



Premier

Building Products

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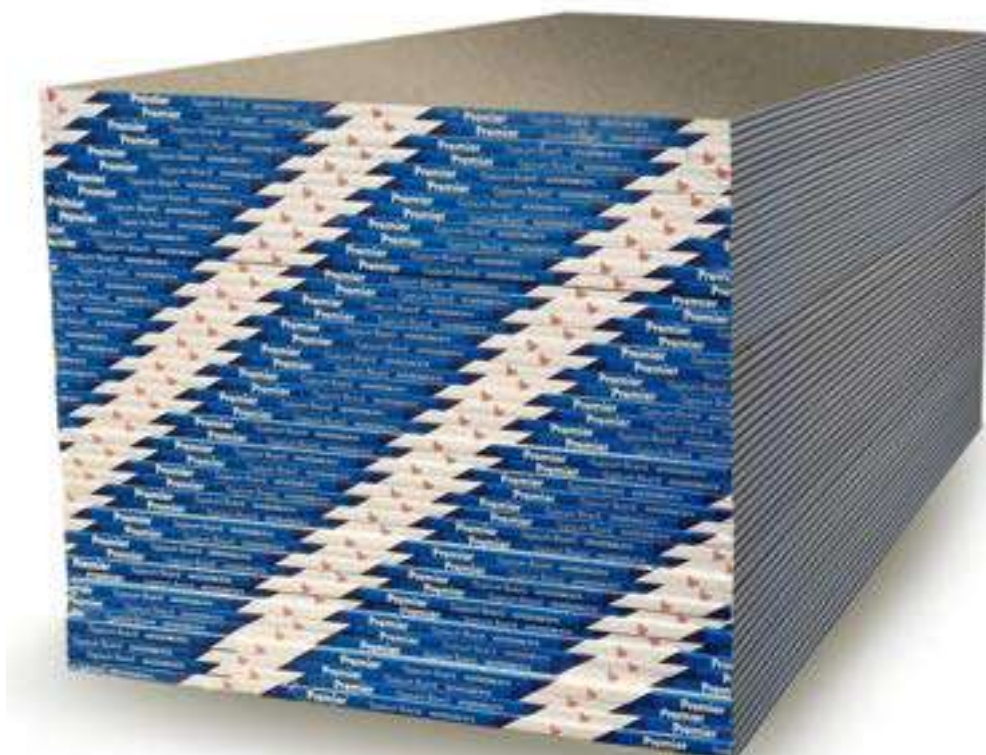
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ABOUT PREMIER BUILDING PRODUCTS GYPSUM BOARD

AUTHOR: James Li
DATE: 01/07/2024
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PREPARED FOR PREMIER BUILDING PRODUCTS



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1 PURPOSE

This engineering judgement report, produced by Oculus Architectural Engineering Limited is an evaluation of the following products

- 10mm & 13 mm Standard Gypsum Board by Premium Building Products,
- 10mm & 13mm Water Resistant Gypsum Board by Premium Building Products

And the product's ability to fulfil the following performance requirements of the New Zealand Building Code (NZBC) based on the available international performance documentation:

- B1 Structure,
- B2 Durability,
- E3 Interior Moisture



2 PRODUCTS

The Premier Building Products Ltd. (PBP) Standard and Water-Resistant Gypsum Boards are a range of products incorporating 10 mm, 13 mm thick sheets of gypsum board of various sizes used for general building and construction. The products are suited for residential housing, light commercial and commercial buildings.

Oculus reviewed the following products

- **10mm & 13mm Standard Gypsum Board**
 - The Premier Building Products 10 & 13 mm Standard Gypsum Boards are a new alternative range for the New Zealand market, used typically for general internal linings in buildings.
- **10mm & 13mm Water Resistent Gypsum Board**
 - The Premier Building Products 10 & 13 mm Water-Resistant Gypsum Boards are a new alternative range for the New Zealand market, used typically for wet-area internal linings in buildings.



3 PERFORMANCE REQUIREMENTS

The NZBC Clauses and applicable Performance Requirements included within this review’s scope are listed in Table 3 below. Demonstration that a product or assembly can meet the Performance Requirements of the clause ensures that the Functional Requirement and the Objective of the clause will be met.

Table 1: NZBC, Functional Requirements, and Applicable Performance Requirements

NZBC	Functional Requirement	Applicable Performance Requirements within the scope of review
B1 Structure	B1.2 <i>Buildings, building elements, and site work</i> shall withstand the combination of loads that they are likely to experience during <i>construction or alteration</i> and throughout their lives.	B1.3.2 and B 1.3.3 a), j)
B2 Durability	B2.2 <i>Building materials, components, and construction methods</i> shall be sufficiently durable to ensure that the <i>building</i> , without reconstruction or major renovation, satisfies the other functional requirements of this code throughout the life of the <i>building</i> .	B2.3.1 b)
E3 Internal Moisture	E3.2 <i>Buildings</i> must be constructed to avoid the likelihood of— (a) fungal growth or the accumulation of <i>contaminants</i> on linings and other <i>building elements</i> ; and (b) free water overflow penetrating to an adjoining <i>household unit</i> ; and (c) damage to <i>building elements</i> caused by the presence of moisture.	E3.3.4, E3.3.5, E3.3.6



4 COMPLIANCE PATHWAY

4.1 Compliance Documentation Provided:

Product	Documentation Provided:
ALL	<ul style="list-style-type: none"> ▪ BPIR Disclosure Information ▪ Premier Building Products Standard and Water-Resistant Gypsum Board Product Range – Technical Manual with Drawings ▪ BEAL Appraisal Certificate ▪ BEAL #2230: Density Tests ▪ BEAL #2230-1: Measure of Fixing Shear Resistance
10mm Standard Gypsum Board	<ul style="list-style-type: none"> ▪ Intertek AS/NZS 2588 Report #220415166GZU-002 Dated 11/07/2022 ▪ BEAL #2230-3: P21 Panel Bracing Capacity Testing
13mm Standard Gypsum Board	<ul style="list-style-type: none"> ▪ Intertek AS/NZS 2588 Report #220628009SHF-002 Dated 15/07/2022
10mm Water Resistant Gypsum Board	<ul style="list-style-type: none"> ▪ Intertek AS/NZS 2588 Report #220628009SHF-003 Dated 18/07/2022
13mm Water Resistant Gypsum Board	<ul style="list-style-type: none"> ▪ Intertek AS/NZS 2588 Report #220628009SHF-004 Dated 18/07/2022

4.2 Method of Compliance with Applicable Performance Requirements

NZBC Clause	Method of Compliance with Applicable Performance Requirements
B1 Structure	<p>Product Certification and Alternative Solution:</p> <ul style="list-style-type: none"> ▪ Minimum density confirmed by testing (BEAL 2230) ▪ The gypsum board products were successfully tested to AS/NZS 2588:2018 – Gypsum Plasterboard, referenced in the various Intertek testing reports, to be used in domestic, commercial and industrial applications. <ul style="list-style-type: none"> ○ Testing comprised of product standard dimensions, bending strength, edge hardness, nail pull resistance, bond strength, and humidified deflection. ○ Water resistant product line was also subjected to water resistance and surface water resistance testing. ▪ Weight capacity for tiles: the 10mm and 13mm thick water-resistant line of products were tested for carrying capacity of tiles (BEAL #2230-1). The water-resistant gypsum boards were successfully tested to carry 26kg/m² and 240kg/m² for the 10mm and 13mm thick boards respectively. ▪ Use as a bracing element: The 10mm standard gypsum board was tested to BRANZ’s P21 Standard (BEAL #2230-3). The product may be used as a bracing element when subjected to the specified fixings and fixing spacings. The bracing ratings provided are as follows:



NZBC Clause Method of Compliance with Applicable Performance Requirements

Bracing elements with no HandiBrac® hold-down system, with bottom plate fixed as per NZS3604, can be used as a bracing element with the following bracing ratings:

Minimum length (m)	BU/m W	BU/m EQ
0.4	11.5	14.9
1.2	30.3	34.8

When the Gib HandiBrac® hold-down system is used in conjunction with 10mm PBP Standard Gypsum Board, it can be used as a bracing element with the following bracing ratings:

Minimum length (m)	BU/m W	BU/m EQ
1.2	75	64

- Gypsum board used in wet areas, e.g. behind shower or bath cannot be used as bracing elements due to reduced durability

B2 Durability

B2/VM1 and Product Certification:

Product has to comply to B2 2.3.1 b) which *applies to building elements where access or replacement involves the removal or alteration of other building elements. Examples are the replacement of services reticulation in wall cavities and skillion roofs, or of plant and hotwater cylinders built into roof spaces without adequately sized access openings. A 15 year durability is required.* When used as a bracing element, the building element is required to have a durability not less than 50 years.

Compliance is demonstrated by:

- As per B2/VM1, verification that the durability of a building element complies with B2.3.1 and B2.3.2 can be by proof of:
 - In-service history (Gypsum wall boards)
 - Gypsum board products used in wet areas, e.g. as an internal lining in a fully protected shower or bath with, will have a serviceable life of 15 years.
 - Gypsum board products when used as a general wall and ceiling lining, will have a serviceable life of at least 50 years
- Maintenance: The building must be maintained weathertight and all lining systems protected from internal and external moisture.

E3 Internal Moisture (Water-Resistant gypsum boards only)

Alternative Solution – Comparison with Acceptable Solution E3/AS1

- Water resistant gypsum board product, when used in an adequate design as part of a building interior as part of an assembly, may perform as per required by NZBC E3, and be used in a wet area as tested to AS/NZS 2588, where the product did not absorb over 5% of its weight in moisture after 2 hours.
- The product, when used in a proper building assembly system, is designed to operate in an internal environment where it is assumed to be heated, where any moisture subjected to the assembly is also subjected to drying.
- The products are designed to be used as wall and ceiling liners only where moisture can be drained downwards and not subject to ponding.



5 ASSUMPTIONS AND LIMITATIONS

The compliance potential set out in this report for the Premier Building Products gypsum boards has been evaluated using compliance documentation relevant to the proposed components and accessories. This report and any building consent resulting does not guarantee the building will achieve compliance with the New Zealand Building Code; only that it can achieve compliance as designed. Assumptions and limitations of the compliance potential set out in this report are described below.

- Products are installed in accordance with the manufacturer's instructions and are subject to limitations outlined therein.
- This assessment is solely based on the information provided in the preceding sections and in the attached supporting appendices. It is important to note this assessment should not be regarded as a comprehensive evaluation of the products' suitability for a specific project.
- Systems are intended for use on vertical walls, or slanted walls with adequate drainage measures. They are not suitable for applications where water may pool or pond. This includes locations of through wall flashings.
- Refer to the material data sheets and manufacturer's instructions with respect to compatibility between materials. Where data is unavailable, the designer must seek technical advice from the manufacturer, or their representative, and perform compatibility and adhesion testing prior to full application.



6 COMPLIANCE STATEMENT

Subject to the proposed design being constructed in accordance with the plans and specifications that accompany this report, Oculus Limited is satisfied on reasonable grounds that the PBP Gypsum Board products will meet the relevant provisions of the New Zealand Building Code. Oculus Limited request that a building consent is issued based on the documentation provided.

Prepared by:



James Li

Junior Building Enclosure Engineer
Oculus Architectural Engineering Ltd

Reviewed by:

Peter Raimondo

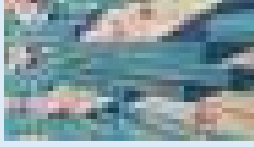



Associate Director (CPEng)
Oculus Architectural Engineering Ltd



Appendix a. GYPSUM BOARDS DOCUMENTATION

- BPIR Disclosure Information
- Premier Building Products Standard and Water-Resistant Gypsum Board Product Range – Technical Manual with Drawings
- BEAL Appraisal Certificate
- BEAL #2230: Density Tests
- BEAL #2230-1: Measure of Fixing Shear Resistance
- BEAL #2230-3: P21 Panel Bracing Capacity Testing
- Intertek AS/NZS 2588 Report #220415166GZU-002 Dated 11/07/2022
- Intertek AS/NZS 2588 Report #220628009SHF-002 Dated 15/07/2022
- Intertek AS/NZS 2588 Report #220628009SHF-003 Dated 18/07/2022
- Intertek AS/NZS 2588 Report #220628009SHF-004 Dated 18/07/2022



		Premier Gypsum Board	
		Standard	Water Resistant
PRODUCT NAME		Standard 10mm 2070101 - GYPSUM BOARD STANDARD 2400X1200x10mm 2070102 - GYPSUM BOARD STANDARD 2700X1200x10mm 2070103 - GYPSUM BOARD STANDARD 3000X1200x10mm Standard 13mm 2070104 - GYPSUM BOARD STANDARD 2400X1200x13mm 2070105 - GYPSUM BOARD STANDARD 2700X1200x13mm 2070106 - GYPSUM BOARD STANDARD 3000X1200x13mm	Water Resistant 10mm 2070107 - GYPSUM BOARD WATER RESISTANT 2400X1200x10mm 2070108 - GYPSUM BOARD WATER RESISTANT 2700X1200x10mm 2070109 - GYPSUM BOARD WATER RESISTANT 3000X1200x10mm Water Resistant 13mm 2070110 - GYPSUM BOARD WATER RESISTANT 2400X1200x13mm 2070111 - GYPSUM BOARD WATER RESISTANT 2700X1200x13mm 2070112 - GYPSUM BOARD WATER RESISTANT 3000X1200x13mm
PRODUCT DESCRIPTION		The Premier Building Products 10 & 13 mm Standard Gypsum Boards, are a new alternative range for the New Zealand market, used typically for general internal linings in buildings.	The Premier Building Products 10 & 13 mm Water-Resistant Gypsum Boards, are a new alternative range for the New Zealand market, used typically for wet-area internal linings in buildings.
PRODUCT USAGE		Comprise a sandwich of paper facings over a gypsum core, with two beveled edges along the long sides to allow for the creation of a monolithic surface ready for stopping to Level 1-5 and applying a decorative finish to walls and ceilings .	Comprise a sandwich of paper facings over a gypsum core, with two beveled edges along the long sides to allow for the creation of a monolithic surface ready for stopping to Level 1-5 and applying a decorative finish to the walls and ceilings of wet areas.
BRAND AND LOGO			
QR CODE		NA	NA
MANUFACTURER DETAIL	LEGAL NAME ADDRESS WEBSITE EMAIL NZBN#	OVERSEA SUPPLIER - FOR MORE INFORMATION, PLEASE CONTACT US	
IMPORTER DETAIL	LEAGA NAME ADDRESS WEBSITE EMAIL NZBN#	Premier Building Products Limited 17A Gabador Place, Mt. Wellington, Auckland, New Zealand www.premierbuildingproducts.co.nz sales@premierbuildingproducts.co.nz 9429047462977	Premier Building Products Limited 17A Gabador Place, Mt. Wellington, Auckland, New Zealand www.premierbuildingproducts.co.nz sales@premierbuildingproducts.co.nz 9429047462977
RELEVANT NZ STANDARD	AS/NZS:	AS/NZS:2588:2018	AS/NZS:2588:2018
TECHNICAL DESCRIPTION		The Premier Building Products (PBP) Standard Gypsum Boards are a range of standard paper faced gypsum products incorporating 10mm and 13mm thick boards of standard sizes used for general linings, suited for residential housing, light commercial and commercial buildings.	The Premier Building Products (PBP) Water-resistant Gypsum Boards are a range of standard paper faced gypsum products incorporating 10mm and 13mm thick boards of standard sizes used for wet area linings, suited for residential housing, light commercial and commercial buildings.
PRODUCT LIMITATION		The design and construction of all supporting substructures and framing shall be to the timber framing requirements of NZS3604 or NASH Standards 1 and 2 for light gauge steel framing, or to specific design, and are therefore the responsibility of the owner/ building designer. The Premier Building Products (PBP) Standard Gypsum Boards must be designed, used and installed in accordance with the technical manual. PBP Standard Gypsum Boards may be used as a bracing element when designed and installed in accordance with the technical manual.	The design and construction of all supporting substructures and framing shall be to the timber framing requirements of NZS3604 or NASH Standards 1 and 2 for light gauge steel framing, or to specific design, and are therefore the responsibility of the owner/ building designer. The Premier Building Products (PBP) Water-resistant Gypsum Boards must be designed, used and installed in accordance with the technical manual. PBP Water-resistant Gypsum Boards may be used as a bracing element when designed and installed in accordance with the technical manual. PBP Water-resistant Gypsum Boards require an NZBC compliant waterproofing membrane applied over them in order to meet the performance requirements of clauses E3.3.4, E3.3.5, and E3.3.6. PBP Water-resistant Gypsum Boards may be used as a substrate for ceramic tiles over a waterproof membrane when used in accordance with the technical manual.
PRODUCT DESIGN	EG. GS1	The design and construction of all supporting substructures and framing shall be to the timber framing requirements of NZS3604 or NASH Standards 1 and 2 for light gauge steel framing, or to specific design, and are therefore the responsibility of the owner/ building designer. PBP Standard Gypsum Boards must be designed and installed in accordance with the technical manual.	The design and construction of all supporting substructures and framing shall be to the timber framing requirements of NZS3604 or NASH Standards 1 and 2 for light gauge steel framing, or to specific design, and are therefore the responsibility of the owner/ building designer. PBP Standard Gypsum Boards must be designed and installed in accordance with the technical manual. PBP Water-resistant Gypsum Boards require an NZBC compliant waterproofing membrane applied over them in order to meet the performance requirements of clauses E3.3.4, E3.3.5, and E3.3.6.
MANUAL	TECHNICAL DATA MANUAL	 PBP GYPSUM BOARD Technical Manual v1.2 (1) conv (expired).pdf	 PBP GYPSUM BOARD Technical Manual v1.2 (1) conv (expired).pdf

<p>MAINTAINANCE</p>	<p>PBP Standard Gypsum Boards will not normally require maintenance. However, if damage occurs to the surface sections of the board may need to be repaired by re-stopping and finishing, or replacing sections.</p>	<p>PBP Water-resistant Gypsum Boards will not normally require maintenance. However, if damage occurs to the surface, sections of the board may need to be repaired by re-waterproofing, re-stopping and finishing, or replacing sections.</p>
<p>RELEVANT BUILDING CODE CLAUSES SECTION 26 BUILDING ACT 2004</p>	<p>B1.3.3(a) and (j) - Structure B2.3.1(b) - Durability E3.3.4, E3.3.5, and E3.3.6 - Internal Moisture F2.3.1 - Hazardous Building Materials</p>	<p>B1.3.3(a) and (j) - Structure B2.3.1(b) - Durability E3.3.4, E3.3.5, and E3.3.6 - Internal Moisture F2.3.1 - Hazardous Building Materials</p>
<p>STATEMENT ON HOW THE BUILDING PRODUCT IS EXPECTED TO CONTRIBUTE TO COMPLIANCE</p>	<p>B1.3.3(a) and (j) - Structure. Refer to BEAL Appraisal #IL2230 Section 8 B2.3.1(b) - Durability. Refer to BEAL Appraisal #IL2230 Section 8 E3.3.4, E3.3.5, and E3.3.6 - Internal Moisture. Refer to BEAL Appraisal #IL2230 Section 8 F2.3.1 - Hazardous Building Materials. Will not present a health hazard to people.</p>	<p>B1.3.3(a) and (j) - Structure. Refer to BEAL Appraisal #IL2230 Section 8 B2.3.1(b) - Durability. Refer to BEAL Appraisal #IL2230 Section 8 E3.3.4, E3.3.5, and E3.3.6 - Internal Moisture. Refer to BEAL Appraisal #IL2230 Section 8 F2.3.1 - Hazardous Building Materials. Will not present a health hazard to people.</p>



Premier Building Products

Your trusted supply partner

Premier Building Products Standard and Water-Resistant Gypsum Board Product Range

TECHNICAL MANUAL WITH DRAWINGS

Feb 2023 V1.2

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Ver 1.2

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Ver 1.2	C Prouse	24 Feb 2023

1. GENERAL DESCRIPTION

The Premier Building Products Ltd. (PBP) Standard and Water-Resistant Gypsum Boards are a range of products incorporating 10 mm, 13 mm thick sheets of gypsum board of various sizes used for general building and construction. The products are suited for residential housing, light commercial and commercial buildings.

This technical manual outlines typical installation details of the PBP Gypsum Board products. If specifiers require additional details or clarification, please contact PBP.

2. SCOPE OF USE & LIMITATIONS

2.1 SCOPE OF USE

The Premier Building Products (PBP) Standard and Water Resistant Gypsum Board range of products, incorporating 10 and 13 mm thick sheets of Standard and Water Resistant Gypsum board are intended to be used for general building and construction work and is suited for residential housing, light commercial and commercial buildings.

This technical manual outlines the typical installation and details of the PBP Standard and Water-Resistant Gypsum Boards. If specifiers require additional details or clarification, please contact PBP.

2.2 LIMITATIONS, STORAGE, HANDLING

PBP Standard and Water-Resistant Gypsum boards are required to be designed and installed, according to the details and drawings described in this technical and installation manual, by experienced and competent tradespeople

Handle with care, store the sheets off the ground and under cover.

When cutting, drilling, or sanding do so in an open-air environment or areas that are well ventilated and wear approved safety glasses and dust masks.

All aspects of cutting, drilling, or sanding must comply with the latest regulations of the Work Safe division of MBIE.

2.3 STORAGE

PBP Standard and Water-Resistant Gypsum Boards are supplied wrapped and stacked on pallets with support timbers at maximum 400mm centres and can be stored indefinitely when kept dry and out of the weather and safe from accidental damage.

2.4 SAFE HANDLING

Individual boards should be stacked and handled carefully to avoid damage. PBP gypsum boards should be lifted from the pallet by sliding board sideways and carrying on long edges.

2.5 SAFE WORKING PRACTICES

Safety is the responsibility of everyone! The following is to be used as a guide to safe work practices involving PBP Board. Under normal conditions of use, PBP board presents no known direct health hazard.

Construction sites can contain multiple hazards and therefore it is required that all installers follow all legal requirements when working on site. Please refer to the Ministry of Business, Innovation & Employment for OSH regulations for all relevant legislations. For more information visit www.employment.govt.nz/er/.

3. COMPLIANCE WITH THE BUILDING CODE

3.1. NZBC COMPLIANCE

Reliance is placed on AS/NZS 2908.2 for flat sheets.

PBP Standard and Water-Resistant Gypsum Boards comply with the following clauses of the NewZealand Building Code:

B1 - Structure

B2 - Durability

E3 - Internal Moisture – for the water-resistant board only

F2 - Hazardous Building Materials

3.2 B1 STRUCTURE

The 10 and 13 mm PBP Standard and Water Resistant Gypsum Boards, when installed as per this technical manual can withstand typical use when installed over timber framing as described in NZS 3604:2011.

3.3 B2 DURABILITY

PBP Standard and Water Resistant Gypsum Boards when installed as per this manual will meet the requirements of NZBC Clause B2.3.1 (b) of 15 years.

3.4 E3 INTERNAL MOISTURE

PBP Water Resistant Gypsum Boards contribute to the requirements of NZBC Clause E3.3.3, E3.3.4 and E3.3.5 relating to the resistance of the effects of splashed water.

3.5 F2 HAZARDOUS BUILDING MATERIALS

The PBP Standard and Water Resistant Gypsum Boards contain no hazardous material and therefore meet this requirement.

4. INSTALLATION OF CERAMIC TILES

4.1 Installation shall be as below:

Stud Centre (mm)	Fixing Centre (mm)	Board thickness (mm)	Maximum tile weight (Kg/m ²)
600	150	10	26
600	150	13	40

5. USE AS A BRACING ELEMENT

5.1 All PBP bracing elements using the standard 10mm Gypsum Board with timber framing as per NZS3604 shall have fixing spacings at 50, 100, 150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element, with 300mm maximum spacing to intermediate stud or dwang.

5.2 Bracing elements with no HandiBrac® hold-down system, with bottom plate fixed as per NZS3604, can be used as a bracing element with the following bracing ratings:

Minimum length (m)	BU/m W	BU/m EQ
0.4	11.5	14.9
1.2	30.3	34.8

5.3 When the Gib HandiBrac® hold-down system is used in conjunction with 10mm PBP Standard Gypsum Board, it can be used as a bracing element with the following bracing ratings:

Minimum length (m)	BU/m W	BU/m EQ
1.2	75	64

6.1 MAINTENANCE

PBP Standard and Water-Resistant Gypsum Boards should be maintained in accordance with the designer's instructions.

6.2 SUPPLIERS WARRANTY –

The product must be designed, installed, and maintained as per the manufacturer's instructions for the warranty to be applicable.

7. TYPICAL CONSTRUCTION GUIDANCE

7.1 FRAMING REQUIREMENTS

The PBP Standard and Water Resistant Gypsum Sheets are intended for installation over either timber framing complying with NZS 3604, and/or Light Gauge steel framing complying with NASH standards 1 & 2, and/or concrete structures designed and constructed in accordance with NZS 3101,1&2

7.2 CONSTRUCTION DESIGN GUIDANCE

7.2.1 Installation Checklist:

A pre- installation check should be carried out by the builder / LBP.

7.3 WATERPROOFING Requirements for water-resistant boards

It is up to the designer to specify the waterproofing requirements.

7.4 CONSTRUCTION DRAWINGS

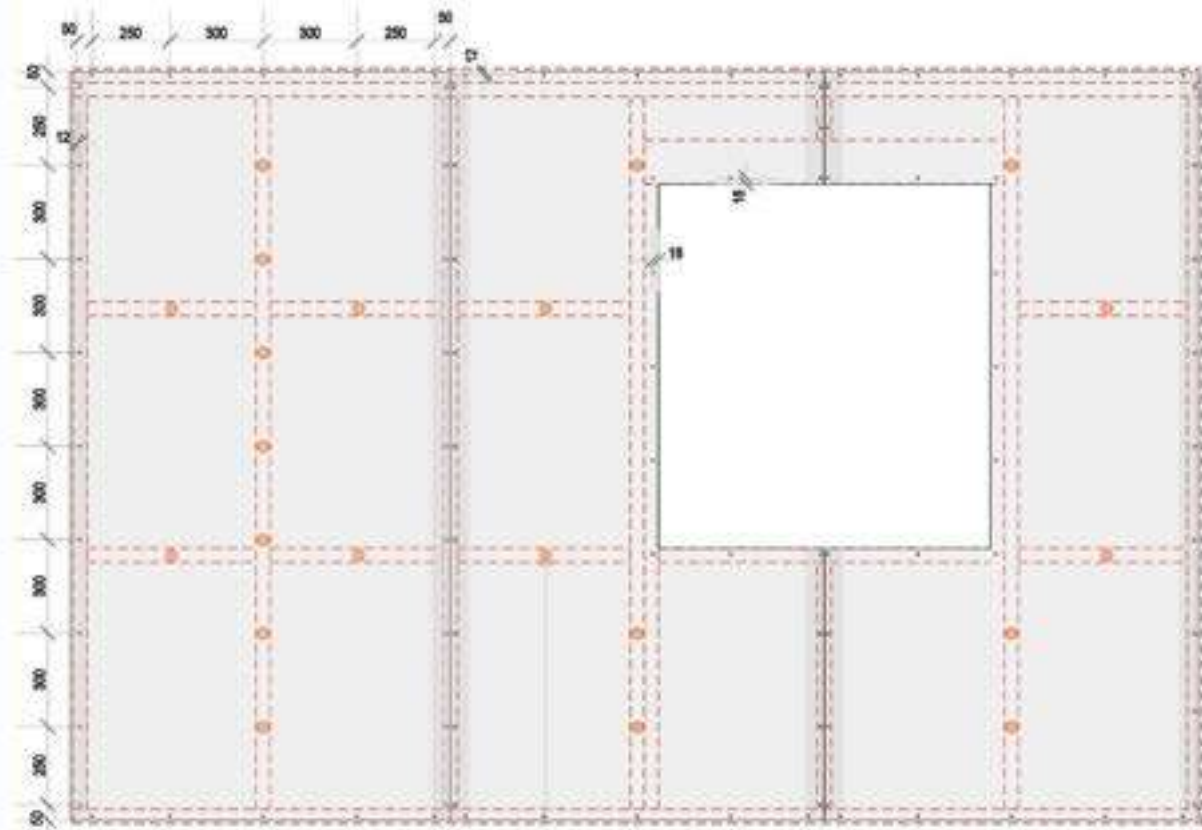
Typical construction drawings are listed in APPENDIX A.

8. QUALITY MANAGEMENT

6.1 BUILDING PRODUCT QUALITY PLAN

The quality of PBP Standard and Water Resistant Gypsum Board is managed through the use of a Product Quality Plan. The PBP Building Product Quality Plan v1.0 is a separate document and is available from Premier Building Products on request.

APPENDIX A – TYPICAL CONSTRUCTION DRAWINGS



Vertical Sheet Fixing - non braced wall

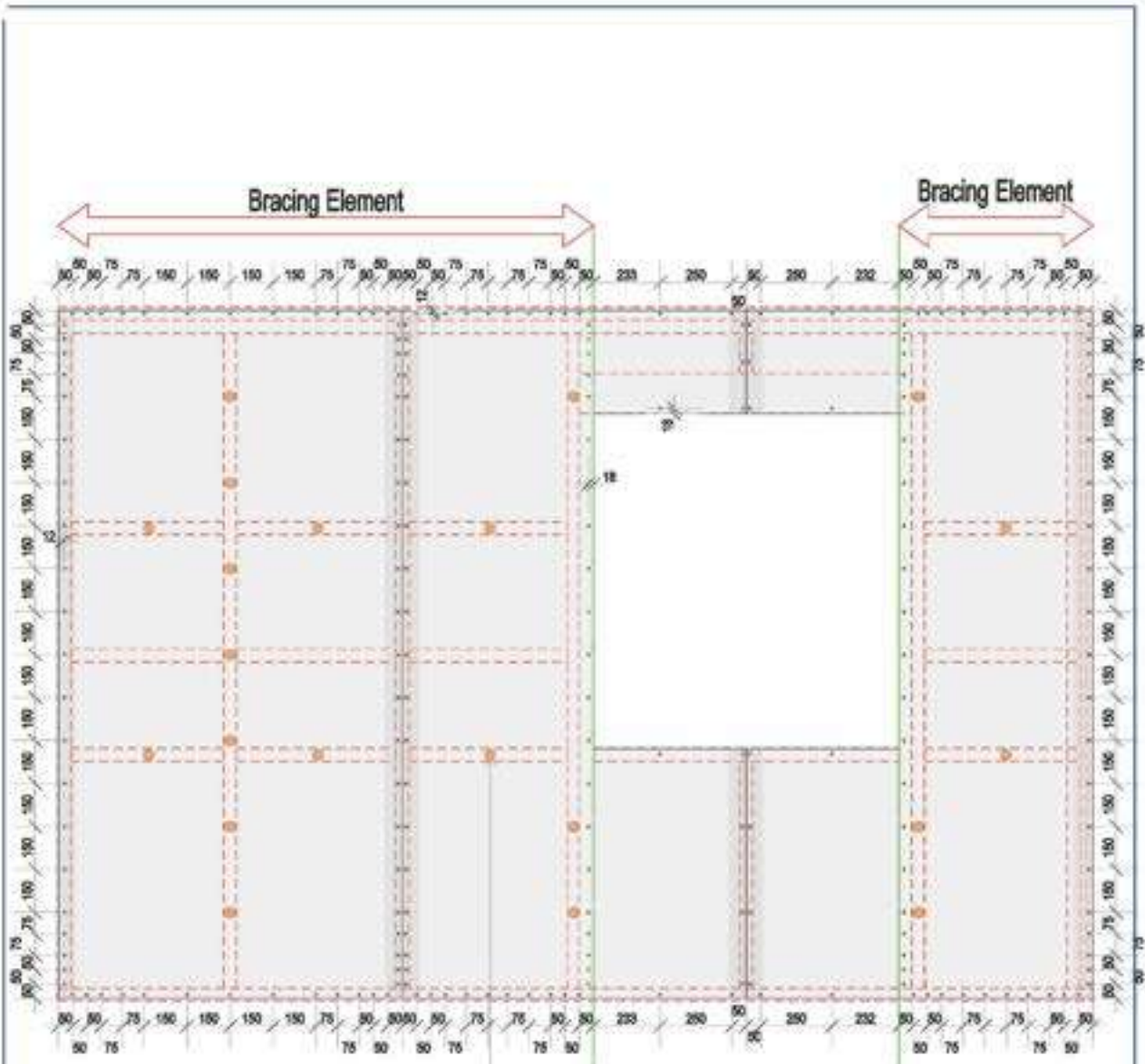
10mm sheet fixing - 25mm x 6g csk screws
 13mm sheet fixing - 32mm x 6g csk screws

Fasteners placed at:
 12mm from factory cut sheet edges.
 18mm from cut sheet edges.
 50mm from sheet corners.
 300mm c/s to supported edges at top and bottom plates, studs.

Suitable adhesive used to intermediate studs at:
 300mm c/s.

Walls and ceiling greater than 9.6m in length require a control joint using a proprietary jointer strip.

 <p>SEAL P.O. Box 232 8011 in Wellington 3A Plasterboard Drive, Papanui Christchurch 8025</p>	DETAILS Premier Building Products Standard and Water Resistant Plaster Board Linings	DESCRIPTION Vertical fixed sheets on Timber framing to NZS3604:2011	JOB NO BTS2230	DATE 15/03/2023
			DESIGN DB	PAGE SIZE ORIGINAL SHEET SIZE A4
			DRAWN DB	SCALE 1:10
			CHECKED CB	SHEET NO A1 of 7



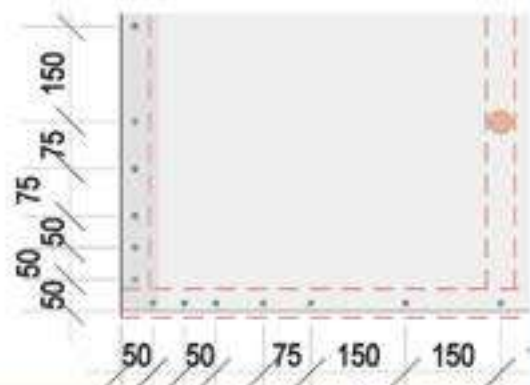
Vertical Sheet Fixing - Braced wall

10mm sheet fixing - 25mm x 6g csk screws
 13mm sheet fixing - 32mm x 6g csk screws

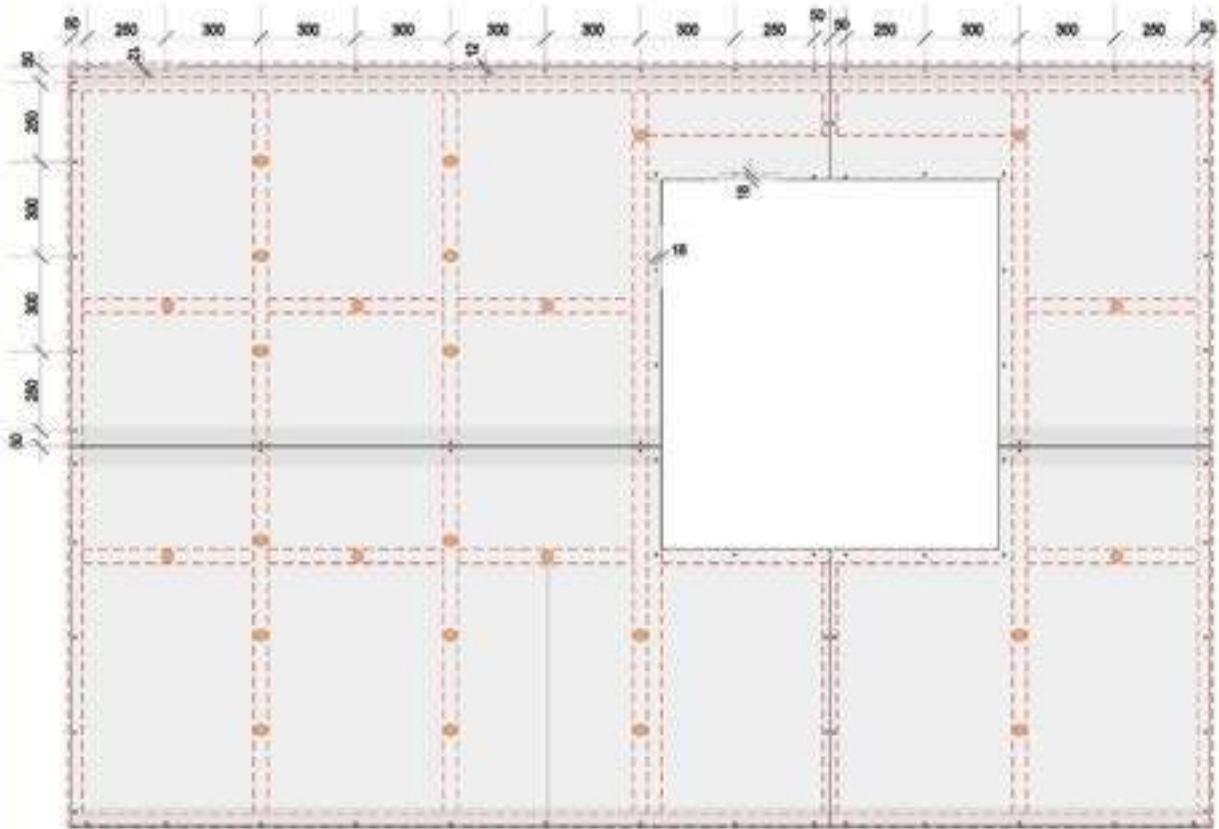
Fasteners placed at:
 12mm from factory cut sheet edges.
 18mm from cut sheet edges.
 50, 50, 75, 75, 150mm from sheet corners.
 150mm crs to supported edges at top and bottom plates, studs.

Suitable adhesive used to intermediate studs at:
 300mm crs.

Walls and ceiling greater than 9.6m in length require a control joint using a proprietary jointer strip.



 <p>BEAL P O Box 233 3801 • Tel: 0800 800 100 2A Pteronui Drive, Pukekohe P.O. Box 303</p>	<p>DETAILS</p> <p>Premier Building Products Standard and Water Resistant Plaster Board Linings</p>	<p>DESCRIPTION</p> <p>Vertical Bracing fixed sheets on Timber framing to NZS3604:2011</p>	<p>REV NO</p> <p>BTS2230</p> <p>DATE</p> <p>15/03/2023</p>	
	<p>DESIGN</p> <p>DB</p>	<p>PROJ. NO.</p> <p>03/03/23 SHEET SIZE: A4</p>	<p>DRAWN</p> <p>DB</p>	<p>SCALE</p> <p>1:10</p>
	<p>CHECKED</p> <p>DB</p>	<p>ENTR'D</p> <p>A1Br of 7</p>		



Horizontal Sheet Fixing - non braced wall


10mm sheet fixing - 25mm x 6g csk screws
 13mm sheet fixing - 32mm x 6g csk screws

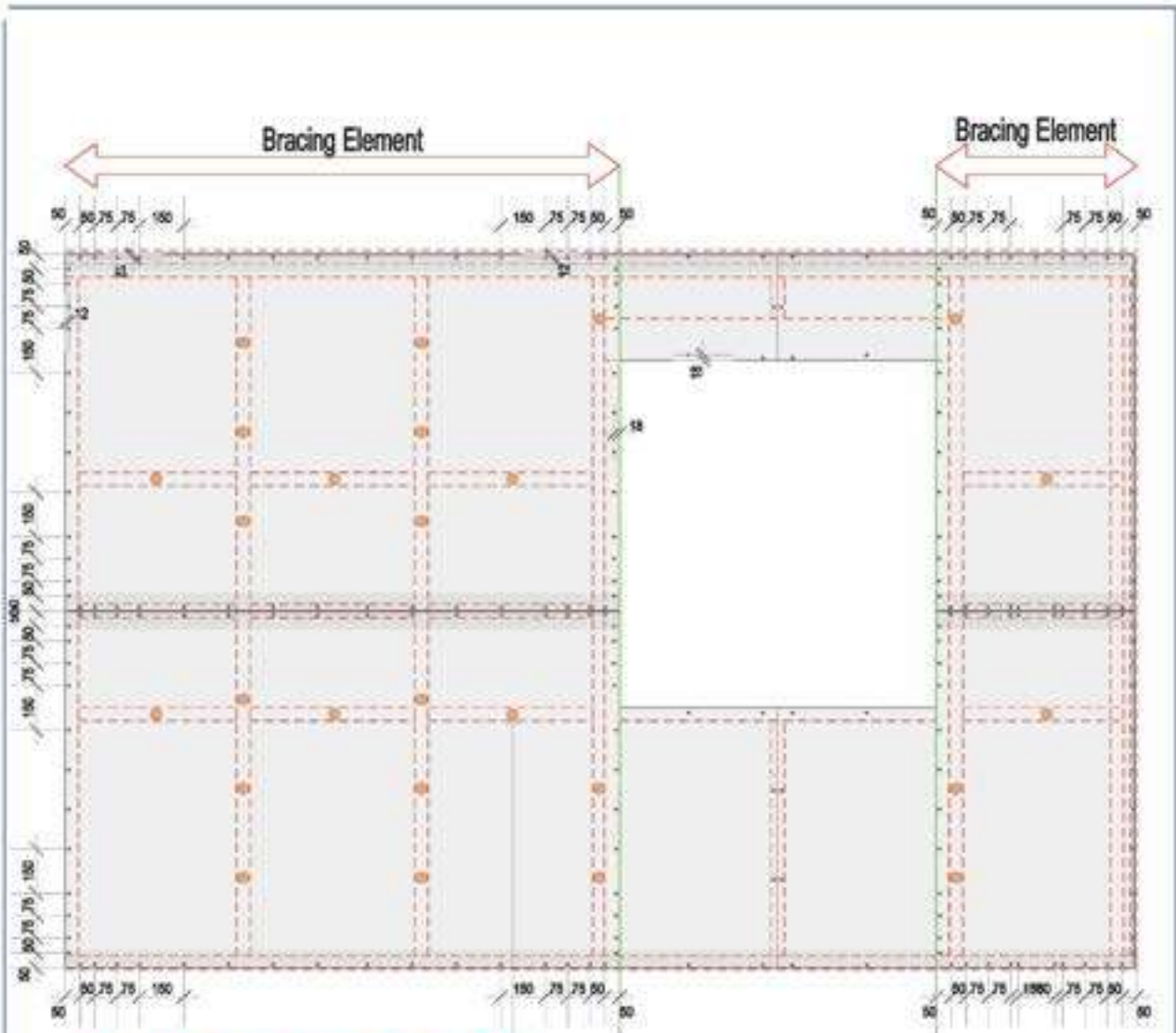
Fasteners placed at:
 12mm from factory cut sheet edges.
 18mm from cut sheet edges.
 50mm from sheet corners.
 300mm c/s to supported edges at top and bottom plates, studs.

Suitable adhesive used to intermediate studs at:
 300mm c/s.

Butt joint to 2400mm sheet ends.

Walls and ceiling greater than 9.6m in length require a control joint using a proprietary jointer strip.

 <small>c. 494 233 9933 or 304@beal.co.nz 24 Plimmerton Drive, Plimmerton Porirua 5025</small>	DETAIL	DESCRIPTION	JOB NO.	DATE	
	Premier Building Products Standard and Water Resistant Plaster Board Linings	Horizontal fixed sheets on Timber framing to NZS3604:2011	BTS2230	15/03/2023	
			DESIGN	DB	PAGE SIZE ORIGINAL SHEET SIZE: A4
			DRAWN	DB	SCALE 1:10
			CHECKED	DB	SHEET NO. A2 of 7



Horizontal Sheet Fixing - Braced wall

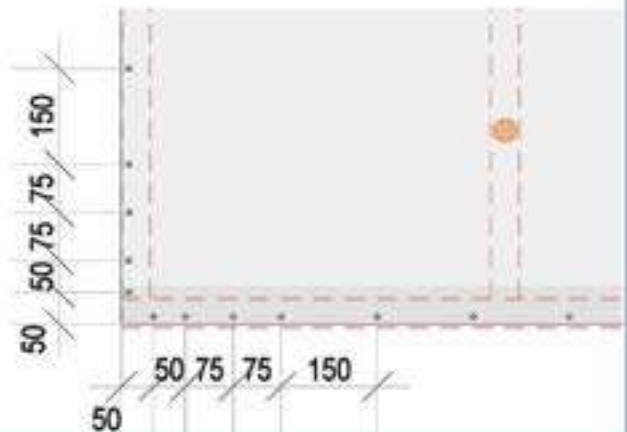
10mm sheet fixing - 25mm x 6g csk screws
 13mm sheet fixing - 32mm x 6g csk screws


Fasteners placed at
 12mm from factory cut sheet edges.
 18mm from cut sheet edges.
 50mm from sheet corners.
 50, 50, 75, 75, 150mm from sheet corners.
 150mm crs to supported edges at top and bottom plates, studs.

Suitable adhesive used to intermediate studs at:
 300mm crs.

Butt joint to 2400mm sheet ends.

Walls and ceiling greater than 9.6m in length require a control joint using a proprietary jointer strip.



 P.O. Box 4 233 Wairarapa 231 Pilsbrough Drive, Pilsbrough Porirua 5026	DETAILS	DESCRIPTION	JOB NO.	DATE	
	Premier Building Products Standard and Water Resistant Plaster Board Linings	Horizontal Braced fixed sheets on Timber framing to NZS3604:2011	BTS2230	15/03/2023	
			DESIGN	DB	PAGE SIZE ORIGINAL SHEET SIZE: A4
			DRAWN	DB	SCALE: 1:10
			CHECKED	DB	BY/NO: A2Br - 7

Pipe penetration
 Support on nogging within wall framing
 Water supply
 10 or 13mm Premier Building Products Water Resistant plaster board wth penetration holes cut 5mm oversize for Neutral cure RTV sealant for full depth of lining

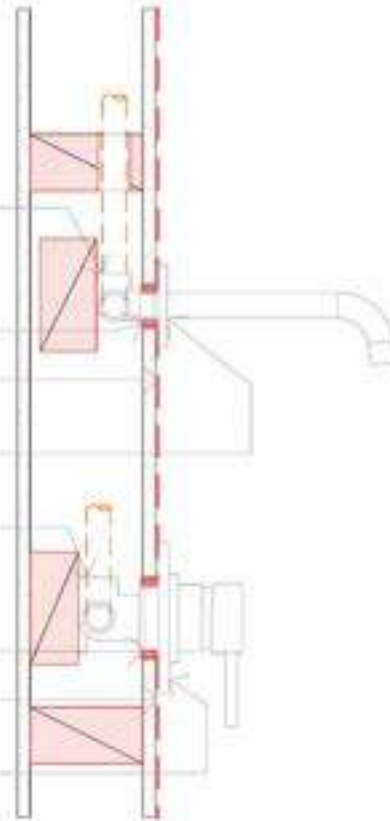
Waterproof lining, e.g. tiles over membrane, acrylic sheet etc.

Plumbing fixture with wall flange.

Mixer
 Support on nogging within wall framing
 Water supply
 10 or 13mm Premier Building Products Water Resistant plaster board wth penetration holes cut 5mm oversize for Neutral cure RTV sealant for full depth of lining

Waterproof lining, e.g. tiles over membrane, acrylic sheet etc.

Plumbing fixture with wall flange.



Pipe Penetration Details



DOWN
 Premier Building Products
 Standard and
 Water Resistant
 Plaster Board Linings

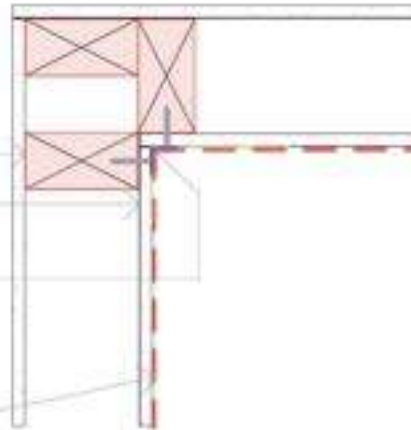
DESCRIPTION
 Pipe Penetration Details

JOB NO	BTS2230	DATE	1/08/2022
DESIGN	DB	PAGE SIZE	DRAWING SHEET SIZE A4
DRAWN	DB	SCALE	1:5
CHECKED	DB	REV NO	A3 OF 5

Wall framing to NZS3604:2011, refer to NZBC B2 for treatment requirements.
10 or 13mm Premier Building Products Water Resistant plaster board.

Internal corner typically finished with paper faced jointing tape embedded into 3 coat interior plaster finishing system.
Refer to plaster system manufacturers technical documentation for appropriate plaster systems.

Waterproof lining, e.g. tiles over membrane, acrylic sheet etc where required.

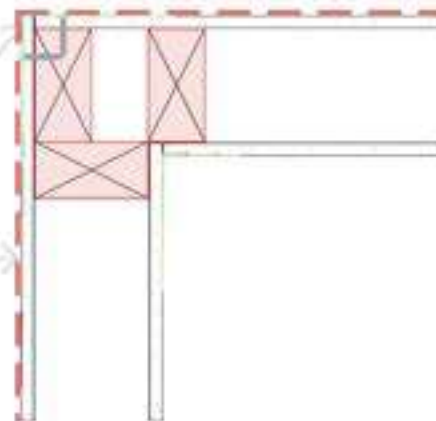


Internal Corner Details

Wall framing to NZS3604:2011, refer to NZBC B2 for treatment requirements.
10 or 13mm Premier Building Products Standard or Water Resistant plaster board.

External corner typically finished with paper faced jointing tape embedded into 3 coat interior plaster finishing system.
Refer to plaster system manufacturers technical documentation for appropriate plaster systems.

Waterproof lining, e.g. tiles over membrane, acrylic sheet etc where required.



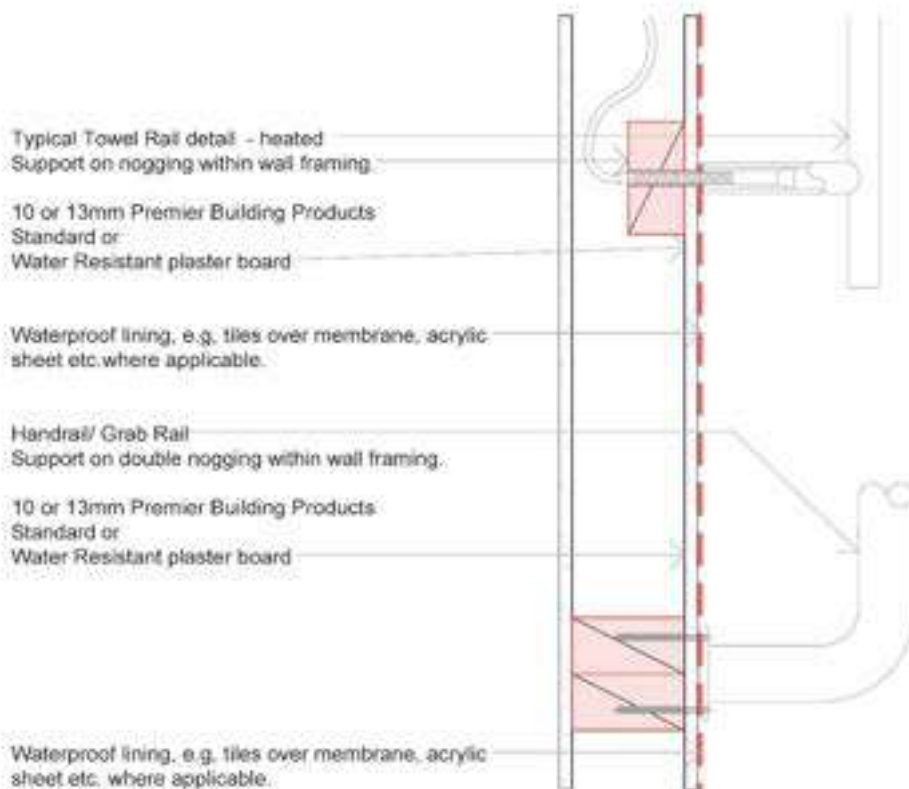
External Corner Details



DETAILS
 Premier Building Products
 Standard and
 Water Resistant
 Plaster Board Linings

DESCRIPTION
 Internal and
 External Corner Details

JOB NO	BTS2230	DATE	1/08/2022
DESIGN	DB	PAGE NO.	ORIGINAL SHEET SIZE A4
DRAWN	DB	SCALE	1:10
CHECKED	DB	SHEET NO	A4 of 5



Rail Penetration Details

 BEAL <small>BEAL is a registered trademark of BEAL Group Ltd. All rights reserved. BEAL is a registered trademark of BEAL Group Ltd. All rights reserved.</small>	DETAILS Premier Building Products Standard and Water Resistant Plaster Board Linings	DESCRIPTION Heated Towel Rail and Handrail Details	JOB NO. BTS2230 DATE 1/08/2022
			DESIGN DB PROJ. NO. Original sheet size A4
			SCALE 1:100
			CHECKED DB SHEET NO. A5 of 5



BEAL Appraisal Certificate



APPRAISAL #: IL2230

EXPIRY DATE: 31 July 2024

The Premier Building Products Standard and Water-resistant Gypsum Boards



Product

- 1.1 The Premier Building Products 10 & 13mm Standard and Water-resistant Gypsum Boards, are a new alternative range for the New Zealand market, used typically for general and wet-area linings in buildings.
- 1.2 The PBP Standard and Water-resistant Gypsum boards comprise a sandwich of paper facings over a gypsum core, with two beveled edges to allow for the creation of a monolith surface ready for decorative finishing.
- 1.3 The PBP Gypsum boards are to be used and installed by suitably trained and experienced tradespersons, within the scope and limitations described in the Appraisal-holder's Technical and Installation Manual.

NZ Building Regulations

2.1 In the opinion of BEAL, the PBP Standard and Water-resistant Gypsum boards, when designed, installed and maintained in accordance with the statements and conditions of this Appraisal Certificate, will meet the following provisions of the New Zealand Building Code:

Clause B1 MECHANICAL PROPERTIES

The PBP Standard and Water-resistant Gypsum boards meet the requirements of Performance B1.3.3 (a) and (j). (Refer para 6.3)

Clause B2 DURABILITY

The PBP Standard and Water-resistant Gypsum boards will meet the requirements of Performance B2.3.1(b). (Refer para 6.4)

Clause E3 INTERNAL MOISTURE

The PBP Water-resistant Gypsum boards will meet this requirements of Performances E3.3.4, E3.3.5 and E3.3.6. (Refer para 6.5)

Clause F2 HAZARDOUS BUILDING MATERIALS

The PBP Standard and Standard and Water-resistant Gypsum boards will not present a health hazard to people. (Refer para 6.6)

2.2 The PBP Standard and Standard and Water-resistant Gypsum boards have been appraised as an 'Alternative Solution' in terms of compliance with the New Zealand Building Code.



Applicant: **Premier Building Products Ltd.**

17A Gabador Place
Mt. Wellington, 1060.
P: 0800 PREMIER (773 643)
E: steve.allison@premierbuildingproducts.co.nz
www.premierbuildingproducts.co.nz

Appraised by: **BEAL**

2A Plimmerton Drive
Plimmerton, Porirua, NZ
P: +64 4 233 6661
E: bts@beal.co.nz
www.beal.co.nz

Scope and Limitations

3.1 The Premier Building Products (PBP) Standard and Water-resistant Gypsum Boards are a range of Standard and Water-resistant Gypsum products incorporating 10 mm and 13 mm thick boards of standard sizes used for general and wet area linings, suited for residential housing, light commercial and commercial buildings. The products are also suitable for adhering ceramic tiles to. Refer S5.1

3.2 The design and construction of all supporting substructures and framing shall be to the timber framing requirements of NZS3604 or NASH Standards 1 and 2 for light gauge steel framing, are to specific design and are therefore the responsibility of the owner/building designer.

3.3 PBP Water-resistant Gypsum Boards require a Building Code compliant waterproofing membrane applied over them in order to meet the performance requirement of clause E3.3.4, E3.3.5 and E3.3.36.

3.4 The owner of the building is responsible for the proper design, installation and maintenance of the installed waterproofing membrane, in accordance with the PBP Warranty - www.premierbuildingproducts.co.nz.

Technical Literature

4.1 The Premier Building Products (PBP) Standard and Water-resistant Gypsum Board Technical and Installation Manual **Ver 1.2** must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained within the technical literature and scope of this Appraisal Certificate must be followed.

4.2 For a copy of this Technical Literature please contact Premier Building Products Ltd. at www.premierbuildingproducts.co.nz or the BEAL website

Technical Details

5.1 The PBP Standard and Water-resistant Gypsum boards can be installed over a well-designed, sound built structure that is in compliance with the NZBC and the project specification.

Board sizes supplied by PBP are:

10mm - 1,200mm x 2,400mm

13mm - 1,200mm x 2,400mm

5.2 Refer to the (PBP) Standard and Water-resistant Gypsum Boards Technical and Installation Manual Ver 1 for the method of installation.

5.3 Ceramic tiles may be adhered over a compatible waterproofing membrane as per the table below:

Stud Centre (mm)	Fixing Centre (mm)	Board thickness (mm)	Maximum tile weight (Kg/m ²)
600	150	10	26
600	150	13	40

Handling and Storage

5.4 All components must be stored inside, in a well ventilated area, up off concrete floors, kept dry, out of direct sunlight and away from freezing conditions.

5.5 The PBP Standard 10mm Gypsum Board has the

following bracing capacities when used on one side of the framing;

Minimum length (m)	BU/m W	BU/m EQ
0.4	11.5	14.9
1.2	30.3	34.8

5.6 When the Gib HandiBrac® hold-down system is used in conjunction with PBP Standard 10mm Gypsum Board, and the fixing centres are adjusted to 50, 100, 150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element, with 300mm maximum spacing to intermediate studs, the following bracing capacities for 1,200mm wide sheets, when used on one side of the framing are:

Minimum length (m)	BU/m W	BU/m EQ
1.2	75	64

Advice for designers

General

6.1 The PBP Standard and Water-resistant Gypsum Boards are available in thicknesses of 10mm and 13mm to suit the required application. They are suited for use for general building and construction including residential housing, light commercial and commercial buildings.

6.2 Before any installation can be carried out, it is essential that the intended framing and have been constructed in accordance with the relevant Standard(s).

Structure - Clause B1.3.3 (a) and (j)

6.3 The installed PBP Standard and Water-resistant Gypsum boards have good flexural properties required to meet clauses B1.3.3 (a) and (j).

Durability - Clause B2.3.1(b)

6.4 The PBP Standard and Water-resistant Gypsum boards when installed in accordance with this Appraisal Certificate, protected by a compatible and compliant protective coating system, subject to normal conditions of environment, use, and good housekeeping maintenance, are expected to have a serviceable life of at least 15 years. Note the requirement under 3.4.

Internal Moisture - Clauses E3.3.3, E3.3.5 & E3.3.6

6.5 The PBP Water-resistant Gypsum boards, when protected by a compatible and compliant protective waterproof membrane, subject to normal conditions of environment, use, and good housekeeping maintenance, will meet this requirement.

Hazardous Building Materials - Clause F2

6.6 The PBP Standard and Water-resistant Gypsum boards will not present a health hazard to people using the building.

Installation Requirements

Installation Skill Requirement

7.1 The PBP Standard and Water-resistant Gypsum Boards must be installed by suitably trained and experienced tradespersons.

Health and Safety

7.2 The safe use and handling of the PBP Standard and Water-resistant Gypsum boards are explained in the PBP technical literature.

Basis of this Appraisal

BEAL use the 'compliance verification procedure' to demonstrate compliance with the relevant clauses of the NZBC based on a risk analysis procedure. The following is a summary of the technical investigations carried out:

Assessments

8.1 The following assessments of the PBP Standard and Water-resistant Gypsum boards have been undertaken by BEAL:

A review of the test data and technical literature supplied by Premier Building Products Ltd.

In-service History

8.2 The PBP Standard and Water-resistant Gypsum boards has been in use for over 10 years overseas, in a wide range of conditions.

Quality

8.3 The manufacture of the PBP Standard and Water-resistant Gypsum boards is managed by way of a manufacturing quality plan which has been viewed by BEAL and found to be satisfactory.

8.4 The quality of the PBP Standard and Water-resistant Gypsum boards supplied by Premier Building Products Ltd. To the New Zealand market is managed through the use of a Building Product Quality Plan.

8.5 The Premier Building Products Ltd. Building Product Quality Plan, is based on ensuring continuous conformance with the quality requirements from purchase to supply to the merchants.

8.6 Premier Building Products Ltd.'s Building Product Quality Plan is reviewed and audited at least annually by BEAL or appointed agent.

8.7 Designers are responsible for the substructure design, and building contractors are responsible for the quality of construction of the substructure or new substrate in accordance with the instructions of the substrate manufacturer and this Appraisal Certificate.

8.8 Building owners are responsible for the maintenance of the PBP Standard and Water-resistant Gypsum boards in accordance with the manufacturer's instructions and this Appraisal Certificate.

Sources of Information

- The Building Regulations 1992, 15 November 2021.
- NZS 3604:2011 Timber Framed Buildings.
- AS/NZS2588:2018, Gypsum Plasterboard
- NASH Standards 1 and 2 covering light gauge steel framing.
- The Premier Building Products Ltd. Technical and Installation manual ver 1.
- The Premier Building Products Ltd. Building Product Quality plan ver 1.
- Test Report 220415166GZU-001 from Intertek dated 13 May 2022 reporting the conformance of 10mm thick Water-resistant Gypsum Board with AS/NZS2588: 2018 - including water resistance.
- Test Report 220628009SHF-004 from Intertek dated 18 July 2022 reporting the conformance of 13mm thick Water-resistant Gypsum Board with AS/NZS2588: 2018 - including water resistance.

- Test Report 220628009SHF-001 from Intertek dated 15 July 2022 reporting the conformance of 10mm thick Standard Gypsum Board with AS/NZS2588: 2018 - including water resistance.
- Test Report 220628009SHF-002 from Intertek dated 15 July 2022 reporting the conformance of 13mm thick Standard and Water-resistant Gypsum Board with AS/NZS2588: 2018 - including water resistance.
- BEAL Test Report TR221017-1 Fixing Shear Resistance testing dated 18 October 2022.
- BEAL Test Report TR230117-1/2/3 for P21 bracing tests

Concluding statement

9.1 In the opinion of BEAL, the PBP Standard and Water-resistant Gypsum boards are fit for purpose and will comply with the NZBC to the extent specified provided that it is used, designed, installed and maintained in accordance with the manufacturer's instructions and this Appraisal Certificate. The Appraisal Certificate is issued only to Premier Building Products Ltd., and is valid until further notification, subject to the conditions of this Appraisal.

Conditions of Appraisal

10.1. This appraisal Certificate:

- Relates only to the PBP Standard and Water-resistant Gypsum boards as described herein;
- Must be read, considered and used in full, together with the current version of the Technical Literature
- Does not address any legislation, regulations, codes or standards, not specifically named herein;
- Is copyright of BEAL

10.2 The Appraisal Certificate holder continues to meet the quality requirements of the Premier Building Products Ltd. Building Product Quality Plan and has the plan audited and Appraisal certificate revalidated by BEAL on an annual basis.

10.3 Premier Building Products Ltd. shall notify BEAL and obtain approval of any changes of the product specification or quality assurance prior to product being marketed including any trade literature, web site info or the like.

10.4 BEAL makes no representation as to:

- The nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
- The presence or absence of any patent or similar rights subsisting in the product or any other product;
- Any guarantee or warranty offered by the Appraisal Certificate holder.

10.5 BEAL's verification of the building product or system complying with one or more of the above-mentioned criteria is given on the basis that the criteria used were those that were appropriate to demonstrate compliance with the NZBC at the date of this Appraisal Certificate. In the event that the criteria is withdrawn or amended at a later date, this Appraisal may no longer remain valid.

10.6 Any reference in this Appraisal Certificate to any other publication shall be read as a reference to the version of publication specified in this Appraisal Certificate.

Authorised Signatory,



C R Prouse Senior Building Scientist
BEAL (Building Element Assessment Laboratory Limited)
 Ver 2.4 Updated 24th February 2023.

Date of issue: Monday, 29 January 2023

Premier Building Products Limited
Auckland
Steve Allison

BTS2230 CERTIFICATE OF TEST: TR230127-1

Measurement of the Density of Gypsum Boards

1. Objective:

- 1.1 BEAL Testing Services were contracted by Premier Building Products Ltd. to verify that their 10 and 13mm thick paper faced gypsum plaster boards, when installed in accordance with the manufacturer's instructions, will meet the performance requirements of the New Zealand Building Code, and specifically NZS3604:2011 Timber-framed Buildings clause 13.5.2 (a).

2. Methodology:

- 2.1 3 samples each of 10mm and 13mm Standard Plasterboard were taken at random from different pallets at the Premier Building Products warehouse at 17 Gabador Pl, Mt Wellington, Auckland.
- 2.2 Samples were rough cut from full sheets and trimmed in the workshop before testing to remove tapered edges and edge tape prior to testing.
- 2.3 Samples were then measured across the face at the edges and through the centre using a steel rule, and at 4 points around the edges using a digital electronic caliper. Samples were then weighed using a digital tuning fork balance.
- 2.4 Results are tabulated on the attached sheet with density calculated per sample.

3. Criteria:

- 3.1 A minimum density of 600 kg/m³ is required to satisfy NZS3604:2011 Timber-framed Buildings clause 13.5.2 (a) for use as a structural ceiling diaphragm.

4. Condition of Samples

- 4.1 The specimen boards were supplied by the client and prepared at room conditions, being 24°C and 83% humidity.
- 4.2 Tapered edges of the sheets were removed.

5. Results:

5.1

Recordings		Volume (m ³)	Weight (g)	Density (kg/m ³)
Sample	Description			
1	PBP 10mm Std Plasterboard 1	0.000718687	563.70	784.3471622
2	PBP 10mm Std Plasterboard 2	0.000799087	611.35	765.0608823
3	PBP 10mm Std Plasterboard 3	0.000756877	566.61	748.6152975
4	PBP 13mm Std Plasterboard 1	0.000960496	719.96	749.5709615
5	PBP 13mm Std Plasterboard 2	0.000978442	737.48	753.7287025
6	PBP 13mm Std Plasterboard 3	0.000923494	685.32	742.0943701

5.2

Results (kg/m ³)	Maximum	784.35
	Minimum	742.09
	Average	757.24
	Range	5.39%

6. Comment:

6.1 Results obtained demonstrate that densities for all samples exceed the minimum density of 600 kg/m³ required to satisfy NZS3604:2011 Timber-framed Buildings clause 13.5.2 (a) for use as a structural ceiling diaphragm.

7. Attachments:

7.1 Figure 1 – Photograph of samples.



Dean Buckeridge NZCD(Arch)

Building Element Assessment Laboratory Limited

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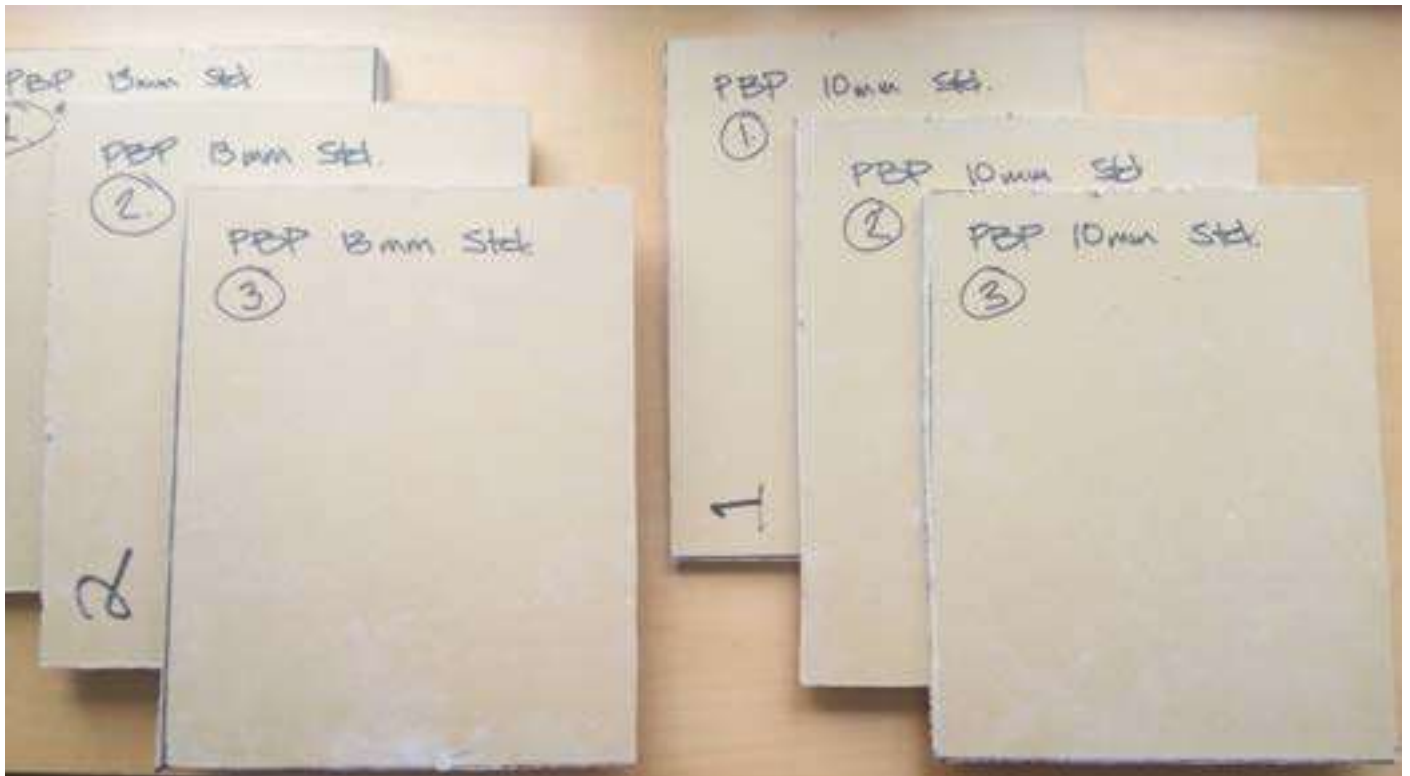


Figure 1 – 10mm and 13mm Plasterboard

Date of issue: 29 November 2022

Steve Allison
Manager
Premier Building Products Ltd

BTS2230-1 CERTIFICATE OF TEST: TR-221017-1&2 + TR221025-1 v2

Measurement of Fixing Shear Resistance to Assess the (vertical) Tile Weight Capacity of the 13mm thick PBP Water Resistant Gypsum Board

1. Objective:

- 1.1 BEAL Testing Services were contracted by Premier Building Products Ltd to verify that the 10mm and 13mm thick Water-Resistant Gypsum Board product, supplied by the client, when ceramic tiles are adhered, will meet the performance requirements of the New Zealand Building Code and a specified tile weight of 26Kg/m² for the 10mm product and 40Kg/m² for the 13mm product, based on a specified timber frame fixing detail. (Stud centres 600mm and fixing centres max. 150mm as per Table 1).
- 1.2 A comparison with the performance of a similar water-resistant gypsum board product, was carried out by way of fixing shear resistance testing. An engineer would then assess the results.

2. Methodology:

- 2.1 Measurement of potential creep using a shear resistance test, BEAL TP145 'Fixing Shear Resistance', was selected for the purpose.

3. Test Specimen:

- 3.1 5 specimens approx. 100mm x 90mm (well clear of any tapered edge) of each of the two brands of 13mm thick water-resistant gypsum board product were prepared and screw-fixed by way of 6g x 40mm long self-tapping screws, to a timber block as per the test procedure. A steel bar was then fixed to the timber block to enable it to be held in the jig of the Universal Testing Machine. Refer photo.

4. Specimen Conditioning – if any:

- 4.1 Specimens were prepared at room conditions.

5. Test Criterion:

- 5.1 A structural engineer was asked to assist in the development of this assessment procedure.

5.2 The purpose of the method was to measure the shear resistance of typical screw fixing in order to assess the board's tile weight carrying capacity. The test results would be subject to the evaluation procedure described in Appendix B of AS/NZS1170. Refer calculation sheet.

6. Test Result:

Two sets of test results were produced, though one test result for the PBP product was discounted, owing to a non-conforming preparation process.

TR221017-1 13mm Premier Building Products Water Resistant Gypsum Board

Specimen	Break distance(mm)	Maximum Force (N)	Limiting Fixing Load*
2221-1	3.29	414	162.5
2221-2	4.18	484	156.25
2221-3	6.29	327 (abnormally low)	143.25
2221-4	4.22	419	193.75
Average		414	163.94
SD		56.0	21.43

* taken from the graph

TR221017-2 13mm Aqualine Gypsum Board

Specimen	Break distance(mm)	Maximum Force (N)	Limiting Fixing Load*
2222-1	9.10	756	237.5
2222-2	6.79	740	287.5
2222-3	5.03	715	312.5
2222-4	6.05	595	200.0
2222-5	5.76	666	287.5
Average		694	265.0N
SD		65.5	

* taken from the graph

Based on the above, the engineer requested one final set of tests to represent the effects of fixing shear near a cut edge.

TR221025-1 13mm Premier Building Products Water Resistant Gypsum Board

Specimen	Break distance(mm)	Maximum Force (N)
2223-1	3.29	355
2223-2	4.18	330
Average		342
SD		18.0

7. Calculations:

Refer to the attached calculation sheets for the PBP board and Aqualine board.

8. Comment:

8.1 The shear resistance for the 13mm Premier Gypsum Board is significantly less than the NZ manufactured gypsum board product, when the fixing was tested in the centre of the board specimens. This results in a characteristic capacity of 172N (17.5Kg per screw fixing) for the Aqualine product versus a characteristic capacity of 101.78N (10.4Kg per screw fixing) for the Premier Building Product's product.

However, when considering the weight of tiles that the PBP product could carry, based on 600mm spaced studs, with fixing centres at no more than 150mm, the test results indicate that the PBP product will meet the tile weight requirement of 40Kg per sq.m. as set out in the attached table 1:

Stud Centre (maximum)	Fasteners Centre (maximum)	Lining Thickness	Tile Weight
600mm maximum	150mm maximum	10mm	26kg/m ²
		13mm	40kg/m ²

Table 1

8.2 Based on the test results found in TR221025-1, 3rd graph) where testing was carried out on a fixing at a typical 11mm from a cut edge on 13mm thick board, the capacity of the fixings would appear to be satisfactory to meet the tile weight of 40Kg/m².

Based on an extrapolation of these results, it appears that the 10mm thick board is suitable for 26Kg/m².

8.3 Note that the limiting fixing load taken from each test corresponded to the point where the resistance commenced to reduce (i.e. the onset of non-linearity).

8.4 Based on a 40Kg per sq.m. requirement or a minimum load capacity requirement of 33.4N per fixing at the centre of a sheet, the PBP 13mm board meets this requirement.

8.5 Based on the 10mm PBP Water resistant gypsum board being of the same constituents and same density as the 13mm product, the 10mm board will meet the tile weight requirement of 26Kg/m².



Authorised signatory

C R Prouse

Building Element Assessment Laboratory Limited

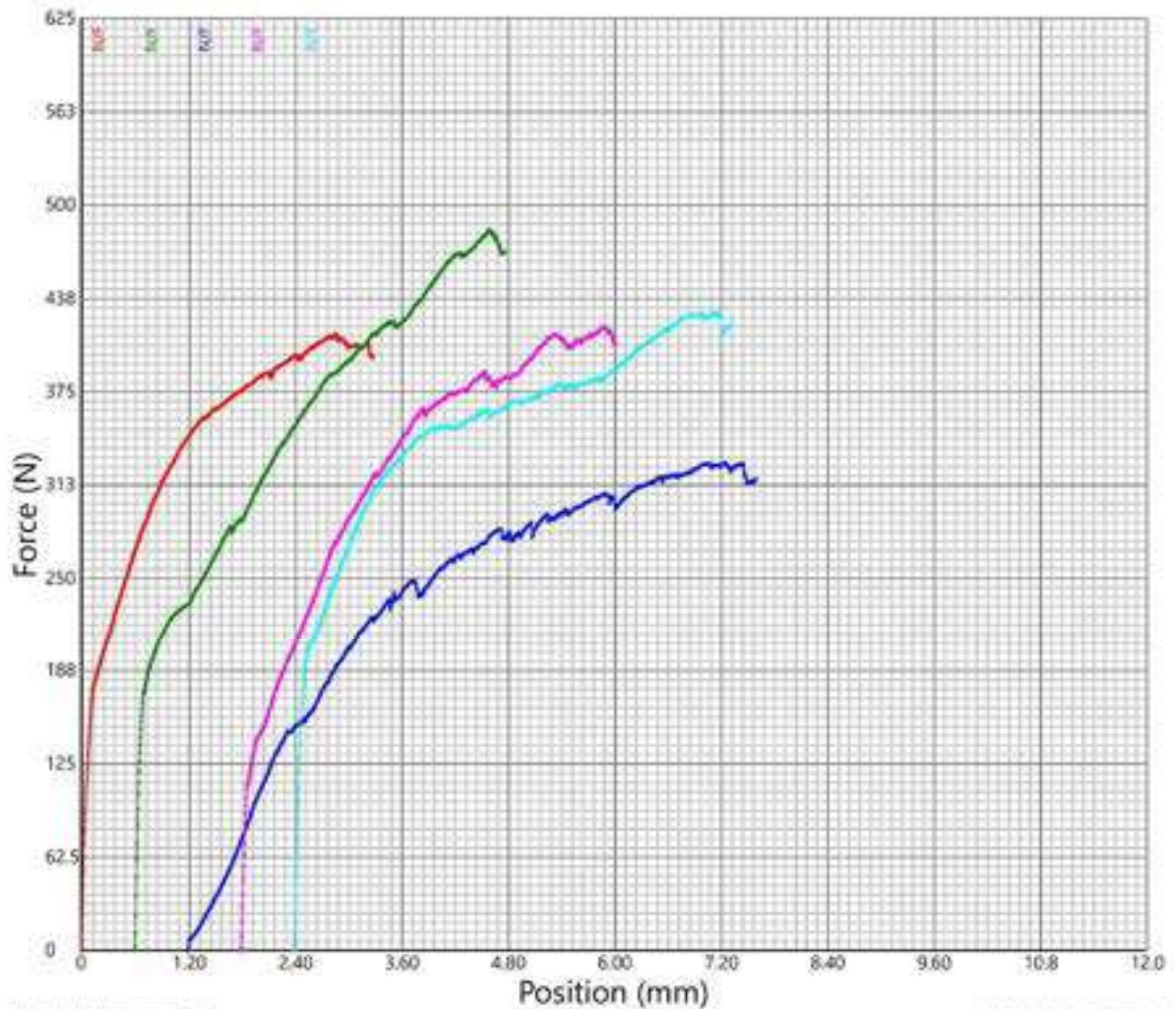
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TR #: 221017-1
Client: PBP
Job Number: BTS2230-2
Product Name: 13mm Gypsum Bd
Conditioning: Nil
Tested by: D Cunningham
Calibration: No

Method Name: TP-145 Fixing Shear Resistance
Standard: Nil
Speed: 1.5 mm/min
Batch Start Date and Time: 17/10/2022 2:54 pm
Graph Offset: 5.00 %

Specimen #	Diameter mm	Head diameter mm	Break Distance mm	Max Force N	MoF Description	Note Additional Information
2221-1	3.87	0	3.29	414	Simple crush point	Material crushed
2221-2	3.87	0	4.16	464	Simple crush point	Material crushed
2221-3	3.87	0	6.29	327	Simple crush point	Material crushed
2221-4	3.87	0	4.22	419	Simple crush point	Material crushed
2221-5	3.87	0	4.81	429	Simple crush point	Material crushed
Average			4.96	414		
SD			1.11	56.0		





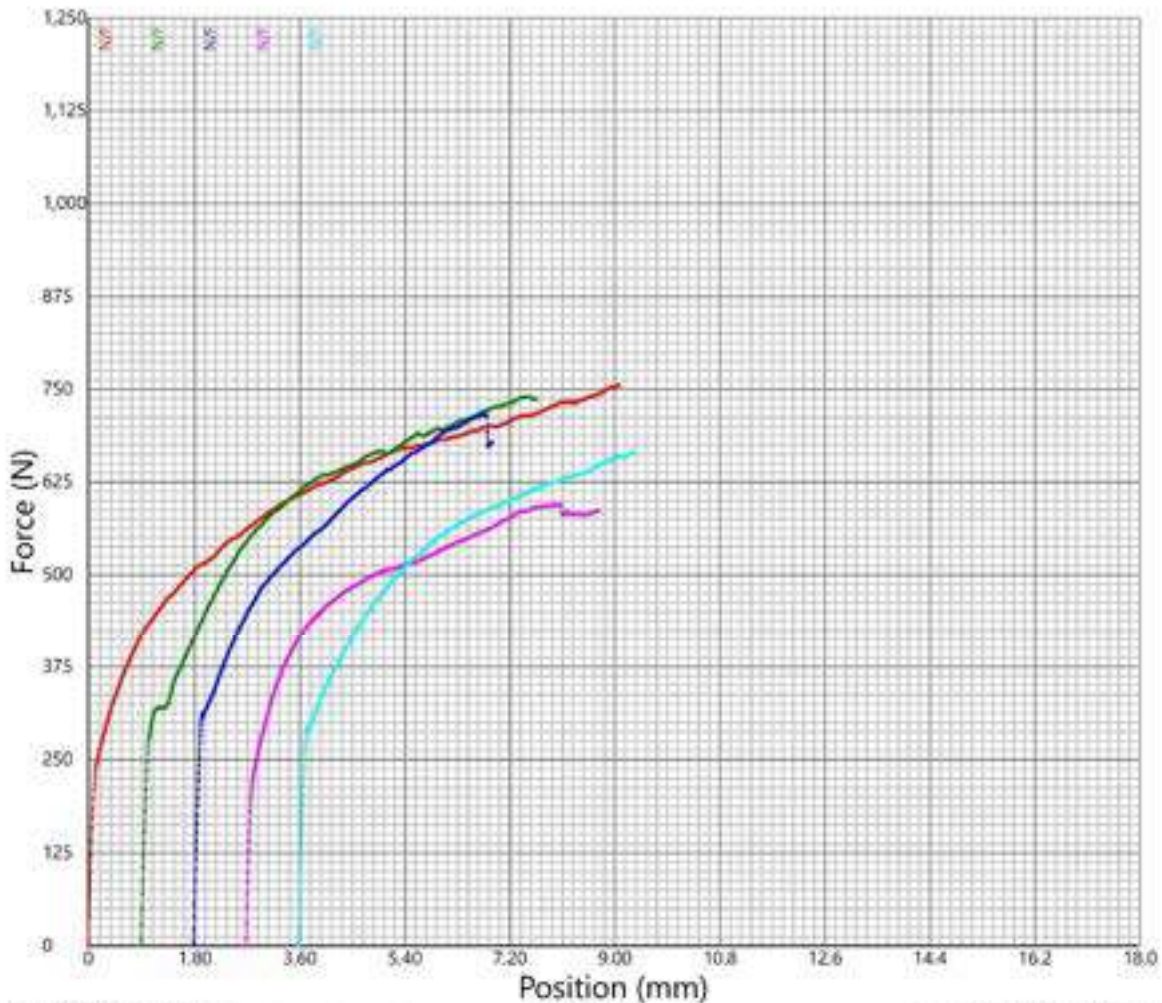
Mechanical Testing
Using a Tinius Olsen Universal Testing Machine
w H5KS Machine Output



TR #: TR221017-2
Client: PBP
Job Number: BTS2230-2
Product Name: 13mm Aqualine
Conditioning: NIL
Tested by: D Cunningham
Calibration: No

Method Name: TP-145 Fixing Shear Resistance
Standard: NIL
Speed: 1.5 mm/min
Batch Start Date and Time: 17/10/2022 3:42 pm
Graph Offset: 5.00 %

Specimen #	Diameter mm	Head diameter mm	Break Distance mm	Max Force N	MoP Description	Note Additional information
2222-1	3.87	0	9.10	756	Simple crush point	Screw head pulled through
2222-2	3.87	0	6.79	740	Simple crush point	Screw head pulled through
2222-3	3.87	0	5.03	715	Simple crush point	Screw head pulled through
2222-4	3.87	0	6.05	595	Simple crush point	Screw head pulled through, abnormal early failure
2222-5	3.87	0	5.76	606	Simple crush point	Screw head pulled through, abnormally low value
Average			6.55	694		
SD			1.86	65.6		



Method TP-145 Fixing Shear Resistance (Rev. 0)
v10.1.5.0 - 50074508 - BEAL Building Element Assessment Laboratory

- Page 1 of 1 -

Output: TP-145 Fixing Shear Resistance (Rev. 0)
v10.1.5.0 - 50074508 - 17/10/2022 4:17 pm

AS/NZS1170.0 Appendix B Analysis

BTS2230-1 TR221017-1&2

Filing shear resistance test of 13mm PBP Water resistant Gypsum Board

Step One: Enter the number of samples and their test value.

Must also adjust Mean, SD, and Samples Size formulas below.

Sample Number **Derived test values (N)** - at the first indication of failure

1	162.5
2	156.25
3	143.25
4	193.75
5	

Mean	163.938
SD	21.431
CoV	13.073
Sample size	4,000
CoV Correction	13.890

Step 2: To find the relevant Kt value for the COV or COV(corr), must turn into a percentage(COV*100)

Interpolation

COV(%)	13.073
--------	--------

We use the row from the table which refers to our number of samples.

	Table COV	Lower & Upper COV's k _t 's from the table
Lower Range	15	1.5
Upper Range	20	1.74
kt		1.41

K _t [COV] *	1.41	K _t [COV(corr)] *	1.46
N _(char)	101.78	N _(char) from COV(corr)	98.12

* K_t value is Found in Table B1 of AS-NZS 1170.0 using Interpolation or double Interpolation.

k, Table B1 of AS NZS 1170

Number of units (n)	Coefficient of variation of Structural characteristics percentage						
	5	10	15	20	25	30	40
1	1.2	1.46	1.79	2.21	2.75	3.45	5.2
2	1.17	1.28	1.64	1.96	2.36	2.86	3.9
3	1.15	1.33	1.56	1.83	2.16	2.56	3.3
4	1.15	1.3	1.5	1.74	2.03	2.37	2.9
5	1.13	1.28	1.46	1.67	1.93	2.23	2.27
10	1.1	1.21	1.34	1.49	1.66	1.85	2.1

AS/NZS1170.0 Appendix B Analysis

BTS2230-1 TR221017-2

Fixing shear resistance test of 13mm AQUALINE Gypsum Board

Step One: Enter the number of samples and their test value.

Must also adjust Mean, SD, and Samples Size formulas below.

Sample Number **Derived test values (N)** - at the first Indication of failure

1	237.5
2	287.5
3	312.5
4	200
5	287.5

Mean	265.000
SD	45.415
CoV	17.138
Sample size	5.000
CoV Correction	17.995

Step 2: To find the relevant Kt value for the COV or COV(corr), must turn into a percentage(COV*100)

Interpolation	
COV(%)	13.073

We use the row from the table which refers to our number of samples.

	Table COV	Lower & Upper COV's k _t 's from the table
Lower Range	15	1.46
Upper Range	20	1.67
kt		1.38

K _t [COV] *	1.38	K _t [COV(corr)] *	1.46
N [char]	172.22	N [char] from COV(corr)	136.99

* K_t value is Found in Table B1 of AS-NZS 1170.0 using interpolation or double interpolation.

k, Table B1 of AS NZS 1170

Coefficient of variation of Structural characteristics percentage							
Number of units	5	10	15	20	25	30	40
1	1.2	1.46	1.79	2.21	2.75	3.45	5.2
2	1.17	1.28	1.64	1.96	2.36	2.86	3.9
3	1.15	1.33	1.56	1.83	2.16	2.56	3.3
4	1.15	1.3	1.5	1.74	2.03	2.37	2.9
5	1.13	1.28	1.46	1.67	1.93	2.23	2.27
10	1.1	1.21	1.34	1.49	1.66	1.85	2.1



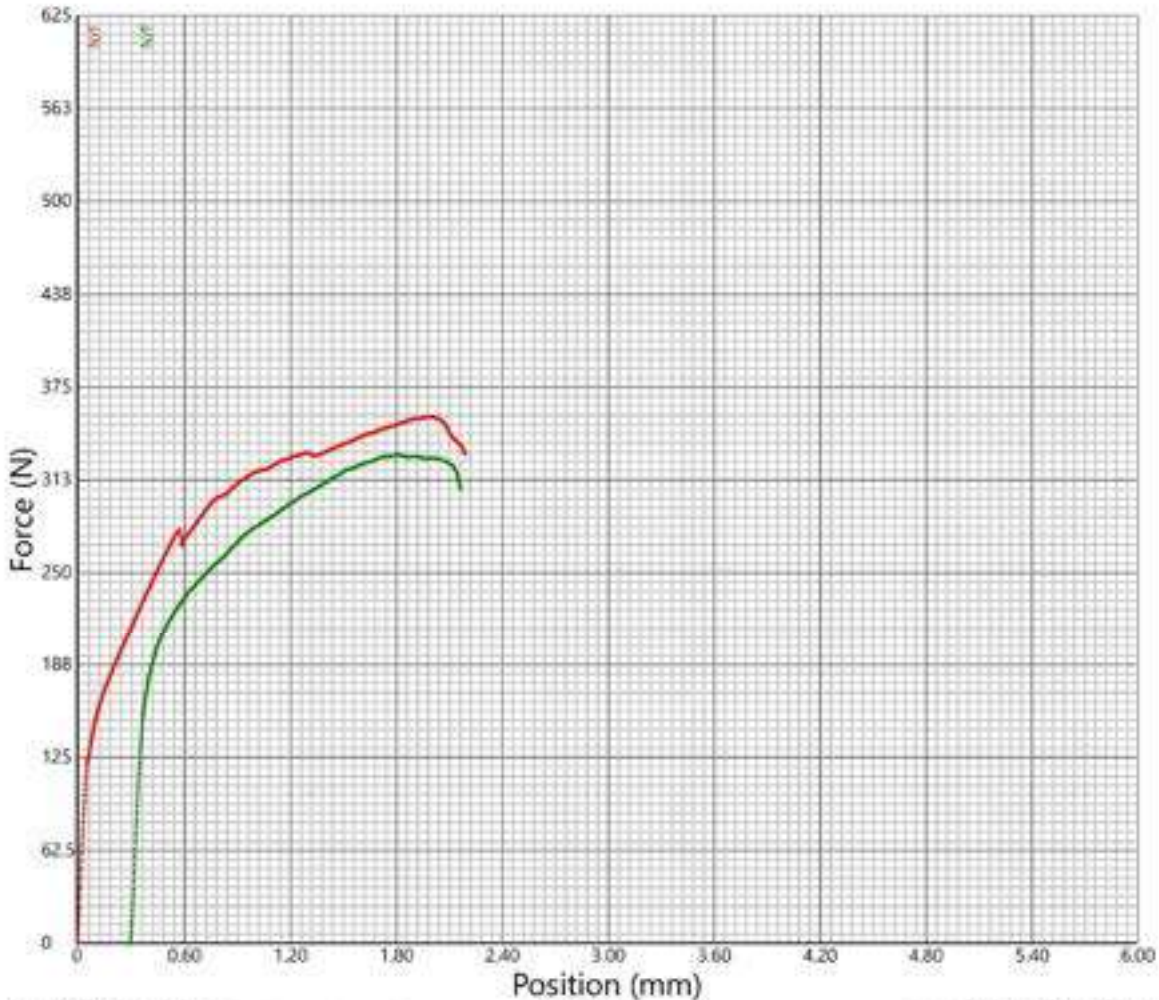
Mechanical Testing
Using a Tinius Olsen Universal Testing Machine
w H5KS Machine Output



TR #: #221025-1
Client: PBP
Job Number: BTS2230-3
Product Name: 13mm PBP Gypsum Board
Conditioning: Nil
Tested by: C Prouse
Calibration: No

Method Name: TP-145 Fixing Shear Resistance
Standard: Nil
Speed: 1.5 mm/min
Batch Start Date and Time: 25/10/2022 11:45 am
Graph Offset: 5.00 %

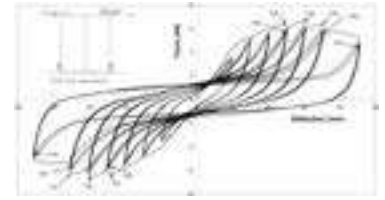
Specimen #	Diameter mm	Head diameter mm	Break Distance mm	Max Force N	MoF Description	Note Additional information
S2223-1	3.88	8.1	2.20	355	Simple crush point	Progressive crushing
S2223-2	3.88	8.1	1.87	330	Simple crush point	Progressive crushing
Average			2.04	342		
SD			0.23	18.0		



Method: TP-145 Fixing Shear Resistance (m, 10)
V02.1.0 - 10/24/2022 - BEAL Building Element Assessment Laboratory

- Page 1 of 1 -

Client: PBP
H5KS/05: 1000h Prouse 25/10/2022 11:58 am



Date of issue: 21 February 2023

Steve Allison
General Manager
Premier Building Products Ltd

BTS2230-3 CERTIFICATE OF TEST: SUMMARY OF TESTS

Ten P21 Type Panel Bracing Capacity Tests of 10mm Standard PBP Gypsum Board

1. Objective:

- 1.1 BEAL Testing Services were contracted by Premier Building Products Ltd to assess the bracing capacity of the 10mm Standard PBP Gypsum Board.
- 1.2 Testing was carried out on single sets of specimens of the 10mm Standard Gypsum Board fixed to two sizes of timber framing that were prepared for testing by BEAL staff.

2. Methodology:

- 2.1 BEAL TP-211 ver1.0, is based on the test methodology titled **P21 A Wall bracing test and Evaluation Procedure**, published by BRANZ, updated in 2011.
- 2.2 The objective of this test procedure, is to evaluate the bracing capacity of walls and or wall panels, including Structural Insulated Panels (SIPs). After measurement and treatment of the data in accordance with the specified evaluation procedure, the wall or floor element can be assessed as contributing to the requirement of Clause B1.3.1 of the New Zealand Building Code.
- 2.3 A key requirement of this test procedure is an accurate description of all components used to construct the test specimen, including how the specimen is intended to be fixed or held down to the floor – usually to a bottom plate.

3. Test Equipment:

- 3.1 To evaluate the bracing capacity of walls and or wall panels, a special mechanical test rig including a fast-acting hydraulic ram with calibrated load cell and displacement measuring device, with controls, is required.

4. Test Specimens:

- 4.1 Where BTS were not able to select the samples from a manufacturer or able to prepare the specimens, sampling shall follow the BEAL TP115 (BEAL Standard sampling procedure).

4.2 For this test, 10mm Gypsum Boards were supplied by the client, then fixed to two sizes of LVL timber framing, then installed into the BEAL mechanical test rig, by BEAL staff.

5. Specimen Conditioning – if any:

5.1 Specimens were installed at room conditions.

6. Test Criterion:

6.1 Unless specified by the client or selected by BEAL, the results obtained from this test procedure are to be assessed by a structural engineer with appropriate experience and skills.

7. Specimen Preparation:

7.1 The test methodology titled P21 A Wall bracing test and Evaluation Procedure, describes the requirements for the preparation and installation of the test panels into the mechanical test jig.

7.2 Generally, test specimens will be either 2,400mm, or 1,200mm, or 600mm or 400mm wide by 2,400mm in height. Timber frames of 1,200mm and 400mm wide were used.

7.3 For these tests, Premiere Building Products Gypsum board was tested one side. 400 mm panel length x 2400 mm panel height. 32mm x 6g GIB® Grabber® High Thread Screws at 50,100,150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element, 300mm maximum spacing to intermediate studs. No dwangs.

7.4 Pairs of hand driven 100 x 3.75mm nails at 600mm centres to baseplate with 20 mm particle board over 90x90 joist. Restrained block with three 100x4 mm nails to end studs.the specified Gypsum Board was fixed to the timber frames on one side only.

7.5 To the end of the hydraulic ram, an attachment device is fixed onto the top plate of the test specimen. Refer photos.

8. Test Data:

The following information was provided by the client:

- a) Size of the panel:
- b) Overall thickness of the panel:
- c) description of each component:
- d) description of each type of fixing:
- e) description of any adhesives and or tapes used:
- f) description of fixing spacings:
- g) description of specified end of wall hold-down(s):
- h) Title of the technical and installation literature – with version / date:

9. Analysis of the resulting test data:

- 9.1 An analysis of the force versus displacement data in csv format and converted into a scatter data graph with smooth lines, was made.
- 9.2 The resulting data file was forwarded to the structural engineer for further assessment.
- 9.3 The result of the engineers analysis is shown in Appendix A (at the back of this report).
- 9.4 The following were arrived at:

“All PBP bracing elements using the standard 10mm Gypsum Board with timber framing as per NZS3604 shall have fixing spacings at 50, 100, 150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element, with 300mm maximum spacing to intermediate stud or dwang.

Bracing elements with no HandiBrac® hold-down system, with bottom plate fixed as per NZS3604, can be used as a bracing element with the following bracing ratings:

Minimum length (m)	BU/m W	BU/m EQ
0.4	11.5	14.9
1.2	30.3	34.8

When the Gib HandiBrac® hold-down system is used in conjunction with 10mm PBP Standard Gypsum Board, it can be used as a bracing element with the following bracing ratings:

Minimum length (m)	BU/m W	BU/m EQ
1.2	75	64

“

10. Observations / Comment:

- 10.1 Graph TR221111-1 representing a 1,200mm wide x 2,400mm high specimen in KN vs mm, while Graph TR221111-2 representing a 400mm wide x 2,400mm high specimen in KN vs mm.

11. Attachments:

- 11.1 Report of representative graphs and resulting analysis.

11.2 Relevant Photos.

11.3 **The csv and video files are available on request.**

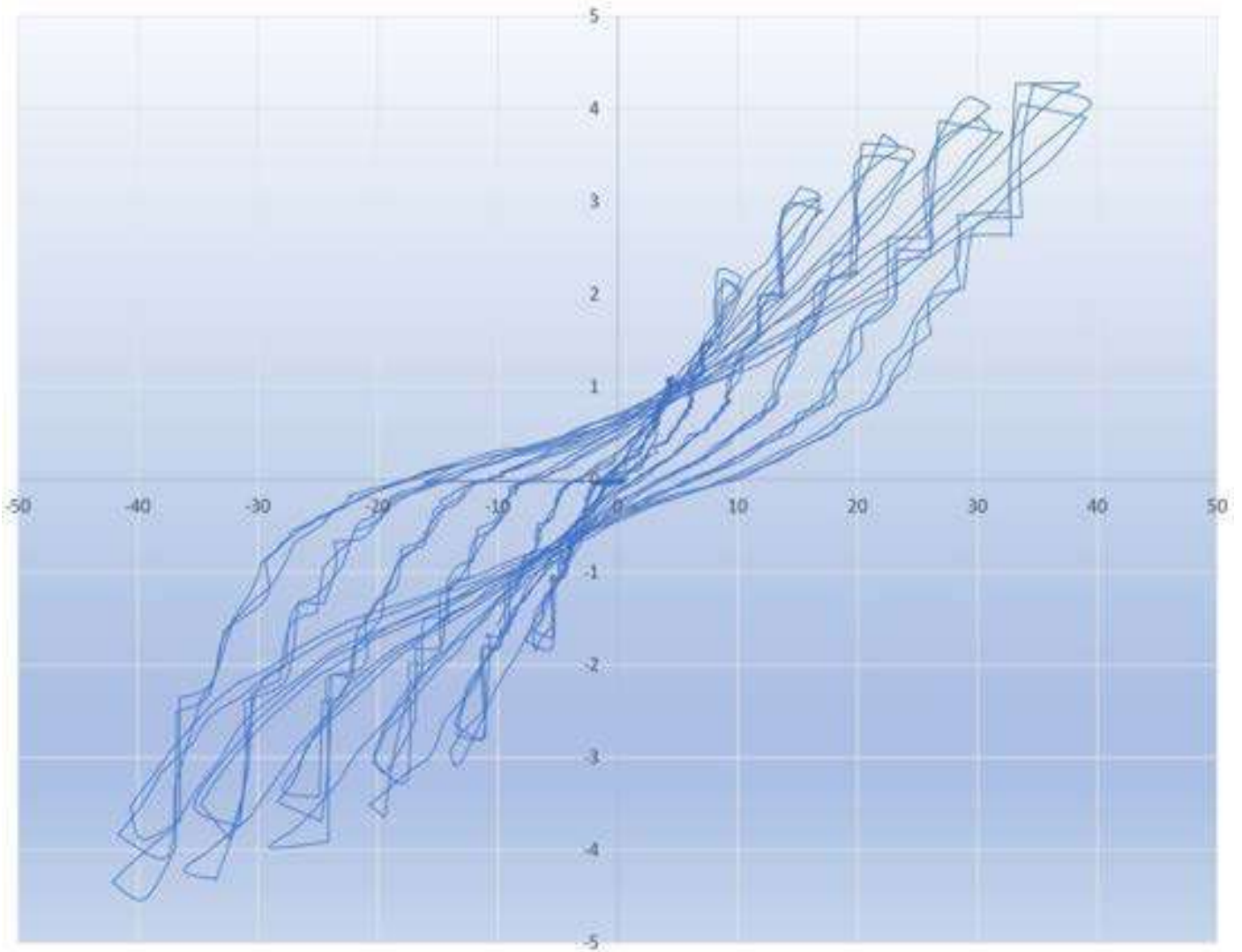
A handwritten signature in blue ink, appearing to read 'C. Prouse', with a horizontal line extending to the right.

Colin Prouse – Senior Building Scientist

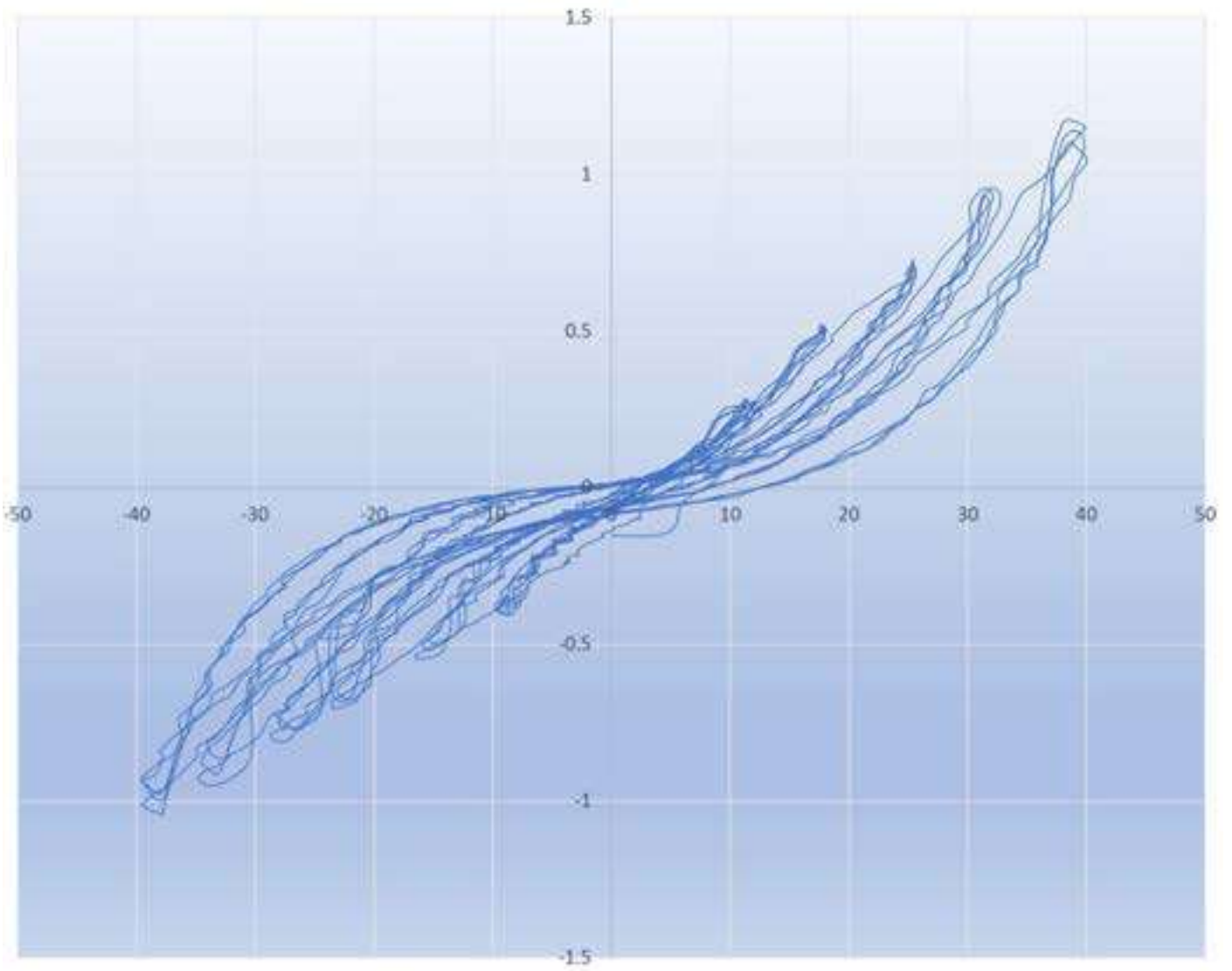
Building Element Assessment Laboratory Limited

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TR221111-1 P21 Force vs Displacement

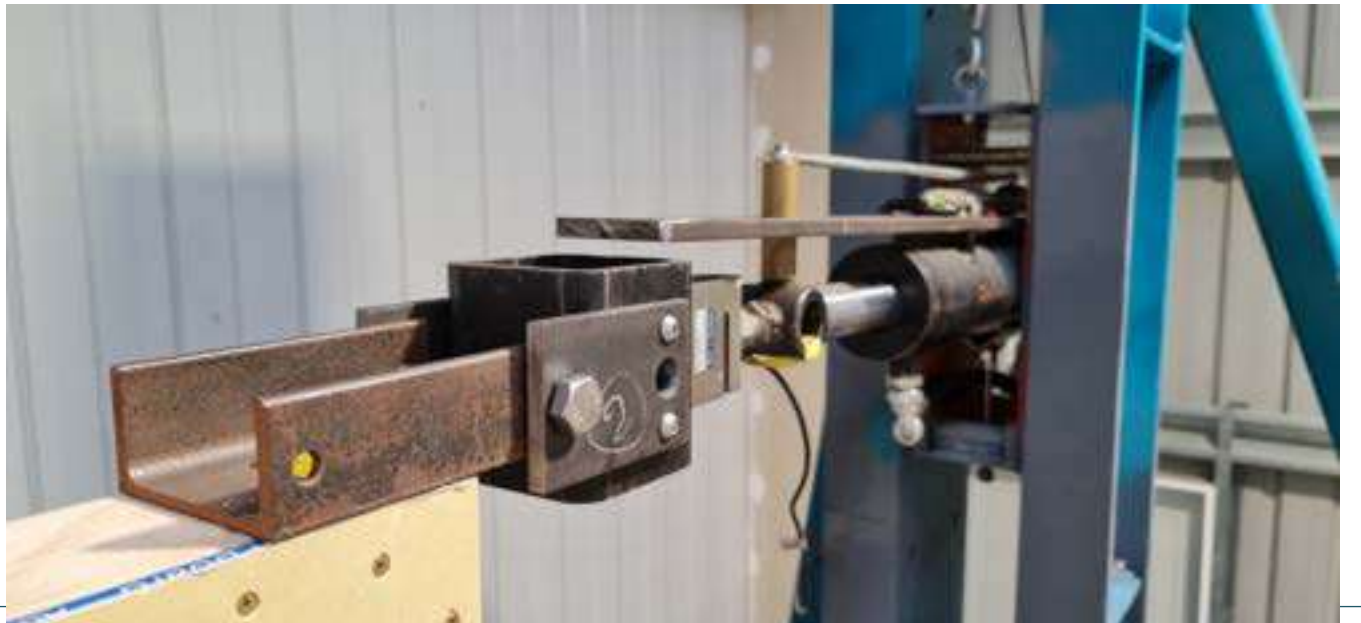
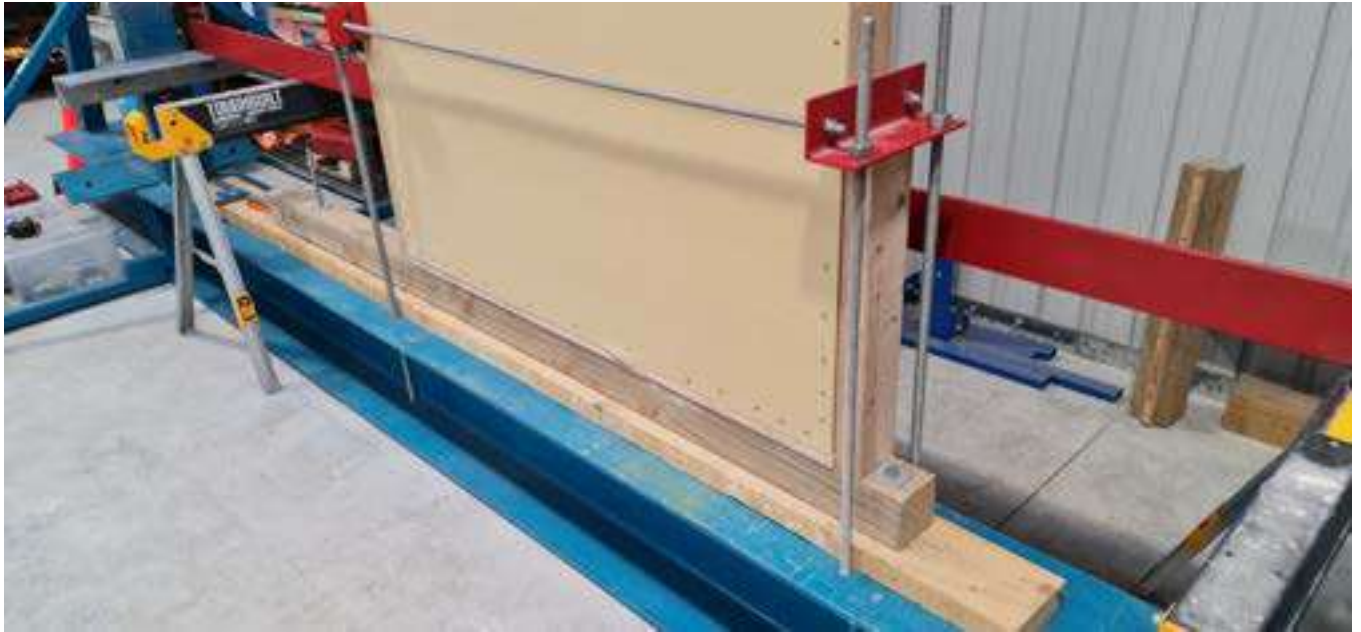


TR221111-2 P21 Force versus Displacement









12. APPENDIX A:

King & Dawson Ltd architects & engineers			Page No.	
JOB: Premiere Building Products	JOB No: 10933	DESIGNER:	TW	
	DATE:	CHECKED:		

P21 Test Result Analysis. *1200 mm PBP Panels
(with handi-bracs)*

Sample description: Sample length 1.2 m

Premiere Building Products Gypsum board one side. 1200 mm panel length x 2400 mm panel height. 32mm x 6g GiB® Grabber® High Thread Screws at 50,100,150, 225, 300mm maximum from each corner and 150mm thereafter around the perimeter of the bracing element, 300mm maximum spacing to intermediate studs. No dwangs.
 Pairs of hand driven 100 x 3.75mm nails at 600mm centres to baseplate with 20 mm particle board over 90x90 joist. Handi-brac brackets to stud each end of panel with screw bolt to 90x90 joist. Restrained block with three 100x4 mm nails to end studs.

y value Nominate a target displacement (from the range 15 mm, 22 mm, 29 mm and 36 mm)
 y 36 mm

P₂ values Loads associated with 8 mm displacement

Sample		
TR230117-2	2.59	kN
TR230117-3	2.5	kN
TR230117-1	2.92	kN
		kN

K1 value C - Average residual displacement after first cycle (cycle to min 8mm displacement)

Sample	C+ (mm)	C- (mm)	Average	K1
TR230117-2	2	-4.24	3.12	1.0
TR230117-3	1.93	-3.12	2.53	1.0
TR230117-1	3.03	-1.57	2.30	1.0
			0.00	1.0

$K1 = 1.4 - C/8 \leq 1.0$ *Note, reject sample if K1 < 0.8*

Py and Ry values

Py - Average of absolute values of first cycle loads:

	+Py (kN)	-Py (kN)	
TR230117-2	5.17	-4.81	4.99
TR230117-3	5.03	-4.18	4.60
TR230117-1	5.44	-4.77	5.11

Py 4.90

Ry - Average of absolute values of fourth cycles:

	+Ry (kN)	-Ry (kN)	
TR230117-2	4.24	-3.52	3.87
TR230117-3	4.25	-3.34	3.67
TR230117-1	4.52	-3.61	3.97

Ry 3.84

King & Dawson Ltd architects & engineers				Page No.	
JOB: Premiere Building Products	JOB No	10933	DESIGNER	TW	
	DATE		CHECKED		

P21 Test Result Analysis.

1200 mm PBP Panels

d value Displacement corresponding to load of P/2

	di	
TR230117-2	7.44	mm
TR230117-3	7.59	mm
TR230117-1	7.27	mm
		mm
d	7.43	

Ductility Ductility of set of specimens.

μ $\mu = y/d$

K4	1.00
K2	1.2

μ	1	2	3	3.5	4
K4	0.35	0.6	0.74	0.87	1

Sample Ratings

EQ kN EQ = K4 * Ry

BR_{EQ} is equal to the following: $BR_{EQ} = 20 * \min \left(EQ, \frac{PB * K1 * K2}{0.55} \right)$

BR_w is equal to the following: $BR_w = 20 * \min \left(P_y, \frac{PB * K1 * K2}{0.71} \right)$

	BR _{EQ}	Result	BR _w	Result
TR230117-2	76.8	76.8	87.5	87.5
	76.8	76.8	84.5	84.5
	76.8	76.8	98.0	98.0
min	76.8		84.5	

Bracing Ratings

based on the average sample ratings with all ratings capped at 1.2 x min

Bracing Unit Rating

BR_{EQ} BU

BR_{EQ} BU/m

BR_w BU

BR_w BU/m

PREMIER PACKAGING LTD

TEST REPORT

SCOPE OF WORK

STANDARD GYPSUM BOARD

REPORT NUMBER

220415166GZU-002

TEST DATE(S)

From 6/24/2022 to 7/6/2022

ISSUE DATE

7/11/2022

[REVISED DATE]

/

PAGES

7



Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

DOCUMENT CONTROL NUMBER

TTRF_Performance_02a

Effective data:2020-12-30

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Test Report

Report No.: 220415166GZU-002

Report Date: 7/11/2022

Statement

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- 2.This report is invalid where any unauthorized modification indicated.
- 3.Don't copy this report in partial (except full copy) without any official approval in written by our company.
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- 5.All the tests results give the statement of conformity refer to the decision rule of "Procedure 2 " Accuracy Method" as stated in the IEC Guide 115:2007.

Test Report

Report No.: 220415166GZU-002

Report Date: 7/11/2022

Client Information:

Applicant Name:	PREMIER PACKAGING LTD
Address:	17A GABADOR PLACE, MT WELLINGTON, AUCKLAND 1060, NEW ZEALAND
Attn:	Sue Lee

Product Information:

Product Name	STANDARD GYPSUM BOARD	Sample Description	Good Condition
Model and/or type reference	STANDARD 10MM	Received Date	6/20/2022
Sample ID.	S220415166GZU-002	Sample Amount	1 package
Brand name or Remark	PREMIER GYPSUM BOARD	Specification	10MMX1200MMX2400 MM
Manufacturer			
Address			
Test Type	Performance test, samples provided by the applicant		

Test Methods And Standards:

Test Standard	AS/NZS 2588: 2018
Specification Standard	AS/NZS 2588: 2018
Test Conclusion	Refer to the following pages

Note:1.*The test item is subcontracted to the body accredited by CNAS.

Laboratory information:

Testing Laboratory	Intertek testing services Shenzhen Ltd. Guangzhou Branch
Test location	Room 4103 & 4203, No. 63 Punan Road, Huangpu District, Guangzhou, China

Report Authorized :

Authorized By:

Jeff Deng

Jeff Deng
Reviewer

Checked By:

Kelming Wang

Kelming Wang
Project Engineer

Noted: If you have any questions for the report, please contact: lillian.lf.he@intertek.com

Test Report

Report No.: 220415166GZU-002

Report Date: 7/11/2022

Test Items, Method and Results:

No.	Test Item	Test Parameter	Test Result	Verdict
1	Classification	<p>Test method: Clause 5 of AS/NZS 2588: 2018</p> <p>Gypsum plasterboard shall be classified by the following grades and by performance requirements:</p> <p>(a) Bracing grade. (b) Fire-resistant grade. (c) Standard grade. (d) Water-resistant grade.</p>	The product complied to the Standard Grade	Pass
2	Thickness	<p>Test method: Clause 6.1 of AS/NZS 2588: 2018</p> <p>Requirements of AS/NZS 2588: 2018: The average thickness of gypsum plasterboard, when measured in accordance with Appendix B, shall be within ± 0.5 mm of the nominal thickness.</p> <p>The thickness range for each board measured shall not exceed 0.8 mm for standard grade plasterboard and 1.2 mm for fire-resistant grade plasterboard.</p>	<p>Nominal thickness: 10 mm</p> <p>Average thickness: 9.9 mm</p> <p>Maximum thickness: 10.0 mm</p> <p>Minimum thickness: 9.9 mm</p>	Pass
3	Width	<p>Test method: Clause 6.2 of AS/NZS 2588: 2018</p> <p>Requirements of AS/NZS 2588: 2018: The actual width of gypsum plasterboard shall be within ± 3 mm of the nominal width</p>	<p>Nominal width: 1200 mm</p> <p>Average width: 1200 mm</p> <p>Maximum width: 1201 mm</p> <p>Minimum width: 1198 mm</p>	Pass
4	Length	<p>Test method: Clause 6.3 of AS/NZS 2588: 2018</p> <p>Requirements of AS/NZS 2588: 2018: The length of gypsum plasterboard sheets shall be within ± 5 mm of the nominal specified length.</p>	<p>Nominal length: 2400 mm</p> <p>Average length: 2400 mm</p> <p>Maximum length: 2401 mm</p> <p>Minimum length: 2399 mm</p>	Pass

Test Report

Report No.: 220415166GZU-002

Report Date: 7/11/2022

5	Squareness	Test method: Clause 6.4 of AS/NZS 2588: 2018 Requirements of AS/NZS 2588: 2018: The cut ends of the board shall be square with the edges within ± 3 mm in the full width of the board.	Squareness: Average: 0.8 mm; Maximum: 1.1 mm	Pass											
6	Edge finish	Test method: Clause 7 of AS/NZS 2588: 2018 Requirements of AS/NZS 2588: 2018: Edges of gypsum plasterboard shall be square, recessed or bevelled to suit the specified joint finish.	Square edge	Pass											
7	Bending strength	Test method: Clause 9.1.2 and Appendix C of AS/NZS 2588: 2018, Method A; Test speed: 25mm/min Requirements of AS/NZS 2588: 2018:	Perpendicular: 400 N; Parallel: 176 N	Pass											
		<table border="1"> <thead> <tr> <th rowspan="2">Nominal thickness mm</th> <th colspan="2">Load N</th> </tr> <tr> <th>Perpendicular</th> <th>Parallel</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>360</td> <td>150</td> </tr> <tr> <td>13</td> <td>490</td> <td>200</td> </tr> </tbody> </table>	Nominal thickness mm	Load N		Perpendicular	Parallel	10	360	150	13	490	200		
Nominal thickness mm	Load N														
	Perpendicular	Parallel													
10	360	150													
13	490	200													
8	Edge hardness	Test method: Clause 9.1.3 and Appendix D of AS/NZS 2588: 2018; Test speed: 25 mm/min; Requirements of AS/NZS 2588: 2018: When tested in accordance with Appendix D, gypsum plasterboard shall have an edge hardness of not less than 45 N.	Average edge hardness: 168 N	Pass											
9	Nail pull resistance	Test method: Clause 9.1.4 and Appendix E of AS/NZS 2588: 2018, Method A; Test speed: 25mm/min Requirements of AS/NZS 2588: 2018: When tested in accordance with Appendix E, gypsum plasterboard shall have minimum nail pull resistance appropriate to its intended use as shown in below table:	Nail pull resistance: Average: 444 N; Minimum: 389 N	Pass											
		<table border="1"> <thead> <tr> <th>Walls (Studs max. 600 mm centres) N</th> <th>Ceilings (Joists/furring max. 450 mm centres) N</th> <th>Ceilings (Joists/furring max. 600 mm centres) N</th> </tr> </thead> <tbody> <tr> <td>270</td> <td>270</td> <td>300</td> </tr> </tbody> </table>	Walls (Studs max. 600 mm centres) N	Ceilings (Joists/furring max. 450 mm centres) N	Ceilings (Joists/furring max. 600 mm centres) N	270	270	300							
Walls (Studs max. 600 mm centres) N	Ceilings (Joists/furring max. 450 mm centres) N	Ceilings (Joists/furring max. 600 mm centres) N													
270	270	300													

Test Report

Report No.: 220415166GZU-002

Report Date: 7/11/2022

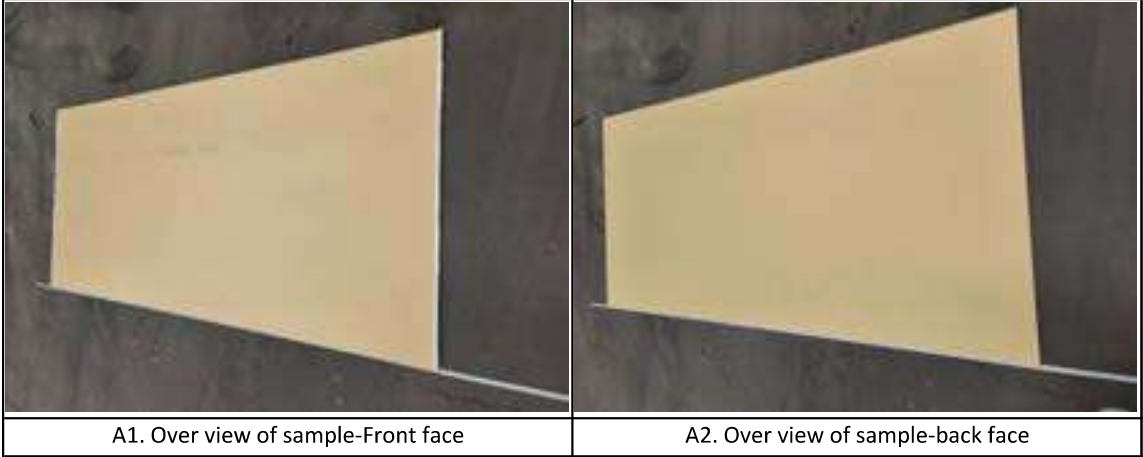
10	Bond strength	<p>Test method: Clause 9.1.5 and Appendix E of AS/NZS 2588: 2018; Test speed: 50 mm/min; Requirements of AS/NZS 2588: 2018: When tested in accordance with Appendix F, the bond strength of the test specimen in tension shall be not less than 250 N after 24 h drying.</p>	<p>bond strength: Average: 345 N; Minimum: 300 N</p>	Pass														
11	Humidified deflection	<table border="1"> <tr> <td colspan="3" data-bbox="574 709 1036 835"> Test method: Clause 9.1.6 and Appendix G of AS/NZS 2588: 2018, Method A; Requirements of AS/NZS 2588: 2018: </td> </tr> <tr> <td data-bbox="574 835 753 1020" rowspan="2">Test method</td> <td colspan="2" data-bbox="753 835 1036 911">Maximum deflection mm</td> </tr> <tr> <td data-bbox="753 911 893 1020">Spanning board 450 mm</td> <td data-bbox="893 911 1036 1020">Spanning board 600 mm</td> </tr> <tr> <td data-bbox="574 1020 753 1096">A — Cantilever method</td> <td data-bbox="753 1020 893 1096">50</td> <td data-bbox="893 1020 1036 1096">25</td> </tr> <tr> <td data-bbox="574 1096 753 1205">B — Simply supported method</td> <td data-bbox="753 1096 893 1205">10</td> <td data-bbox="893 1096 1036 1205">5</td> </tr> </table>	Test method: Clause 9.1.6 and Appendix G of AS/NZS 2588: 2018, Method A; Requirements of AS/NZS 2588: 2018:			Test method	Maximum deflection mm		Spanning board 450 mm	Spanning board 600 mm	A — Cantilever method	50	25	B — Simply supported method	10	5	<p>Humidified deflection: 21 mm</p>	Pass
Test method: Clause 9.1.6 and Appendix G of AS/NZS 2588: 2018, Method A; Requirements of AS/NZS 2588: 2018:																		
Test method	Maximum deflection mm																	
	Spanning board 450 mm	Spanning board 600 mm																
A — Cantilever method	50	25																
B — Simply supported method	10	5																
12	Marking	<p>Test method: Clause 10 of AS/NZS 2588: 2018; Each sheet of gypsum plasterboard shall be clearly marked with the following particulars: (a) The manufacturer's name or trademark. (b) Nominal thickness. (c) Width. (d) Type of edge. (e) Product name or classification. The grade of plasterboard shall be displayed on the back of the sheet at no greater than 1.2 m intervals. This grading shall be displayed by the use of registered marks, trademarks or other means that clearly classifies the plasterboard.</p>	<p>No marking submitted</p>	-														

Test Report

Report No.: 220415166GZU-002

Report Date: 7/11/2022

Appendix A: Sample Received Photo



Revision:

Revision No.	Date	REVISION	Reviser	Reviewer
/	/	Original Report Issue	/	/

*****End of Report*****



TEST REPORT

SCOPE OF WORK



REPORT NUMBER

220628009SHF-002

TEST DATE(S)

2022-06-28- 2022-07-15

ISSUE DATE

2022-07-15

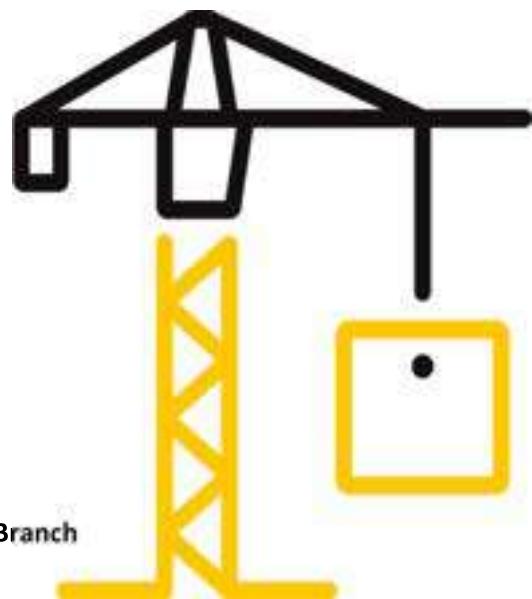
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Test Report

Issue Date: 2022-07-15 Intertek Report No. 220628009SHF-002
Applicant: [Redacted]
Address: [Redacted]
Attn: Qiang Xin
Manufacturer: [Redacted]
Address: [Redacted]
Test Type: Performance test, samples provided by the applicant.

Product Information

Product Name	General Gypsum plasterboard	Brand	[Redacted]
Sample Description	Good Condition	Sample Amount	6 pcs
		Received Date	2022-06-21
Sample ID	Model	Specification	
S220628009SHF.007~012	P	PC 2400×1200×13.0mm	

Test Methods And Standards

Test Standard	AS/NZS 2588:2018 6.1, 6.2, 6.3, 6.4, 7, 9.1.2, 9.1.3, 9.1.4, 9.1.5, 9.1.6, Appendix B to G
Specification Standard	AS/NZS 2588:2018
Test Conclusion	The samples were tested according to the above standards, and the results are shown in the following page.

Note:

1. This report relates specifically to the sample(s) that were drawn and provided by the applicant or their nominated third party. The reported result(s) provide no warranty or verification on the sample(s) representing any specific goods and/or shipment and only relate to the sample(s) as received and tested.

Report Authorized


Daniel Zhang Flora Fan Erin Huang
Name: Daniel Zhang Name: Flora Fan Name: Erin Huang
Title: Approver Title: Reviewer Title: Project Engineer

Test Report

Issue Date: 2022-07-15

Intertek Report No. 220628009SHF-002

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Thickness	AS/NZS 2588:2018 6.1 & Appendix B	Tolerance: ± 0.5 mm of the nominal value	Nominal: 13.0 mm Measured: 13.00 mm Tolerance: 0.00 mm	Pass
Width	AS/NZS 2588:2018 6.2	Tolerance: ± 3 mm of the nominal value	Nominal: 1200 mm Measured: 1198.4 mm Tolerance: -1.6 mm	Pass
Length	AS/NZS 2588:2018 6.3	Tolerance: ± 5 mm of the nominal value	Nominal: 2400 mm Measured: 2399.4 mm Tolerance: -0.6 mm	Pass
Squareness	AS/NZS 2588:2018 6.4	± 3 mm	Maximum: 1.0 mm	Pass
Edge finish	AS/NZS 2588:2018 7	Shall comply with square, recessed or bevelled edges Width: 40.0~60.0mm Depth: 0.8~2.3mm	Comply with recessed egde Width: 52.32mm Depth: 1.02mm	Pass



Test Report

Issue Date: 2022-07-15

Intertek Report No. 220628009SHF-002

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Bending strength	AS/NZS 2588:2018 9.1.2 & Appendix C	Nominal thickness: 13.0 mm Perpendicular: 490 N Parallel: 200 N	Perpendicular: 570 N Parallel: 260 N	Pass



Test Report

Issue Date: 2022-07-15

Intertek Report No. 220628009SHF-002

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Edge hardness	AS/NZS 2588:2018 9.1.3 & Appendix D	$\geq 45\text{N}$	Average: 121 N	Pass



Test Report

Issue Date: 2022-07-15

Intertek Report No. 220628009SHF-002

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Nail pull resistance	AS/NZS 2588:2018 9.1.4 & Appendix E	Intended use: Ceilings (Joists/furring max. 450 mm centres) Minimum: 270N	Average: 272 N	Pass

Note: Intended use was specified by applicant.



Test Report

Issue Date: 2022-07-15

Intertek Report No. 220628009SHF-002

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Bond strength	AS/NZS 2588:2018 9.1.5 & Appendix F	$\geq 250\text{N}$	Average: 369 N	Pass



Test Report

Issue Date: 2022-07-15

Intertek Report No. 220628009SHF-002

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Humidified deflection	AS/NZS 2588:2018 9.1.6 & Appendix G Test method A-Cantilever method	Spanning: 450 mm Maximum deflection: ≤ 50 mm	Maximum deflection: 0.57 mm	Pass

Note:

- Spanning was specified by applicant.



Test Report

Issue Date: 2022-07-15

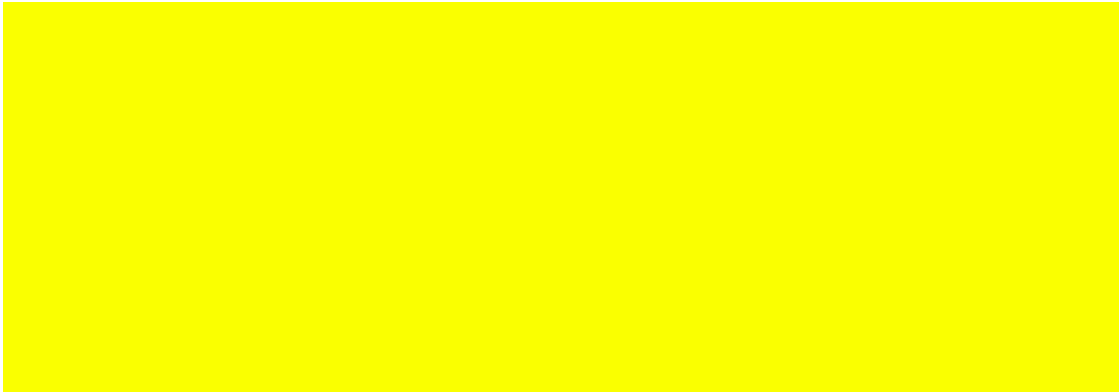
Intertek Report No. 220628009SHF-002

Appendix A: Sample Received Photo



Revision:

NO.	Date	Changes
220628009SHF-002	2022-07-15	First issue



TEST REPORT

SCOPE OF WORK

REPORT NUMBER

220628009SHF-003

TEST DATE(S)

2022-06-28- 2022-07-18

ISSUE DATE

2022-07-18

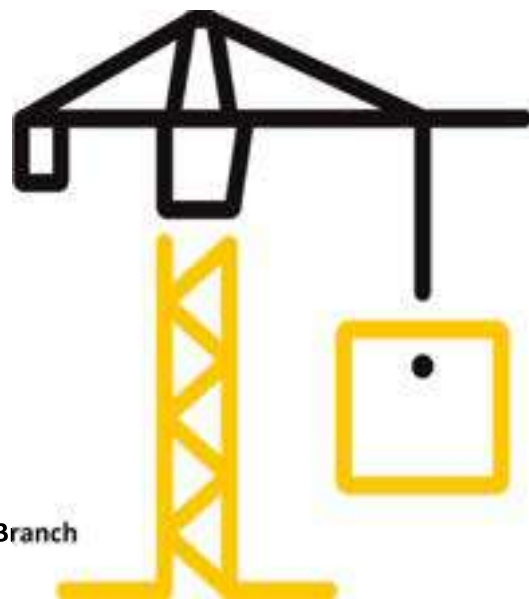
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Test Report

Issue Date: 2022-07-18 Intertek Report No. 220628009SHF-003
Applicant: [Redacted]
Address: [Redacted]
Attn: Qiang Xin
Manufacturer: [Redacted]
Address: [Redacted]
Test Type: Performance test, samples provided by the applicant.

Product Information

Product Name	[Redacted] Water-Resistant Gypsum plasterboard	Brand	[Redacted]
Sample Description	Good Condition	Sample Amount	6 pcs
		Received Date	2022-06-21
Sample ID	Model	Specification	
S220628009SHF.013~020	S	SC 2400×1200×10.0mm	

Test Methods And Standards

Test Standard	AS/NZS 2588:2018 6.1, 6.2, 6.3, 6.4, 7, 9.1.2, 9.1.3, 9.1.4, 9.1.5, 9.1.6, 9.2.2, 9.2.3, Appendix B to I
Specification Standard	AS/NZS 2588:2018
Test Conclusion	The samples were tested according to the above standards, and the results are shown in the following page.

Note:

1. This report relates specifically to the sample(s) that were drawn and provided by the applicant or their nominated third party. The reported result(s) provide no warranty or verification on the sample(s) representing any specific goods and/or shipment and only relate to the sample(s) as received and tested.

Report Authorized


Daniel Zhang Flora Fan Erin Huang
Name: Daniel Zhang Name: Flora Fan Name: Erin Huang
Title: Approver Title: Reviewer Title: Project Engineer

Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-003

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Thickness	AS/NZS 2588:2018 6.1 & Appendix B	Tolerance: ± 0.5 mm of the nominal value	Nominal: 10.0 mm Measured: 9.58 mm Tolerance: -0.42 mm	Pass
Width	AS/NZS 2588:2018 6.2	Tolerance: ± 3 mm of the nominal value	Nominal: 1200 mm Measured: 1197.6 mm Tolerance: -2.4 mm	Pass
Length	AS/NZS 2588:2018 6.3	Tolerance: ± 5 mm of the nominal value	Nominal: 2400 mm Measured: 2399.2 mm Tolerance: -0.8 mm	Pass
Squareness	AS/NZS 2588:2018 6.4	± 3 mm	Maximum: 1.0 mm	Pass
Edge finish	AS/NZS 2588:2018 7	Shall comply with square, recessed or bevelled edges Width: 40.0~60.0mm Depth: 0.8~2.3mm	Comply with recessed egde Width: 46.53mm Depth: 1.13mm	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-003

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Bending strength	AS/NZS 2588:2018 9.1.2 & Appendix C	Nominal thickness: 10.0 mm Perpendicular: 360 N Parallel: 150 N	Perpendicular: 385 N Parallel: 160 N	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-003

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Edge hardness	AS/NZS 2588:2018 9.1.3 & Appendix D	$\geq 45\text{N}$	Average: 189 N	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-003

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Nail pull resistance	AS/NZS 2588:2018 9.1.4 & Appendix E	Intended use: Ceilings (Joists/furring max. 450 mm centres)	Average: 378 N	Pass
		Minimum: 270N	Minimum: 355 N	

Note: Intended use was specified by applicant.



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-003

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Bond strength	AS/NZS 2588:2018 9.1.5 & Appendix F	$\geq 250\text{N}$	Average: 422 N	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-003

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Humidified deflection	AS/NZS 2588:2018 9.1.6 & Appendix G Test method A-Cantilever method	Spanning: 450 mm Maximum deflection: ≤ 50 mm	Maximum deflection: 0.61 mm	Pass

Note:

- Spanning was specified by applicant.



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-003

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Water Resistance	AS/NZS 2588:2018 9.2.2 & Appendix H	The specimens shall have an average water absorption of not more than 5% weight after two hours of testing.	Average: 4.3 %	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-003

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Surface water Resistance	AS/NZS 2588:2018 9.2.3 & Appendix I	The average difference between the dry and wet weights of the specimens shall not exceed 1.6g after two hours of testing.	Average: 1.6 g	Pass



Test Report

Issue Date: 2022-07-18

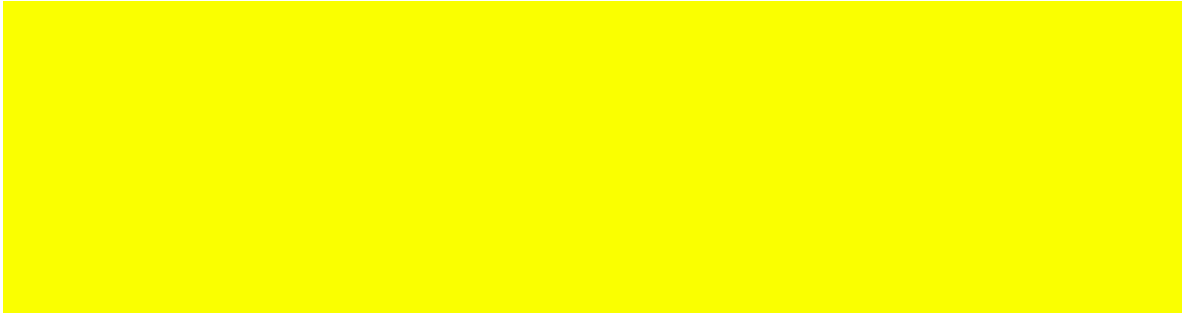
Intertek Report No. 220628009SHF-003

Appendix A: Sample Received Photo



Revision:

NO.	Date	Changes
220628009SHF-003	2022-07-18	First issue



TEST REPORT

SCOPE OF WORK

Water-Resistant Gypsum plasterboard

REPORT NUMBER

220628009SHF-004

TEST DATE(S)

2022-06-28- 2022-07-18

ISSUE DATE

2022-07-18

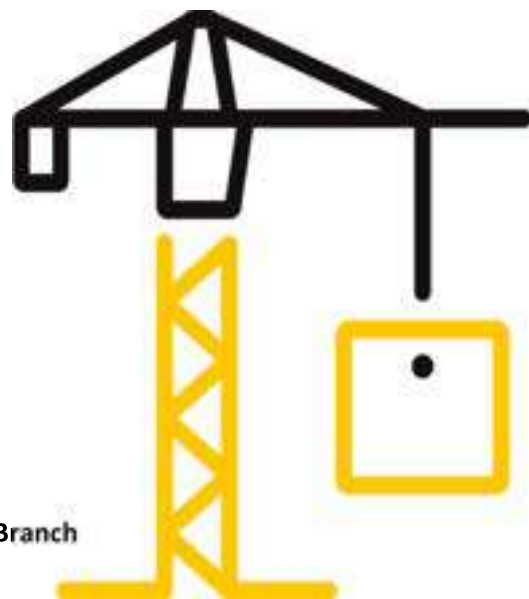
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Test Report

Issue Date: 2022-07-18 Intertek Report No. 220628009SHF-004
Applicant: [Redacted]
Address: [Redacted]
Attn: [Redacted]
Manufacturer: [Redacted]
Address: [Redacted]
Test Type: Performance test, samples provided by the applicant.

Product Information

Product Name	[Redacted] Water-Resistant Gypsum plasterboard	Brand	[Redacted]
Sample Description	Good Condition	Sample Amount	6 pcs
		Received Date	2022-06-21
Sample ID	Model	Specification	
S220628009SHF.021~028	S	SC 2400×1200×13.0mm	


Test Methods And Standards

Test Standard	AS/NZS 2588:2018 6.1, 6.2, 6.3, 6.4, 7, 9.1.2, 9.1.3, 9.1.4, 9.1.5, 9.1.6, 9.2.2, 9.2.3, Appendix B to I
Specification Standard	AS/NZS 2588:2018
Test Conclusion	The samples were tested according to the above standards, and the results are shown in the following page.

Note:

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Report Authorized


Daniel Zhang Flora Fan Erin Huang
Name: Daniel Zhang Name: Flora Fan Name: Erin Huang
Title: Approver Title: Reviewer Title: Project Engineer

Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-004

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Thickness	AS/NZS 2588:2018 6.1 & Appendix B	Tolerance: ± 0.5 mm of the nominal value	Nominal: 13.0 mm Measured: 12.66 mm Tolerance: -0.34 mm	Pass
Width	AS/NZS 2588:2018 6.2	Tolerance: ± 3 mm of the nominal value	Nominal: 1200 mm Measured: 1197.4 mm Tolerance: -2.6 mm	Pass
Length	AS/NZS 2588:2018 6.3	Tolerance: ± 5 mm of the nominal value	Nominal: 2400 mm Measured: 2398.6 mm Tolerance: -1.4 mm	Pass
Squareness	AS/NZS 2588:2018 6.4	± 3 mm	Maximum: 1.0 mm	Pass
Edge finish	AS/NZS 2588:2018 7	Shall comply with square, recessed or bevelled edges Width: 40.0~60.0mm Depth: 0.8~2.3mm	Comply with recessed egde Width: 48.17mm Depth: 1.64mm	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-004

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Bending strength	AS/NZS 2588:2018 9.1.2 & Appendix C	Nominal thickness: 13.0 mm Perpendicular: 490 N Parallel: 200 N	Perpendicular: 545 N Parallel: 240 N	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-004

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Edge hardness	AS/NZS 2588:2018 9.1.3 & Appendix D	$\geq 45\text{N}$	Average: 148 N	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-004

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Nail pull resistance	AS/NZS 2588:2018 9.1.4 & Appendix E	Intended use: Ceilings (Joists/furring max. 450 mm centres)	Average: 319 N	Pass
		Minimum: 270N	Minimum: 277 N	

Note: Intended use was specified by applicant.



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-004

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Bond strength	AS/NZS 2588:2018 9.1.5 & Appendix F	$\geq 250\text{N}$	Average: 434 N	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-004

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Humidified deflection	AS/NZS 2588:2018 9.1.6 & Appendix G Test method A-Cantilever method	Spanning: 450 mm Maximum deflection: ≤ 50 mm	Maximum deflection: 0.43 mm	Pass

Note:

- Spanning was specified by applicant.



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-004

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Water Resistance	AS/NZS 2588:2018 9.2.2 & Appendix H	The specimens shall have an average water absorption of not more than 5% weight after two hours of testing.	Average: 4.0 %	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-004

Test Items, Method and Results:

AS/NZS 2588:2018 Gypsum plasterboard

Test Items	Test Method	Test Requirements	Test Results	Verdict
Surface water Resistance	AS/NZS 2588:2018 9.2.3 & Appendix I	The average difference between the dry and wet weights of the specimens shall not exceed 1.6g after two hours of testing.	Average: 1.1 g	Pass



Test Report

Issue Date: 2022-07-18

Intertek Report No. 220628009SHF-004

Appendix A: Sample Received Photo



Revision:

NO.	Date	Changes
220628009SHF-004	2022-07-18	First issue



Premier Building Products Limited

Premier Gypsum Board - Standard and Water Resistant

PRODUCT WARRANTY AS OF MARCH 2024

Thank you for choosing Premier Building Products' Gypsum Board products. We take pride in the quality and durability of our products and are pleased to offer you the following limited warranty.

Warranty Coverage

Premier Building Products Limited ("Premier") warrants that its Gypsum Board products ("Products") will be free from manufacturing defects in material and workmanship and will perform as stated in the product specifications under normal use and service for a period of 15 years from the date of purchase ("Warranty Period").

Warranty Terms

1. Eligibility:

- This warranty applies only to the original purchaser of the Products ("Purchaser").
- The Products must be installed and maintained according to Premier's published guidelines and instructions.

2. Coverage:

- If the Products fail to meet the terms of this warranty, Premier will, at its discretion, either replace the defective Products or refund the purchase price.
- This warranty does not cover labour costs for installation or removal of the Products or any incidental or consequential damages.

3. Exclusions:

- This warranty does not cover damage or defects resulting from:
 - Improper installation, maintenance, or repair.
 - Abuse, misuse, or alteration of the Products.
 - Exposure to abnormal environmental conditions, including but not limited to extreme temperatures, moisture, or chemicals.
 - Natural disasters, such as floods, earthquakes, or hurricanes.
 - Normal wear and tear.

Address: 17A Gabador Place, Mt. Wellington, Auckland, New Zealand

Email: sales@premierbuildingproducts.co.nz

Contact: 0800 PREMIER (773643)

Website: premierbuildingproducts.co.nz



Warranty Claim Process

1. Notification:

- To make a warranty claim, the Purchaser must notify Premier in writing within 30 days of discovering the defect.
- Include proof of purchase, a detailed description of the defect, and any relevant photographs or documentation.

2. Inspection:

- Premier reserves the right to inspect the Products claimed to be defective before determining whether the claim is valid.
- The Purchaser must allow Premier or its representatives reasonable access to inspect the Products.

3. Resolution:

- If Premier determines that the Products are defective and covered by this warranty, Premier will, at its option, either replace the defective Products or refund the original purchase price.
- Replacement Products may not match the color or texture of the original Products exactly.

Limitation of Liability

To the fullest extent permitted by law, Premier's liability under this warranty is limited to the replacement of defective Products or a refund of the purchase price. Premier shall not be liable for any special, incidental, indirect, or consequential damages, including but not limited to lost profits, loss of use, or damage to other property.

Legal Rights

This warranty is given in addition to other rights and remedies you may have under the New Zealand Consumer Guarantees Act 1993 and Building Act 2004. Our goods come with guarantees that cannot be excluded under the New Zealand Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Contact Information

For warranty claims or questions, please contact Premier Building Products Limited.

Address: 17A Gabador Place, Mt. Wellington, Auckland, New Zealand

Email: sales@premierbuildingproducts.co.nz

Contact: 0800 PREMIER (773643)

Website: premierbuildingproducts.co.nz