

Step 2: Bracing Straps & Lifting Points
Install diagonal bracing straps to the inside face of the frame when required by project specifications.

Install lifting points or similar to the top plate where lifting equipment is to be used. These must not interfere with any module components, and should be removable after the module is erected.

Step 3: Install Z-Flashings
Cut Z-flashings to the overall width and height of the framing. Turn the framing over and fix Z-flashings to outside of the framing at the bottom plate and to one side. Overlap the Z-flashings at the junction, and align the end of the flashing, and the vertical flange of the flashing, with the edge of the framing. Fix with 40mm clouts at 600mm centres.

A custom flashing may be required at each end of a wall.
Step 4: Temporary Base Block Installation
Install temporary timber blocks to protect base Z-flashing during module handling/lifting.

Step 5: Install Fyrchek MR Plasterboard
Cut Fyrchek MR lining to size allowing for a gap at the module perimeter edges of 6 – 10mm. Install a single layer of 16mm Fyrchek MR and fix with nails or screws at 600 x 600mm max. centres to perimeter and field. Fix any butt joints with screws at 200mm maximum centres. Joints must be fully backed by studs or noggings.

Step 6: Seal Fyrchek MR Plasterboard Joints
Using Gyprock Fire Mastic, fill any gap (maximum 3mm width) and cover joint to at least 2mm thickness and 30mm width.

Step 7: Install Wall Wrap
Trim wall wrap to the extent of the framing and fix with screws or staples to the frame. Fasteners to be at 600mm maximum centres to studs and perimeters. Overlap sheets and tape at joints.

Note: Temporary tape may be used to hold wall wrap in place whilst trimming to size and fixing.

Step 8: Caulk Fyrchek MR Plasterboard
Fold the excess wall wrap inwards and caulk between the Gyprock Fyrchek MR and the Z-flashings with Gyprock Fire Mastic. Fill to the depth of plasterboard but do not overfill.
Step 9: Install Cladding Sheet
6mm Cemintel Cladding Sheets are to be installed with vertical joints. Trim the sheets so as to leave a nominal 6 – 8mm gap at module perimeter edges. Packers may assist in maintaining the perimeter gap.

All sheet joints must coincide with studs. Sheet joints may be finished with a PVC H-mould or as a 6-10mm width sealant filled joint. For sealed sheet joints, use Expresswall Backing Strip with bond-breaker tape behind the joint.

Where Fyrchek MR is installed vertically, sheet joints in the Cemintel Cladding Sheets must be offset from the plasterboard joints by one stud spacing.

Fix sheets with 40mm clouts to top and bottom plates and all studs at 300mm max. centres, 50mm min. from corners and 12mm min. from sheet edges.

Step 10: Caulk Cladding Sheet & Apply Paint Finish
Caulk between the Cemintel Cladding Sheets and the Z-flashing with exterior grade sealant for the full depth of the sheet. When applicable, fill the sheet joints with exterior grade sealant, and allow to dry.

Apply appropriate exterior grade paint finish, and allow to dry.

Step 11: Installation Of Boundary Wall End Module
Remove any protective blocking from the base and side of the module at an appropriate time during the installation procedure.

- Ensure any custom flashings that may be required at the end of the wall have been fitted (where appropriate).
- Apply a continuous bead of sealant to the slab or top surface of the wall plate, about 5mm from the outer edge.
- Lift or tilt the panel onto the slab/plate and sealant so that the bottom Z-flashing flange aligns closely with the vertical slab edge or outer edge of top plate. Modules with exterior linings installed weigh approximately 30kg/m².
- Align and plumb the module, then fix the bottom plate to the slab or framing below to project specifications.
- Install appropriate temporary bracing to project specifications.

Step 12: Placement of Subsequent Boundary Wall Modules
Where the module is to be butted up to an adjacent module, apply a bead of Gyprock Fire Mastic to the vertical edge of the plasterboard on the incoming module. The bead should be sufficient to fill the joint when modules are tightly butted together.

Caulk the cladding sheet to Z-flashing joints with exterior grade sealant
• Allowing 10 – 20mm clearance to adjacent panel and Z-flashing, lift or tilt the panel onto the slab/plate and sealant as described previously.

Step 13: Vertical Joint Between Modules (Plan View)
• Align and plumb the module, then drill and fit bolts through the adjoining module studs at 600mm max. from top and bottom of the module. Use the joining bolts or clamps to draw the panel into position.
• Fix the bottom plate to the slab or framing below to project specifications.
• Install appropriate temporary bracing to project specifications.

Step 14: Installation Of Upper Storey Modules (Horizontal Joint Side Elevation View)
• On completion of a lower storey, install upper level modules as per ground floor methods.
• Prior to landing the upper module, apply a continuous bead of Gyprock Fire Mastic to the top edge of the lower module plasterboard. Apply sufficient sealant to fill the gap when the modules are butted closely together.

Step 15: Installation Of Supplementary Fire Protection
Installation of fire grade plasterboard or rockwool to supplementary fire zones must be completed before accessibility is lost. This could occur where floor and roof framing is connected to the Boundary Wall. Refer to Figure 7 and Figure 8.

Step 16: Installation Of Interior Linings
Interior wall linings for the Boundary Wall system should be installed after the building is substantially enclosed and protected from the weather. Refer to Figure 9, Figure 10 and Figure 11.
**Fixing Specifications**

- Framing at 600mm maximum centres.
- Wind loads up to N5/C1.

<table>
<thead>
<tr>
<th>Location</th>
<th>Fixing &amp; Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field</td>
<td>Adhesive Daubs at 250mm max. centres and 200mm min. from fastener points</td>
</tr>
<tr>
<td>Sheet</td>
<td>Adhesive Daubs across board</td>
</tr>
<tr>
<td>Width</td>
<td>3 daubs</td>
</tr>
<tr>
<td>900mm</td>
<td>4 daubs</td>
</tr>
<tr>
<td>1200mm</td>
<td>5 daubs</td>
</tr>
<tr>
<td>1350mm</td>
<td></td>
</tr>
<tr>
<td>Recessed Edges</td>
<td>Nail or screw at each stud</td>
</tr>
<tr>
<td>Butt Joints off-studs</td>
<td>Centre between framing and back-block with adhesive only</td>
</tr>
<tr>
<td>Butt Joints on-studs</td>
<td>Nails at 150mm max. cts or Screws at 200mm max. cts</td>
</tr>
<tr>
<td>Corners &amp; Openings</td>
<td>Nails or screws at 300mm max. cts</td>
</tr>
</tbody>
</table>

**Temporary fastener through block at every second stud**

- Form butt joints off-studs or on-studs as required by Level of Finish (back-block butt joints formed between studs).
- Stagger butt joints on adjacent sheets by one stud space minimum.
- Bradford Insulation to system specification.
- Gyprock Acrylic Stud Adhesive.
- Gyprock Boundary Wall module with fire grade plasterboard and cladding.
- One layer of Gyprock plasterboard to wall framing as per system specification.
- Plasterboard 6-10mm clear of floor.
- Fasteners at 10 to 16mm from sheet edges.

<table>
<thead>
<tr>
<th>Location</th>
<th>Fixing &amp; Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field</td>
<td>Adhesive Daubs at 250mm max. centres and 200mm min. from fastener points</td>
</tr>
<tr>
<td>Sheet</td>
<td>Adhesive Daubs across board</td>
</tr>
<tr>
<td>Width</td>
<td>3 daubs</td>
</tr>
<tr>
<td>900mm</td>
<td>4 daubs</td>
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<tr>
<td>1200mm</td>
<td>5 daubs</td>
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<tr>
<td>Recessed Edges</td>
<td>Nail or screw at each stud</td>
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<tr>
<td>Butt Joints off-studs</td>
<td>Centre between framing and back-block with adhesive only</td>
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<tr>
<td>Butt Joints on-studs</td>
<td>Nails at 150mm max. cts or Screws at 200mm max. cts</td>
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<tr>
<td>Corners &amp; Openings</td>
<td>Nails or screws at 300mm max. cts</td>
</tr>
</tbody>
</table>

**Form butt joints off-studs or on-studs as required by Level of Finish (back-block butt joints formed between studs).**

**Stagger butt joints on adjacent sheets by one stud space minimum.**

**Plaqueboard 6-10mm clear of floor.**

**Temporary fastener through block at every second stud.**

**Nails or Screws (refer to table).**

**Adhesive daubs (refer to table).**

**Adhesive daubs (refer to table).**

**Field**

- Adhesive daubs at 250mm max. centres and 200mm min. from fastener points
- Adhesive daubs across board
- 3 daubs
- 4 daubs
- 5 daubs

**Sheet**

- 900mm
- 1200mm
- 1350mm

**Recessed Edges**

- Nail or screw at each stud

**Butt Joints off-studs**

- Centre between framing and back-block with adhesive only

**Butt Joints on-studs**

- Nails at 150mm max. cts or Screws at 200mm max. cts

**Corners & Openings**

- Nails or screws at 300mm max. cts
Figure 10: Internal Plasterboard Fixing – 2 Layer – Horizontal & Vertical Sheeting – Fastener/Adhesive+Fastener Fixing – Non-Tiled Areas

- **Gyprock Boundary Wall module** with fire grade plasterboard and cladding to exterior side
- **Two layers of Gyprock plasterboard** to interior side of wall framing as per system specification
- Form butt joints off-studs or on-studs as required by Level of Finish (use laminating screws for off-stud joints)
- Stagger butt joints on adjacent sheets by one stud space minimum
- Bradford Insulation to system specification
- Gyprock Acrylic Stud
- **Plasterboard 6-10mm clear of floor**

<table>
<thead>
<tr>
<th>Fixing Specifications</th>
<th>Framing at 600mm maximum centres.</th>
<th>Wind loads up to NS/C1</th>
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<td>Refer to Components</td>
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<td>Fixing &amp; Spacing</td>
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<tr>
<td>Recessed Edges, Field, Corners</td>
<td>Screws at 300mm max. centres on framing</td>
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</tr>
<tr>
<td><strong>2nd Layer (horizontal)</strong></td>
<td>Fixing &amp; Spacing</td>
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</tr>
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<td></td>
</tr>
<tr>
<td>Width</td>
<td>Adhesive Daubs across board</td>
<td></td>
</tr>
<tr>
<td>900mm</td>
<td>3 daubs</td>
<td></td>
</tr>
<tr>
<td>1200mm</td>
<td>4 daubs</td>
<td></td>
</tr>
<tr>
<td>1350mm</td>
<td>5 daubs</td>
<td></td>
</tr>
<tr>
<td>Recessed Edges</td>
<td>Nail or screw at each stud</td>
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</tr>
<tr>
<td>Butt Joints off-studs</td>
<td>Centre between framing laminate at 200mm max. centres</td>
<td></td>
</tr>
<tr>
<td>Butt Joints on-studs</td>
<td>Nails at 150mm max. cts or Screws at 200mm max. cts</td>
<td></td>
</tr>
<tr>
<td>Corners &amp; Openings</td>
<td>Nails or screws at 300mm max. cts</td>
<td></td>
</tr>
</tbody>
</table>

**Fixing Specifications**

- **1st Layer (vertical)**
  - **Recessed Edges, Field, Corners**: Screws at 300mm max. centres on framing
  - **Fixing & Spacing**
    - **Field**: Adhesive Daubs at 250mm max. centres and 200mm min. from fastener points
    - **Width**: Daubs across board
      - 900mm: 3 daubs
      - 1200mm: 4 daubs
      - 1350mm: 5 daubs
    - **Recessed Edges**: Nail or screw at each stud
    - **Butt Joints off-studs**: Centre between framing laminate at 200mm max. centres
      - Nails at 150mm max. cts or Screws at 200mm max. cts
    - **Butt Joints on-studs**: Centre between framing laminate at 200mm max. centres
      - Nails at 150mm max. cts or Screws at 200mm max. cts
    - **Corners & Openings**: Nails or screws at 300mm max. cts

- **2nd Layer (horizontal)**
  - **Fixing & Spacing**
    - **Field**: Adhesive Daubs at 250mm max. centres and 200mm min. from fastener points
    - **Width**: Daubs across board
      - 900mm: 3 daubs
      - 1200mm: 4 daubs
      - 1350mm: 5 daubs
    - **Recessed Edges**: Nail or screw at each stud
    - **Butt Joints off-studs**: Centre between framing laminate at 200mm max. centres
      - Nails at 150mm max. cts or Screws at 200mm max. cts
    - **Butt Joints on-studs**: Centre between framing laminate at 200mm max. centres
      - Nails at 150mm max. cts or Screws at 200mm max. cts
    - **Corners & Openings**: Nails or screws at 300mm max. cts

- **Fasteners at 10 to 16mm from sheet edges**

- **Temporary fastener through block at every second stud**
- **Stagger butt joints on adjacent sheets by one stud space minimum**
- **Bradford Insulation to system specification**
- **Gyprock Acrylic Stud Adhesive**
- **Plasterboard 6-10mm clear of floor**
- **Gyprock Boundary Wall** with fire grade plasterboard and cladding to exterior side
- **Two layers of Gyprock plasterboard** to interior side of wall framing as per system specification
- Form butt joints off-studs or on-studs as required by Level of Finish (use laminating screws for off-stud joints)
- Stagger butt joints on adjacent sheets by one stud space minimum
Figure 11: Internal Plasterboard Fixing – 1 Or 2 Layer – Horizontal & Vertical Sheeting – Fastener Fixing – Tiled Or Non-Tiled Areas – NOTE: For single layer plasterboard, use 2nd layer fixing specifications

<table>
<thead>
<tr>
<th>Fixing Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Framing at 600mm maximum centres.</td>
</tr>
<tr>
<td>Wind loads up to N5/C1</td>
</tr>
<tr>
<td>Nails/Screws</td>
</tr>
</tbody>
</table>

### 1st Layer (vertical)

<table>
<thead>
<tr>
<th>Location</th>
<th>Fixing &amp; Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recessed Edges, Field, Corners</td>
<td>Screws at 300mm max. centres on framing</td>
</tr>
</tbody>
</table>

### 2nd Layer (horizontal)

<table>
<thead>
<tr>
<th>Location</th>
<th>Fixing &amp; Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-TILED AREAS</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>2 Nails 50mm apart or 1 screw at 400mm max. centres</td>
</tr>
<tr>
<td>Recessed Edges</td>
<td>1 Nail or 1 Screw at each stud</td>
</tr>
<tr>
<td>Butt Joints off-studs</td>
<td>Centre between framing and back-block with adhesive only</td>
</tr>
<tr>
<td>Butt Joints on-studs</td>
<td>Nails at 150mm max. cts or Screws at 200mm max. cts</td>
</tr>
<tr>
<td>Corners &amp; Openings</td>
<td>Nails or screws at 300mm max. centres</td>
</tr>
</tbody>
</table>

<p>| TILED AREAS up to 12.5kg/m² |</p>
<table>
<thead>
<tr>
<th>Location</th>
<th>Fixing &amp; Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field</td>
<td>1 Nail or 1 Screw 200mm max. centres</td>
</tr>
<tr>
<td>Recessed Edges</td>
<td>1 Nail or 1 Screw at each stud</td>
</tr>
<tr>
<td>Butt Joints on-stud</td>
<td>1 Nail or 1 Screw at 150mm max. cts and aligned</td>
</tr>
<tr>
<td>Corners &amp; Openings</td>
<td>Screws at 150mm max. centres</td>
</tr>
</tbody>
</table>

<p>| TILED AREAS up to 32kg/m² |</p>
<table>
<thead>
<tr>
<th>Location</th>
<th>Fixing &amp; Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field</td>
<td>1 Nail or 1 Screw 100mm max. centres</td>
</tr>
<tr>
<td>Recessed Edges</td>
<td>1 Nail or 1 Screw at each stud</td>
</tr>
<tr>
<td>Butt Joints on-stud</td>
<td>1 Nail or 1 Screw at 100mm max. cts and aligned</td>
</tr>
<tr>
<td>Corners &amp; Openings</td>
<td>Screws at 100mm max. centres</td>
</tr>
</tbody>
</table>
Construction Details

Connection details for supported floor and roof framing is indicative only. Alternative methods of attachment may also be used.

Figure 12: Supplementary Fire Protection At Floor Zone
- Bolt module 'A' and module 'B' together
- Existing structure
- Required noggings for support of internal linings
- Gyprock Boundary Wall module 'B'
- System insulation
- Waling plate
- Required acoustic insulation 75mm min. Bradford Gold batts
- Gyprock internal lining as per system table
- Gyprock Boundary Wall module 'A'
- Bradford Fibertex 450 or 1 x 16mm laminated Gyprock Pyrocheck or Fyrchek MR plasterboard in supplementary fire zone (areas with no internal lining)
- Boundary line
- Gypsum internal lining as per system table
- Fire rated masonry wall
- Gyprock Boundary Wall module

Figure 13: Base Construction At Stepped Slab
- System cavity 20mm min.
- Boundary line
- Existing Boundary Wall system
- Fixings to project specifications
- Slab
- Damp-course installed over slab
- Weather resistant sealant over damp-course
- Termite barrier where required
- Slab
- System cavity 20mm min.
- Boundary line
- Existing Boundary Wall system
- Gypsum internal lining as per system requirements
- Bradford insulation as per system requirements
- Gypsum Boundary Wall module

Figure 14: Dwarf Wall Base
- Figure 14: Dwarf Wall Base
- System cavity 20mm min.
- Boundary line
- Gypsum Boundary Wall module
- Gypsum internal lining as per system table
- Bradford insulation as per system requirements
- Additional fire blocking
- Waling plate
- Required acoustic insulation 75mm min. Bradford Gold batts
- Gyprock Boundary Wall module
- Bradford insulation as per system requirements
- Gyprock Fire Mastic to fill void under Z-flashing
- Weather resistant sealant under Z-flashing

Figure 15: Stub Wall Base
- System cavity 20mm min.
- Boundary line
- Gypsum Boundary Wall module
- Gypsum internal lining as per system requirements
- Bradford insulation as per system requirements
- Additional fire blocking
- Required acoustic insulation 75mm min. Bradford Gold batts and saddles
- Gyprock Boundary Wall module to side of stub wall and bearers
- Bradford Fibertex 450 Rockwool or 1x16mm Fyrchek MR to stub wall
- Damp-course and weather proof sealant under Z-flashing
- Gypsum Boundary Wall module
- Gyprock Fire Mastic to fill void under Z-flashing
- Gypsum Boundary Wall module

Gyprock® Boundary Wall Design & Installation 25
Figure 16: Supplementary Fire Protection At Parapet

- Parapet capping
- System cavity 20mm min.
- Base board
- Flashing
- Roof truss
- Box gutter
- Roofing
- Gypsum internal lining as per system specification
- Bradford insulation as per system specification
- Additional framing for lining fixing
- Capping options

Figure 17: Supplementary Fire Protection At Roof Line

- Roofing
- Flashing
- Box gutter
- Gutter base board
- Roof truss
- System cavity 20mm min.
- Additional blocking
- Additional framing for lining fixing
- Bradford insulation as per system specification
- Gypsum internal lining as per system specification
- Required acoustic insulation 75mm min. Bradford Gold batts

Figure 18: Supplementary Fire Protection At Parapet

- System cavity 20mm min.
- Boundary line
- Cemintel Cladding Sheet
- Bradford Fibertex 450
- Roofing
- Flashing
- Existing structure
- Bradford insulation as per system specification
- Gypsum internal lining as per system specification
- System cavity 20mm min.
- Boundary line

Figure 19: Supplementary Fire Protection At Transition From Single Storey To Two Storey

- Flashing fixed and sealed to building
- Roofing cap
- Ridge capping
- Bradford Fibertex 450 in supplementary fire zone
- Additional blocking
- System cavity 20mm min.
- Gypsum internal lining as per system specification
- Bradford insulation as per system specification
- Required acoustic insulation 75mm min. Bradford Gold batts
- Gypsum Party Wall Sealer
- Roof truss
Figure 20: Nib Wall Construction In Boundary Wall – Plan View

- 60mm min. 20mm Custom Z-flashing
- Boundary line
- Fill end gap with Gyprock Fire Mastic
- 1 x 16mm Gyproc Fyrchek or Fyrchek MR plasterboard between framing and screw laminated plasterboard or 75mm Bradford Fibertex 450 for full height of wall
- Wall wrap and external cladding 10mm nom.
- Bond breaker and weather resistant sealant
- Custom wall end Z-flashings, lapped, with bond breaker tape to back face and filled with weather resistant sealant
- Existing structure
- Gyprock Boundary Wall module
- Internal linings
- Additional blocking
- Bradford insulation as per system specification
- Gyprock internal lining as per system table
- System cavity 20mm min.

Figure 21: Encapsulated Column In Boundary Wall – Plan And Elevation View

- Boundary line
- Existing structure
- System cavity 20mm min.
- Additional studs at junction
- Additional blocking required
- Bradford insulation as per system specification
- Gyprock internal lining as per system table
- System cavity 20mm min.

Figure 22: T-junction At Boundary Wall And Internal Wall – Plan View

- Boundary line
- Existing structure
- System cavity 20mm min.
- Additional studs at corner as part of Gyprock Boundary Wall module
- Gyprock Boundary Wall module
- Bradford insulation as per system specification
- Gyprock internal lining as per system table
- System cavity 20mm min.

Figure 23: Boundary Wall End Framing And Flashing – Plan View

- Boundary line
- Existing structure
- System cavity 20mm min.
- 60mm min. 20mm Custom Z-flashing
- Boundary line
- System cavity 20mm min.
- Addtional stud at corner as part of Gyprock Boundary Wall module
- External wall system
- Custom Z-flashing
- Bradford insulation as per system specification
- Gyprock Boundary Wall module
- Bradford insulation as per system specification
- Gyprock internal lining as per system table
- System cavity 20mm min.

Figure 24: Boundary Wall End Framing And Flashing – Plan View

- Boundary line
- Fixings to project engineer’s specifications
- Other measurements to project requirements
- Typical custom end flashing
- Boundary line
- Typical custom end flashing
- Boundary line
- 60mm min. Custom Z-flashing
- Boundary line
- Custom flashing fixed to end stud
- Additional stud at corner as part of Gyprock Boundary Wall module
- External cladding system on battens
- Bradford insulation as per system specification
- Gyprock Boundary Wall module
- Bradford insulation as per system specification
- Gyprock internal lining as per system table
- System cavity 20mm min.

Gyprock® Boundary Wall Design & Installation 27
Health & Safety
Information on any known health risks of our products and how to handle them safely is on their package and/or the documentation accompanying them.

Additional information is listed in the Safety Data sheet.
To obtain a copy, telephone 1300 306 556 or visit www.gyprock.com.au.

Warranty
Gyprock products are designed to achieve optimal performance when part of a CSR integrated system.

CSR Building Products Limited warrants its Australian made Gyprock products to remain free of defects in material and manufacture for the usual lifetime of the product (25 years).

CSR warrants its International Alliance Gyprock products to remain free of defects in material and manufacture for 7 years.

For details on our product warranty, please visit www.gyprock.com.au, or contact us on 1300 306 556.

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